FEMS

EUROMAT2013

European Congress and Exhibition on Advanced Materials and Processes

SEVILLA 8 - 13 September **2013**

SPM

socie mat sociedad española de materiales

Final Program

EURO MAT 2013

HOTEL **BARCELÓ RENACIMIENTO**

http://www.euromat2013.fems.eu

EUROMAT 2013 FINAL PROGRAM

I N D E X

MEETING AT A GLANCE

	SUNDAY 8TH		MONDAY 9TH	TUESDAY 10TH	WEDNESDAY 11TH	THURSDAY 12TH	FRIDAY 13TH
08:00		8:30-13:00	Registration/ Technical Secretariat	Registration/ Technical Secretariat	Registration/ Technical Secretariat	Registration/ Technical Secretariat	
		9:00-15:00	Commercial Exhibition	Commercial Exhibition	Commercial Exhibition	Commercial Exhibition	Commercial Exhibition
		15:00-19:30					
		9:00-10:30	Opening / Plenary AM1	Plenary AM1	Plenary AM1	Plenary AM1	Plenary AM1
		10:30-11:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00-19:30	Registration/ Technical Secretariat	11:00-13:00	AM2	AM2	AM2	AM2	AM2
		13:00-15:00	G1I: Education and Career	G2: Technology Transfer	G3I: Strategic Materials for Europe I	G3II: Strategic Materials for Europe II	Closing Ceremony Lunch
				Poster Session 1		Poster Session 2	
			Lunch	Lunch	Lunch	Lunch	
14:30-18:00	Tutorials	15:00-17:00	PM1	PM1	PM1	PM1	
		15:00-19:30	Registration/ Technical Secretariat	Registration/ Technical Secretariat	Registration/ Technical Secretariat	Registration/ Technical Secretariat	
		17:00-17:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
		17:30-19:30	PM2	PM2	PM2	PM2	
20:00	Welcome reception						
		21:00			Organ Concert	Gala Dinner	

ORAL SESSIONS CHART

	MONDAY 9 SEPTEMBER			TUESDAY 10 SEPTEMBER			WEDNESDAY 11 SEPTEMBER			THURSDAY 12 SEPTEMBER			FRIDAY 13 SEPTEMBER
	AM1			AM1			AM1			AM1			AM1
	Opening Ceremony			Prof. Dr. Eduard Arzt			Prof. Claes-Göran Granqvist			Prof. Zhong Lin Wang			Prof. Joanna Aizenberg
	Prof. Michel Rapaz (FEMS EMM 2013)			Prof. Paul Midgley			Prof. Johan A: Martens (FEMS MIP 2013)			Prof. Luigi Nicolai			Prof. Michel Pérez (FEMS MSTP 2013)
	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2
A1I									A1I	A1I	A1I	A1I	A1I
A1III										A1III	A1III	A1III	A1III
A2I	A2I	A2I	A2I										
A2II				A2II	A2II	A2II							
A2III					A2III	A2III	A2III	A2III	A2III	A2III	A2III	A2III	A2III
A3I							A3I	A3I	A3I	A3I	A3I	A3I	
A3II	A3II	A3II	A3II	A3II	A3II	A3II							
A4I										A4I	A4I	A4I	A4I
A4II							A4II	A4II			A4II		
A4IV										A4IV	A4IV	A4IV	A4IV
B1I	B1I	B1I	B1I	B1I	B1I	B1I							
B1II	B1II	B1II	B1II	B1II									
B1III	B1III	B1III	B1III	B1III	B1III	B1III	B1III						
B1IV	B1IV	B1IV	B1IV	B1IV	B1IV	B1IV							
B2I	B2I	B2I	B2I	B2I	B2I								
B3I				B3I	B3I	B3I							
B3II					B3II	B3II	B3II						
B3III					B3III	B3III	B3III	B3III					
B4I							B4I	B4I	B4I	B4I	B4I	B4I	B4I
B4II						B4II	B4II	B4II	B4II				
B4III	B4III	B4III	B4III										
C1I	C1I	C1I	C1I	C1I	C1I	C1I	C1I						
C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II				
C2I										C2I	C2I	C2I	C2I
C2II	C2II	C2II	C2II										
C2III									C2III	C2III	C2III	C2III	C2III
C3I				C3I	C3I	C3I	C3I	C3I					
C3II											C3II	C3II	C3II
C3III							C3III	C3III	C3III				
C3IV										C3IV	C3IV	C3IV	C3IV
C4I	C4I	C4I	C4I	C4I	C4I	C4I	C4I	C4I	C4I				
C4II	C4II	C4II	C4II	C4II									
C4IV							C4IV	C4IV	C4IV				
D1I				D1I	D1I	D1I							
D1III	D1III	D1III	D1III		D1III	D1III	D1III	D1III					
D1IV	D1IV	D1IV	D1IV	D1IV									
D1V	D1V	D1V	D1V	D1V	D1V								
D2I	D2I	D2I	D2I	D2I	D2I	D2I	D2I	D2I	D2I				
D2II				D2II	D2II	D2II							
D2III	D2III	D2III	D2III										
D2IV							D2IV	D2IV	D2IV				
D3I								D3I	D3I	D3I	D3I	D3I	D3I
D3II	D3II	D3II	D3II	D3II	D3II	D3II	D3II	D3II	D3II				
D3IV	D3IV	D3IV	D3IV										
E1II							E1II	E1II	E1II	E1II	E1II	E1II	
E1III	E1III	E1III	E1III	E1III	E1III	E1III	E1III	E1III					
E2I									E2I	E2I	E2I	E2I	E2I
E3I										E3I	E3I	E3I	
E3IV										E3IV	E3IV	E3IV	E3IV
E4I										E4I	E4I	E4I	E4I
F1I							F1I	F1I	F1I	F1I	F1I		
F1II											F1II	F1II	F1II
F2I								F2I	F2I	F2I	F2I	F2I	F2I
F3I										F3I		F3I	F3I
G1II							G1II	G1II	G1II				

ROOM NAME	MONDAY 9 SEPTEMBER			TUESDAY 10 SEPTEMBER			WEDNESDAY 11 SEPTEMBER			THURSDAY 12 SEPTEMBER			FRIDAY 13 SEPTEMBER
SESSION	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2
SEVILLA 1	D2I	D2I	D2I	D2I	D2I	D2I	D2I	D2I	D2I	F1I	F1I		
SEVILLA 2	C4I	C4I	C4I	C4I	C4I	C4I	C4I	C4I	C4I	E1II	E1II	E1II	
SEVILLA 3	C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II	C1II	F2I	F2I	F2I
ESPAÑA 1	C1I	C1I	C1I		A2III	A2III	A2III	A2III	A2III	A2III	A2III	A2III	A2III
ESPAÑA 2	E1III	E1III	E1III	E1III	E1III	E1III	E1III	E1III	A1I	A1I	A1I	A1I	A1I
ESPAÑA 3	B1IV	B1IV	B1IV	C1I	C1I	C1I	F1I	F1I	F1I	C2III	C2III	C2III	C2III
ESPAÑA 4	D1III	D1III	D1III	D1IV	D1III	D1III	D1III	D1III	C2III	E2I	E2I	E2I	E2I
ESPAÑA 5	B1III	B1III	B1III	B1III	B1III	B1III	D3II	D3II	D3II	D3I	D3I	D3I	D3I
ANDALUCÍA 1	D1IV	D1IV	D1IV	D2II	D2II	D2II	C3I	C3I	E2I	A4I	A4I	A4I	A4I
ANDALUCÍA 2	D1V	D1V	D1V	D1V	D1V	B4II	E4I	E4I	E4I	E4I	E4I	E4I	E4I
ANDALUCÍA 3	B4III	B4III	B4III	D1I	D1I	D1I	C1I	F2I	F2I	C2I	C2I	C2I	C2I
ANDALUCÍA 4	D3IV	D3IV	D3IV	B1IV	B1IV	B1IV	C3III	C3III	C3III	C3II	C3II		C3II
ANDALUCÍA 5	B1II	B1II	B1II	B1II	B3III	B3III	B3III	B3III		F2I	F1II	F1II	F1II
ANDALUCÍA 6	D2III	D2III	D2III	C3I	C3I	C3I	G1II	G1II	G1II	A4IV	A4IV	A4IV	A4IV
ANDALUCÍA 7	C4II	C4II	C4II	C4II			C4IV	C4IV	C4IV	C3IV	C3IV	C3IV	C3IV
ANDALUCÍA 8	C2II	C2II	C2II	B3I	B3I	B3I	B4II	B4II	B4II	A1III		A1III	A1III
GIRALDA	A3II	A3II	A3II	A3II	A3II	A3II	A3I	A3I	A3I	A3I	A3I	A3I	
MACARENA	B2I	B2I	B2I	B2I	B2I		E1II	E1II	E1II	E3IV	E3IV	E3IV	E3IV
CARTUJA	D3II	D3II	D3II	D3II	D3II	D3II	B4I	B4I	B4I	B4I	B4I	B4I	B4I
ALAMILLO	B1I	B1I	B1I	B1I	B1I	B1I	B1III	D3I	D3I	E3I	E3I	E3I	E3I
LA PINTA	A2I	A2I	A2I	A2II	A2II	A2II	A4II	A4II		F3I	A4II	F3I	F3I
LA NIÑA					B3II	B3II	B3II				D2IV	D2IV	D2IV

POSTER SESSIONS CHART & AREA G

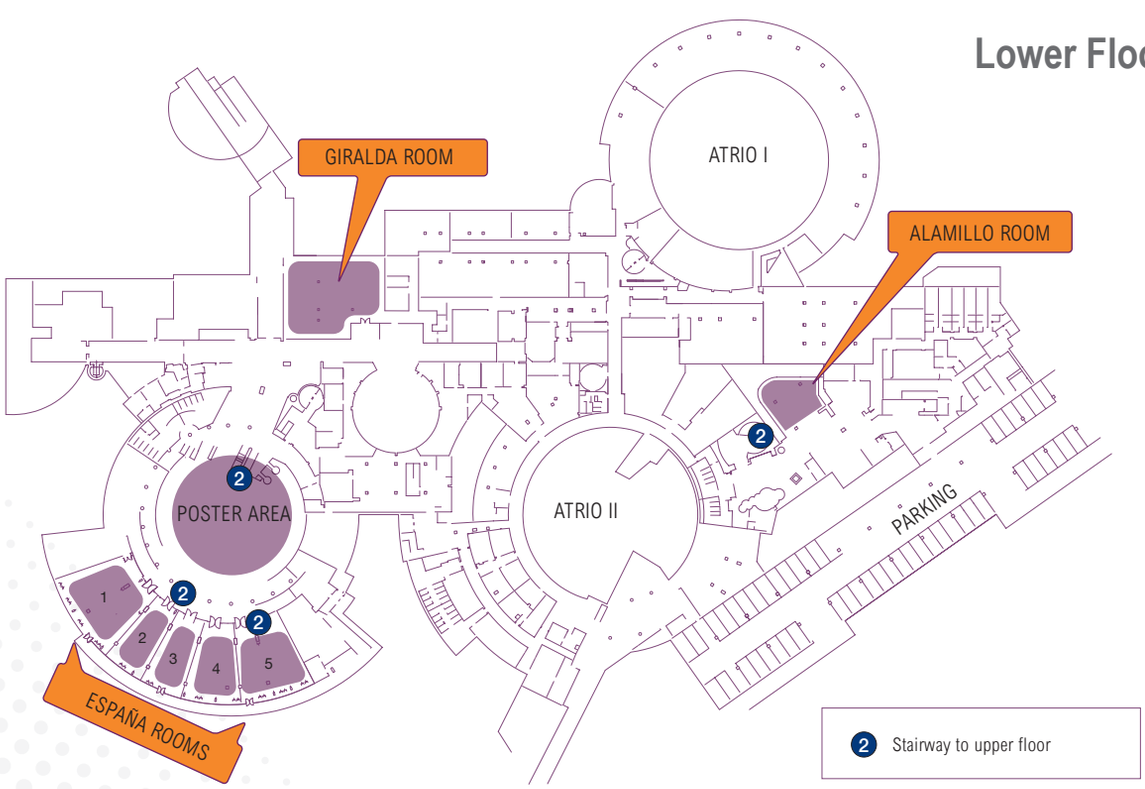
During these sessions sandwich lunch will be served in poster area and inside Sevilla 3 Room

MONDAY 9 SEPTEMBER	TUESDAY 10 SEPTEMBER		WEDNESDAY 11 SEPTEMBER	THURSDAY 12 SEPTEMBER	
13:00-15:00 Sevilla 3 Room AREA G1I	13:00-15:00 Sevilla 3 Room AREA G2	13:00-15:00 Poster Area Poster Session 1	13:00-15:00 Sevilla 3 Room AREA G3I	13:00-15:00 Poster Area Poster Session 2	13:00-15:00 Sevilla 3 Room AREA G3II
AREA G1I: EDUCATION AND CAREER	AREA G2: TECHNOLOGY TRANSFER	A2I A2II A2III B1I B1II B1III B1IV B2I B3I B3II B3III B4III C1I C1II C2II C3I C4I C4II D1I D1III D1V D2I D2II D2IV D3II D3IV E1III	AREA G3I: STRATEGIC MATERIALS FOR EUROPE I	A1I A1III A3I A3II A4I A4II A4IV B4I B4II C2I C2III C3II C3III C3IV C4IV D3I E1II E2I E3I E3IV E4I F1I F1II F2I F3I G1II	AREA G3II: STRATEGIC MATERIALS FOR EUROPE II

HOTEL BARCELÓ

Ground Floor

Lower Floor



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David González

WELCOME LETTER

Dear Delegate,

It is a great pleasure to welcome you to Euromat 2013 in the beautiful South Europe capital of Seville.

Euromat 2013 is the 14th conference in the series of Euromat conferences organised under the auspices of the Federation of European Materials Societies (FEMS) every two years since 1989. This 2013 conference is co-organised by two FEMS member societies: Sociedad Española de Materiales (SOCIEMAT) and Sociedade Portuguesa de Materiais (SPM).

The conference comprises 53 symposia grouped into 6 areas, five organized around classical Materials Science and Technology (MST) subjects - Functional Materials, Structural Materials, Processing, Characterization and Modeling, Energy and Environment, Biomaterials and Healthcare - and one specifically dedicated to Education, Strategy and Technology Transfer, themes of great strategic impact for the future development of our discipline.

Around 2,500 abstracts were received by the dead line of abstract submission in February. This large number of communications has motivated the committee to organise 22 parallel sessions, and to increase the number of oral talks by 20% per session. This has led to a very intense programme covering a wide scope of subjects in which the most recent advances in MST have been highlighted. The set-up of the programme involved the devoted work of more than 120 experts in different fields that have acted as topic coordinators, symposium organisers and co-organisers. It is our pleasure to hereby recognise their work and dedication to their tasks. Without their valuable commitment to deal with the high number of abstracts, the straightforward organization of the scientific programme would not have been possible.

The conference programme integrates approx. 1,500 oral presentations and 900 posters, the latter presented during two posters sessions. To enhance their visibility and impact, they will be strategically distributed during the sessions in coincidence with a major Industrial Exhibition featuring more than 40 exhibitors. A ballot by delegates will select ten poster prizes which will be awarded to highlight the best posters presented at the conference.

Last but not least, we will start the conference with 4 well selected tutorials on Sunday afternoon. These specifically aim to teach attendees on recent developments in emerging fields.

Following the practice of Euromat conferences, no general proceedings will be published for the whole conference, although some symposia organizers have arranged the publication of selected papers in dedicated issues of regular journals.

Euromat 2013 delegates will be provided a USB stick including the titles, authors and abstracts submitted to the conference. We hope that this material, together with some other handset information will serve the more than 2,000 expected delegates in the search and selection of presentations and will contribute to make Euromat 2013 a fruitful and successful event for all attendees.

The regular programme will follow the well-established Euromat format, with the inclusion of nine plenary lectures, addressing hot topics in MST. The first plenary lecture will be given during the Monday opening session by the recipient of the FEMS gold medal 2011, Professor Michel Rappaz. This is a recognition FEMS makes every year to some of the most active researchers in MST. Four other senior and young scientists awarded last year with the Materials Innovation Prize, the Materials Science and Technology Prize, and two FEMS lecturers prizes will be also given the opportunity to make relevant presentations in the conference.

The organisation of the previous events and the realization of many other achievements necessary to organize a successful conference are the result of the modest and not sufficiently recognized work of the scientific secretariat of the conference. We would like to especially recognize the dedication of Juan Carlos García, Ana Lora, Belén Sotillo and Anna Muesmann. Without their efforts and professional skills the organization of Euromat 2013 would not have been possible.

Finally, we would like to conclude by welcoming all of you to Euromat 2013. We are sure that you will enjoy a stimulating Conference and profit from a wonderful time to work, to meet colleagues and to learn about the latest advances in the exciting realm of MST.

On behalf of the scientific committee,

Frank Mücklich
Agustín R. González-Elipe

FEMS WILL PRESENT ITS HIGHER DISTINCTIONS:

FEMS European Materials Medal

MICHEL RAPPAZ

After a PhD in solid state physics (1979) at the Ecole Polytechnique Fédérale de Lausanne (EPFL) and a post-doc at Oak Ridge National Laboratory, Michel Rappaz joined the Laboratory of Physical Metallurgy of EPFL to start an activity on simulation of solidification in 1984. He was nominated Adjunct Professor in 1990 and Full Professor in 2003, time at which he took the lead of the laboratory, renamed then Computational Materials Laboratory.

The main axis of his research is the connection between macroscopic aspects of solidification and microscopic aspects related to microstructure and defect formation. Beside experimental investigations and validations, his group has developed several new physical modelling tools (in particular cellular automata for grain structure formation and granular model for hot tearing). Many of these developments are commercialised by a spin-off company founded by the laboratory in 1991 and now part of the ESI-group (Calcom-ESI). He initiated in 1992 an annual postgraduate course on solidification which has been attended by more than 700 participants from all over the world.

Michel Rappaz has received several awards: the Latsis price in 1990, the Mathewson co-author and author award of TMS in 1994 and 1997, the Koerber foundation award with Profs Y. Bréchet and M. Ashby in 1996, the Sainte-Claire Deville medal of the French Metallurgical Society in 1996, the Bruce Chalmers Award of TMS in 2002, the Mc Donald Memorial Lecture award of Canada in 2005, the Grand Medal of the French Metallurgical Society in 2011. He is a highly-cited author of ISI, a fellow of ASM and IOP, and has co-authored about 300 papers, two books and several proceedings.

FEMS Materials Innovation Prize

JOHAN A. MARTENS

Johan Martens received his PhD (1985) and his habilitation (1988) in applied biological sciences at the KU Leuven. He started his academic career 1982 at the Research Foundation Flanders; from 1988 on he was lecturer, later senior lecturer at KU Leuven. 1997 he became a professor at this university, being the Head of the Department of Microbial and Molecular Systems (2005-2010) and also the Head of Centre of Excellence in Catalytic Science (2005-2009).

Professor Martens' core expertise is in synthesis and application of functionalized nanoporous materials in catalysis, adsorption, molecular separation and controlled release. He contributed substantially to the understanding of molecular mechanisms of formation of structured nanoparticles, zeolites, ordered mesoporous materials and porous materials in general. He performed experiments under microgravity in the International Space Station, and combined advanced physico-chemical techniques to reveal the supramolecular assembly mechanisms of inorganic structures on organic sacrificial templates. Professor Martens has never been constrained to a single area of research and has always been attracted by real-world problems, seeking collaboration with colleagues from other disciplines and especially physics and pharmaceutical and biomedical sciences to tackle scientific challenges of high societal relevance. Quite unique is that he has contributed to very fundamental studies as well as to the implementation of fundamental knowledge into practical solutions. In this sense he is a pioneer of translational research.

45 patent families were granted to Professor Martens. Several of these basic research inventions are being implemented in commercial applications or commercialized in spin-off companies founded by him. Johan Martens received several awards: the Exxon Chemical Biannual European Science and Engineering Biannual Award in 1995, the ESA Certificate of Merit in 2002, the "Enterprize 2005" – a contest for innovation and entrepreneurship in Belgium. 2009 he received the Methusalem funding – the highest level of structural funding in Flanders granted in regard to proven excellence. Since 2012 he is an active member of the Royal Flemish Academy of Belgium for Sciences and the Arts.

FEMS Materials Science and Technology Prize

MICHEL PEREZ

Michel Perez received his engineer degree and his master degree in Materials Science from the University Lyon / INSA Lyon. 2000 he received his PhD with honours at INP Grenoble with a thesis on contactless viscosity measurement by gas film levitation technique. In the next two years he was a post doc at INSA Lyon with the GEMPPM; at this time he got involved with modeling of precipitation phenomena. Dr. Perez was nominated 2001 assistant professor at INSA Lyon with the MATEIS group; 2007 he defended his habilitation thesis "Multi-scale approach of precipitation" and was nominated 2010 full professor at the same institute.

Precipitation phenomena in metallic systems are a central area of interest of Prof. Perez; he developed activities with ferrous systems (martensite tempering, precipitation of copper in steels and of carbonitrides in steels) and aluminium alloys. On the basis of these activities he is currently working in atomic scale techniques to model precipitation phenomena, coupling Molecular Dynamics and Kinetic Monte-Carlo tools. Further areas of interest of Prof. Perez are the mechanical properties of block copolymers and of entangled materials, building up from 3D tomography to discrete element methods.

Prof. Perez received 2012 the Jean Morlet Prize of the Societé Française de Métaux et Matériaux (SF2M).

FEMS Lecturer

KISLON VOÏTCHOVSKY

After receiving a Bachelor and a Master degree in Physics from the University of Lausanne (CH) – both with honor, Kislon Voïtchovsky obtained 2007 a DPhil in Biophysics from the University of Oxford (UK) with a thesis on the characterization of biomembranes by using AFM. Part of his thesis was done in collaboration with NTT basic research laboratory, Atsugi, and with the research group of Prof. Ando at Kanazawa University, both in Japan. He was granted the Arthur Cooke Prize of the University of Oxford Physics Department for his work. Dr. Voïtchovsky was 2008 –2010 as SNSF Post-doctoral Research Fellow at the MIT Massachusetts Institute of Technology (USA) where he worked on an experimental approach based on AFM to image and quantify solid-liquid interfaces with sub-nanometer resolution. He received 2009 the Nature Materials Award and 2011 the Ambizione Career Award of the Swiss National Science Foundation.

His research focused initially on the biomechanics and structure-function relationship of membrane protein studied with scanning probe microscopy. Given the importance of ionic effects on local hydration effects (interfacial effects with the surrounding liquid) he developed a strong interest in solid-liquid interfaces at the molecular level – he was awarded this FEMS prize with a lecture in this area.

FEMS Lecturer

VINCENZO PALERMO

Vincenzo Palermo received a Master degree with honor in Industrial Chemistry in 1995 at the University of Bologna (IT). After working as a guest scientist at the University of Utrecht (NL), at Steacie Institute of the National Research Council (CND) and the research division of Procter & Gamble in Rome (IT) he obtained 2003 his Ph.D. in physical chemistry at the University of Bologna (IT) in a joint project with the CNR Istituto dei Composti del Carbonio ICOCEA also in Bologna. Vincenzo Palermo won two graduate student awards at the E-MRS Conference 2003 and at the European Conference on Molecular Electronics 2005; he received in 2006 the Young Scientist Award in materials science of the Italian Society for Microscopical Sciences (S.I.S.M.).

The initial area of interest of Dr. Palermo laid on the atomic-scale characterization of surfaces for microelectronic applications; his current work covers the production and nanoscale characterization of new materials for optoelectronics, photovoltaic applications and organic semiconductors as well as the fabrication of new materials by self-assembly and supramolecular chemistry of nanosized building blocks. He received this FEMS award with a lecture about the supramolecular functionalization of graphene.

TMS - FEMS Young Leader International Scholar Program

AMY J. CLARKE

Amy Clarke received her Bachelor of Science degree in Metallurgical and Materials Engineering from Michigan Technological University (MTU) in Houghton (MI, USA) and her Master of Science degree in Metallurgical and Materials Engineering from the Colorado School of Mines (CSM) in Golden (CO, USA). She was a visiting researcher in 2004 at the Laboratory for Iron and Steelmaking with Professor De Cooman at Ghent University (BE) and in 2005 with Professor Rizzo at the Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio) in Brazil. She received her Ph.D. in Metallurgical and Materials Engineering from the Advanced Steel Processing and Products Research Center (ASPPRC) at the Colorado School of Mines (CSM) in Golden (CO, USA) in 2006 for her dissertation entitled “Carbon Partitioning into Austenite from Martensite in a Silicon-Containing High Strength Sheet Steel”. Dr. Clarke has been granted several honors and awards, including: the Willy Korf Award for Young Excellence (2007) for her Ph.D. research, a TMS Young Leader Professional Development Award (2008), a TMS/Japan Institute of Metals Young Leader International Scholar (2010) award, and a United States Department of Energy Office of Science Early Career Research Program Award and a Presidential Early Career Award for Scientists and Engineers (PECASE) in 2012. Dr. Clarke was a G.T. Seaborg Institute Postdoctoral Fellow (2006-2008) and a Postdoctoral Research Associate (2009-2010) with the Metallurgy Group of Los Alamos National Laboratory (LANL) in Los Alamos (New Mexico, USA) and a Senior Development/Research Engineer (2008-2009) in Advanced Materials Technology at Caterpillar Inc. in Mossville (IL, USA). Since 2010, Dr. Clarke has been a Research and Development Scientist in the Metallurgy Group at LANL.

The research experience of Dr. Clarke includes in-situ analyses of materials using x-rays, neutrons, and protons at National User Facilities; the study of liquid-solid and solid-state phase transformations; the evolution of microstructure and properties associated with processing variations; and microstructure characterization of uranium, steel, and aluminum alloys.

FEMS European Materials Medal

Multi-twinned nanoparticles, quasicrystals and twinned dendrites: What is the link?

Michel Rappaz
Institute of Materials
Ecole Polytechnique Fédérale de Lausanne. CH-1015 Lausanne, Switzerland

In the 1960's, it was shown that nanoparticles of metals can be multi-twinned: in order to minimize their surface energy, they are typically made of {111} tetrahedra arranged in a five-fold symmetry (e.g., icosahedron), but with some distortion (and elastic energy) involved to compensate for the closure default. In the 1980's, five-fold symmetry quasicrystals (QC) were discovered in Al-alloys: they inherit the local arrangement of atoms in the liquid already predicted by Frank in the 1950's, without exhibiting translation invariance. On the other hand, twinned dendrites have been observed in Al-alloys under certain solidification conditions for more than 60 years: they are made of 110 trunks split in their center by coherent {111} twin planes. While their growth mechanism is now better understood, nucleation of the twins still remains unclear. Very recently, we have shown that minute Cr additions (typically 0.1 wt%) to Al-Zn alloys solidified in a uniform temperature field spontaneously lead to the formation of fine equiaxed grains. Furthermore, these grains exhibit an unexpectedly large number of twin relationships and some of them are even in a five-fold symmetry twin relationship with a common {110} direction.

These results become fully consistent when one considers that the primary fcc phase forms on facets of QC's, or alternatively on nuclei of the parent stable phase having several five-fold symmetry building blocks in its unit cell. This nucleation mechanism is most probably responsible of twinned dendrite formation, but more important, it could be exploited as a new grain-refining technique in Al alloys and maybe in other fcc metals.

FEMS Materials Innovation Prize

Opportunities in Synthesis and Application of Nanoporous Materials

Johan A. Martens
Center for Surface Chemistry and Catalysis
KU Leuven, Belgium

Many applications take advantage of the large accessible pore volume, uniform pore size and pore walls with unique adsorptive and catalytic functions offered by nanoporous materials. Over 5 million tons of synthetic zeolites are yearly produced in industry for three main applications: detergents, molecular separation and catalysis. In the past two decades several new generations of nanoporous materials have been discovered holding great promise for many more applications, but industrial breakthrough of the new nanoporous materials often is hampered by high manufacturing cost and upscaling difficulties. In this lecture two new synthesis approaches are presented overcoming these difficulties.

We have developed a facile method of creating ordered mesoporous silica (OMS) materials with potential application in drug delivery and chemical sensing. OMS usually is synthesized either in strongly acidic or basic synthesis mixture under hydrothermal conditions maintained for hours. We discovered a synthesis protocol at neutral pH and ambient temperature using cheap reagents producing OMS within seconds. The synthesis can be carried out in a continuous process by combining a stream of sodium silicate with buffered P123 triblock copolymer solution in a receptacle. The obtained OMS platelets with short identical channels and thick pore walls are sufficiently robust for applications in drug delivery and chemical sensing. In a recent phase 1 clinical study the use of OMS carrier material for enhancing the bioavailability of fenofibrate, a drug to reduce cholesterol levels in patients at risk of cardiovascular disease, was demonstrated. In another application OMS film applied on silicon photonic micro-ring resonator enables selective and reversible ammonia gas detection at ppm concentration level.

A potentially attractive development is the use of relatively weak permanent magnetic fields to assist materials synthesis. Magnetic fields applied on circulating liquid mixtures previously have been demonstrated to assist formation of monodisperse emulsions, to facilitate nano-aggregate breakup, and to beneficial in Mo-V-Sb mixed oxide catalyst synthesis. Our latest discovery is that weak external magnetic fields facilitate formation of materials containing antiferromagnetically coupled paramagnetic ions. This magnetohydrodynamic effect is demonstrated for three different, technologically relevant materials: HKUST-1 type metal-organic framework encapsulating Cu1.5[PW12O40] polyoxometallate, manganese oxide nanotubes and mixed valence vanadium oxide gels, the precursor of vanadium oxide nano-scrolls used as cathode material in a rechargeable lithium battery. Although the detailed mechanism of the observed magnetic field effect is yet to be discovered, this simple, practical and versatile strategy could innovate crystallization of a wide variety of materials with technologic and economic relevance. Asides increasing efficiency of their synthesis, the magnetic field permanently and drastically improves magnetic order in the material. The systematic observations for different materials allow prediction which chemical systems can benefit from magnetically enhanced synthesis.

FEMS Materials Science and Technology

Multiscale approach to steel design

Michel Perez
MATEIS - UMR CNRS 5510
F-69621 Villeurbanne, France

We present here a multi-scale modelling approach to steel design: from ab-initio to Finite Element Methods. This approach will be illustrated on far-from-equilibrium phases, obtained after FeC coatings on a steel sheet. Ab initio techniques are used to construct an interatomic FeC potential for Molecular Dynamics simulations. Resulting potential energy landscapes serve as entry parameters for Atomic Kinetic Monte-Carlo, which, itself, predicts long-term microstructure evolution kinetics. Then, Mean Field precipitation and diffusion models provide solute content and phase fractions evolutions at different location of the component. Finally, this information is used to get the constitutive relation at each node of a Finite Element mechanical calculation. Modelling results are validated with various experimental techniques from the atomic scale (Tomographic Atom Probe) to the specimen scale (tensile tests).

FEMS Lecturer

Measuring wetting at the nanoscale

Kislon Voïtchovsky
The Supramolecular Nano-Materials and Interfaces Laboratory
SuNMIL, Ecole Polytechnique Fédérale de Lausanne – EPFL, Lausanne

Solid-liquid interfaces (SLIs) occupy a central role in many phenomena ranging from surface electrochemistry to heterogeneous catalysis, heat transfer, proteins folding and function, ionic effects and molecular self-assembly. All these processes crucially depend on the particular structural arrangement of the liquid molecules close to the solid. This so-called interfacial liquid tends to be more ordered and dense than bulk liquid due to its interaction with the solid's surface. At the macroscopic level, these interactions are usually characterized by the work of adhesion WSL, effectively the work necessary to separate the solid from the liquid. The wetting of the solid by the liquid is quantified by WSL, with high values indicating good wetting.

Experimentally, SLIs are typically investigated through diffraction techniques and WSL quantified with contact angle measurements. These techniques generally require averaging over large areas, hence rendering measurements particularly challenging for irregular SLIs, for example if the solid exhibits nanoscale domains with different affinities for the surrounding liquid.

These difficulties can be overcome using an approach based on amplitude-modulation atomic force microscopy (AM-AFM). When operated in a particular regime, AM-AFM can be used to gain semi-quantitative information about the local WSL with sub-nanometer resolution. The approach effectively provides simultaneous maps of the interface topography and of the local wetting properties, often with atomic- or molecular-level resolution of the solid. The method has been successfully applied to study interfaces formed by liquids with minerals, biological membranes as well as synthetic nanostructures. The results show that molecular-level structural effects within the SLI can lead to unexpected macroscopic changes in the interface properties. This is the case for nano-patterned surfaces where nanoscale domains exhibiting dissimilar affinities for the liquid can to tune the surface wetting properties solely through the particular spatial organization of the different domains.

FEMS Lecturer

Not a molecule, not a polymer, not a substrate... The many faces of graphene as chemical platform

Vincenzo Palermo
Nanochemistry Laboratory, CNR-Institute for Organic Synthesis and Photoreactivity
ISOF, Bologna, Italy

What is, exactly, graphene?

While we often describe graphene with many superlative adjectives, it is difficult to force this (superlative) material within a single chemical class.

Graphene typical size is atomistic in one dimension of space, and mesoscopic in the others two. This provides graphene with several, somehow contrasting properties.

Graphene can be can be patterned, etched and coated as a substrate. Though, it can also be processed in solution and chemically functionalized, as a molecule. It could be considered a polymer, obtained by bottom-up assembly of carbon atoms, but it can be obtained from top-down exfoliation of graphite (a mineral) as well. It is not a nano-object, as fullerenes or nanotubes, because it does not have a well-defined shape; conversely, it is a large, highly anisotropic, very flexible object, which can have different shapes and be folded, rolled or bent to high extents.

In this presentation, we will discuss the state of the art and possible applications of graphene in its broader sense with a particular focus on how its "chemical" properties, rather than its well-known electrical ones, can be exploited to develop original science, innovative materials and new technological applications.

TMS - FEMS Lecturer

Direct Interrogation of Metallic Alloys during Melting and Solidification

Amy J. Clarke
Materials Science and Technology – Metallurgy Group
Los Alamos National Laboratory, New Mexico, USA

A solidification microstructure is the product of the processing path used to create it. Understanding this linkage is vital for structural materials because the solidification microstructure profoundly affects properties and performance. Destructive, post-mortem microstructure analysis can provide insight into what occurred at elevated temperatures, but in-situ observations during processing provide direct evidence as to how the microstructure evolves. Transparent organic analogs have been used to simulate solidification in metallic alloys in order to test aspects of solidification theory, but in-situ characterization techniques now afford direct interrogation of metallic alloys during synthesis and processing. In this work, synchrotron x-ray radiography/tomography and proton microscopy (first experiments) were used to directly interrogate small and large volumes, respectively, of metallic alloys during melting and solidification. These capabilities will permit the advancement of solidification theory, the development of predictive solidification and microstructure evolution models, and in-process adjustments through feedback systems to dynamically control microstructure evolution.

General Information

GENERAL INFORMATION

Congress Centre

Barceló Renacimiento Hotel

Avda. Álvaro Alonso Barba, S/N

Isla de la Cartuja / 41092 Sevilla, España

Tel.: + 34 95 446 22 22 Ext 483

Fax: + 34 95 446 33 83

The Barceló Renacimiento hotel, entirely refurbished in 2012, is situated in Sevilla on the banks of the Guadalquivir River. The hotel was designed by Javier Carvajal Ferrer, one of the foremost Spanish architects of the 20th century, a standard bearer of modernism, and internationally consider a master. The Barceló Renacimiento hotel is considered by many as the Guggenheim of Sevilla for its singular design and architectural similarity to the museum in New York of the same name.

How to arrive

Taxi:

From downtown aprox. 10-15 €

Bus:

Lines C1 or C2 (stops in Cartuja, in front of Teatro Central). 1,40 €

Sevilla bus routes:

http://www.tussam.es

Tutorials "Short Courses"

Short Courses are organized:

On Sunday 8 September between 14:30 and 18:00.

A Short Course specific registration is open on Sunday from 11:00

Registration and Technical Secretariat

Sunday 8 September	11:00 to 18:00
Monday 9 September	8:00 to 13:00 15:00 to 19:30
Tuesday 10 September	8:00 to 13:00 15:00 to 19:30
Wednesday 11 September	8:00 to 13.00 15:00 to 19:30
Thursday 12 September	8:00 to 13:00 15:00 to 19:30
Friday 13 September	8:00 to 13:00

Exhibition Opening Time

The Exhibition is located at **Ground Floor around Sevilla Room**.

It will be open:

Monday 9 September	9:00 to 19:30
Tuesday 10 September	9:00 to 19:30
Wednesday 11 September	9:00 to 19:30
Thursday 12 September	9:00 to 19:30
Friday 13 September	9:00 to 15:00

Entry to the Exhibition is included in the delegate registration fee.

Name badges

All delegates and exhibitors must wear their name badges at any time.

Certificates

There will be a link in the EUROMAT 2013 web site.

To get your certificate of attendance through the link provided, you must enter the code you will find in your Congress Badge.

Once entered, you will be able to see all your personal data.

Check if all information is correct.

Print your certificate.

If there is something wrong, please contact the Technical Secretariat

Wi-Fi and Internet Access

The Barceló Renacimiento Hotel is equipped for free Wi-Fi access throughout the centre during the congress:

SSID: renacimiento

No password requiered

Catering

Coffee breaks are scheduled

Monday, Tuesday, Wednesday, Thursday and Friday	10:30 to 11:00
Monday, Tuesday, Wednesday and Thursday	17:00 to 17:30

Sandwiches Lunch for all delegates

Monday, Tuesday, Wednesday, Thursday and Friday	13:00 to 15:00

Social Events

Welcome Reception at the Universidad de Sevilla

Sunday 8 September 20:00
Rectorado
Calle San Fernando nº 4

Included in the registration fee

Do not forget to bring your Welcome Reception ticket, it will be required at the entrance

Located next door to Hotel Alfonso XIII and the Puerta Jerez, the Real Fabrica de Tabacos is now the main building for the University of Sevilla. Built over 50 years in the 18th century, the original purpose was the production of tobacco products from the New World, and was made famous by the Bizet's opera Carmen. At one time this was the largest industrial building in all of Europe, complete with moats, a chapel, jailhouse and several courtyards and fountains.

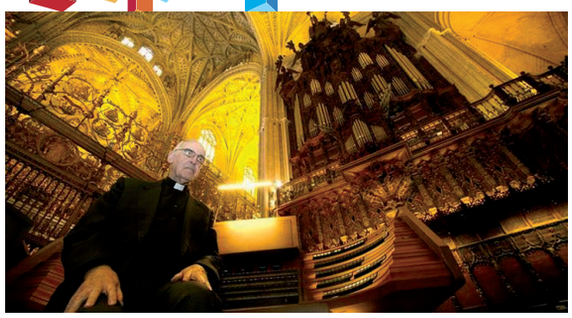
Organ Concert by Father Ayarra

Wednesday 11 September 21:00
Puerta de San Miguel, Catedral de Sevilla.
Avenida de la Constitución

Included in the registration fee
Buses will leave the hotel main entrance at 19.30
Please do not wear shorts

Do not forget to bring your Organ Concert ticket, it will be required at the entrance

Canon and tenured Organist of the Cathedral of Sevilla and of the monumental Grenzing organ at the Focus-Abengoa Foundation's Hospital de los Venerables; Professor of Organ at the Higher Conservatory of Sevilla; full academic member of the Saint Isabel of Hungary Royal Academy; President of the National Association of the Spanish Organ; two-time winner of the First Prize in Music Research awarded by the Regional Government of Andalusia (1989 and 1993); and "Andalucía" Music Award from the Regional



As a concert organist, he has given recitals in the Cathedrals of Notre-Dame of Paris, St Paul's in London, St Stephen's in Vienna, St Gudula's in Brussels, Chartres, Dijon, Cologne, Aachen, Edinburgh, Mexico, Morelia, Baltimore, Chicago, New Orleans, Tokyo, Hiroshima, Nagasaki and the majority of Cathedrals in Spain.

Programme:
Präludium und Fuge d-moll / D.BUXTEHUDE (1637-1707)
Siciliana (de la Suite nº 2 para clave) / J.S.BACH (1685-1750)
Gavota (del Concierto nº 3 para órgano y orquesta) / G.F.HAENDEL (1685-1759)
Le cygne / C.SAINT-SÄENS (1835-1921)
Variaciones sobre un tema vasco / J.GURIDI (1880-1961)
Il silenzio / R.C.BREZZA (S. XX)
Sortie en MI b Mayor / L.LÉFÉBURE (1817-1870)

Gala Dinner at Pabellón de la Navegación

Thursday 12 September 21:00
Camino de los descubrimientos nº 2
Price per person: 65 €
Buses will leave the hotel main entrance at 20.30

Do not forget to bring your Gala Dinner ticket, it will be required at the entrance

The Navigation Pavilion is located on the Isla de la Cartuja on the banks of the Guadalquivir river, in an exceptional enclave, whose proximity to the Cartuja Technology Park, the historic old city and the popular neighborhood of Triana. In the new trends in cultural management, self-managed centers, that perform events of cultural and social interest in their facilities, without breaking with its image, are increasingly valued. This activities serve to enrich and develop themselves as a cultural institution. Navigation Pavilion presents itself as a space formed by different areas integrated in the building such as: the permanent exhibition, temporary exhibition hall, library and viewing tower.

Speaker preview

All speakers having symposia in the following rooms:

Andalucia Room 1,2,3,4,5,6,7 and 8 (Ground Floor)
España Room 1,2,3,4 and 5 (Lower Floor)
Sevilla Room 1,2 and 3 (Ground Floor)

must load their presentation file (USB) in the **Speaker Room A** located at the Exhibition Area.

All speakers having symposia in the following rooms:

Cartuja Room (Ground Floor)
Giralda Room (Lower Floor)
Macarena Room (Ground Floor)
Alamillo Room (Lower Floor)
Niña Room (Ground Floor)
Pinta Room (Ground Floor)

must load their presentation file (USB) in the **Speaker Room B** located at Atrio 1.

Presentations must be loaded in the central computer system. There is no possibility to use personal laptops. Presentation uploading and revision should be done preferably on the half day before the start of the corresponding session. for Monday morning presentations, it is recommended to register and and upload presentations on Sunday.

All computers in all meeting rooms have the following software:
Windows 7
Microsoft Office 2010 (English version)

Green Policy

In maintaining a high standard of environmental awareness and compliance, Euromat 2013 follows a Green Policy.

Euromat 2013 is designated non-smoking.

To the best of our ability, recycled and recyclable food-and-beverage containers will be used.

Minimise paper use by storing information digitally rather than as paper files; Euromat 2013 has reduced the amount of printed material that is distributed at the Congress , but continues to print material considered essential for the effective organization or communication of the event – so for example the 2013 Congress still had a printed final program, but previously printed materials have been replaced by online systems and usb.

Publication

There will be no publication of a complete set of proceedings. A conference pen drive containing all abstracts, Euromat 2013 web site contents, a personal itinerary builder and an updated version of the delegates list, will be distributed to the delegates.

Transport

We minimise the impact of travel.
We encourage to travel to the congress venue by public transport, car-share, bicycle or by walking.
Wherever possible, public transport.

Energy

Turn off appliances when not in use.

Awards

Poster prizes will be sponsored by FEMS and WILEY. Details will be published on website prior and properly announced prior to the conference.

Side Events at a Glance

SIDE EVENTS AT A GLANCE

Sunday 8 September 2013

Congress registration and Short Courses registration
11:00 to 18:00

Tutorials "Short Courses"	
Andalucía 5 Room	14:30 to 18:00
Nanoscale characterization and processing of graphene and other monoatomic materials Proponent: Vincenzo Palermo and Eric Anglaret	
Andalucía 6 Room	14:30 to 18:00
Nanobiosensors based on Nanomaterials Proponent: Laura M. Lechuga and Arben Merkoci	
Andalucía 7 Room	14:30 to 18:00
3D analysis on the micro, nano and atomic scale Proponent: Didier Blavette, Rene de Kloe, Christian Kübel, Frank Mücklich and Alexander Rack	
Andalucía 8 Room	14:30 to 18:00
Fundamentals of Materials Science Materials Constitution Proponent: Günter Effenberg, Hans-Jürgen Seifert, Raimund Podloudsky	

Welcome reception	
Rectorado de la Universidad de Sevilla	20:00

Monday 9 September 2013

Congress registration and Technical Secretariat
8:00 to 13:00 and 15:00 to 19:30

Opening Ceremomy	
Sevilla Room	9:00

G1I: Education and Career	
Sevilla 3 Room	13:00 to 15:00

Tuesday 10 September 2013

Congress registration and Technical Secretariat	
8:00 to 13:00	15:00 to 19:30

G2: Technology Transfer	
Sevilla 3 Room	13:00 to 15:00

Poster Session 1	ATRIO 3
Poster session 1 will be held on Tuesday 10 September	
The session will take place between 13.00 and 15.00.	
Authors are asked to be present during their relevant poster session in order to present and discuss their work with delegates.	
Authors of poster session 1 will set up their posters on Monday 9 September after noon and they will remove their posters before Wednesday 11 September at noon.	
Authors should remain with their posters from 13.00 to 15.00	

Poster Session 1 will cover the following symposia:
A2I, A2II, A2III
B1I, B1II, B1III, B1IV, B2I, B3II, B3III, B4III
C1I, C1II, C2II, C3I, C4I, C4II
D1I, D1III, D1IV, D2I, D2II, D2IV, D3II, D3IV
E1III

Wednesday 11 September 2013

Congress registration and Technical Secretariat	
8:00 to 13:00	15:00 to 19:30

G3I: Strategic Materials for Europe I	
Sevilla 3 Room	13:00 to 15:00

Organ Concert at the Cathedral	21:00
Transfers from Barceló Hotel main entrance: 19.30	

Thursday 12 September 2013

Technical Secretariat
8:00 to 13:00 and 15:00 to 19:30

G3II: Strategic Materials for Europe II	
Sevilla 3 Room	From 13:00 to 15:00

Poster Session 2	ATRIO 3
Poster Session 2 will be held on Thursday 12 September	
The session will take place between 13.00 and 15.00	
Authors are asked to be present during their relevant poster session in order to present and discuss their work with delegates.	
Authors of poster session 2 will set up their posters on Wednesday 11 September afternoon and they will remove their posters before Friday 13 September at noon.	
Authors should remain with their posters from 13.00 to 15.00	

Poster Session 2 will cover the following symposia:
A1I, A1III, A3I, A3II, A4I, A4II, A4IV
B4I, B4II
C2I, C2III, C3II, C3III, C3IV, C4IV
D3I
E1II
F2I, F3I, F3IV, F4I, F1I, F1II, F2I, F3I
G1II

Gala Dinner at Pabellón de la Navegación	21:00
Not included in the registration fee. 65 € per person	
Transfers from Barceló Hotel main entrance : 20.30	

Friday 13 September 2013

Technical Secretariat
8:00 to 13:00

Closing Ceremony at Sevilla Room	13:00

Scientific Program

AREA A FUNCTIONAL MATERIALS


Paloma Fernández


Paula M. Vilarinho

A1
Materials for Information Technology

Michele Muccini
Univ. of Bologna
Bologna, Italy

A1I
Ultrafast Laser Processing and Functionalization of Materials for Technological Applications


Javier Solis
Inst. Optica - CSIC
Madrid, Spain


Razvan Stojan
Univ. Jean Monnet
St. Etienne, France


Jan Siegel
Inst. Optica - CSIC
Madrid, Spain

A1III
Materials and Devices for Sensing


Giorgio Sverbeglieri
Univ. of Brescia
Brescia, Italy


Luisa Torsi
Univ. of Bari
Bari, Italy

A2
Magnetic and Multiferroic Materials

Manuel Vázquez
ICMM
Madrid, Spain

A2I
Domain Structure and Magnetization Processes in Magnetic Nanoscale Systems


Agustina Asenjo
ICMM – CSIC
Madrid, Spain


Volker Neu
Werkstoffforschung, IFW
Dresden, Germany

A2II
Interface Design


Ricardo Ibarra
UNIZAR
Zaragoza, Spain


Paulo Freitas
INL
Braga, Portugal

A2III
Multiferroic Single-Phase and Composite Materials for Novel Magnetoelectric Technologies


Catherine Elissade
ICMC CNRS
France


Miguel Algueró
ICMM - CSIC
Madrid, Spain

A3
Carbon Based Materials

Eric Anglaret
Univ. of Montpellier
Montpellier, France

Marc Monthioux
CNRS
Toulouse, France

A3I
Carbon-containing Composites and Materials


Juan Jose Vilatela
IMDEA Materiales
Madrid, Spain


Marc Monthioux

A3II
Carbon Nanotubes and Graphene


Vincenzo Palermo
ISOF CNR
Bologna, Italy

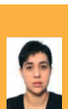

Eric Anglaret
Univ. of Montpellier
Montpellier, France

A4
Functional Nanostructures and Self Assembled Materials

Urszula Narkiewicz
West Pomeranian Univ.
Sczcecin, Poland

A4I
Semiconductor Nanowires: Synthesis, Characterisation and Applications


Javier Piqueras
Univ.Complutense
Madrid, Spain


Aleksandra Djurisic
Univ. of Hong Kong
Hong Kong, China

A4II
Nanopowders for Applications in Biology, Medicine, Photonics and Photovoltaics


Stuart J.C. Irvine
Univ. FWM
North Wales, UK


Marek Godlewski
Institute of Physics
Warsaw, Poland

A4IV
Laser Functional Nanostructures Oxides and Hydroxides


Jean Francois Hochepied
MINES-ENSTA
Paris, France


Stéphane Daniele
Inst. Rech. Catalyse et l'Environnement
de Lyon Villeurbanne, France

AREA B STRUCTURAL MATERIALS


Malgorzata Lewandowska


Jose Kenny

B1 Advanced Metals

Ralf Busch
Univ. Des Saarlanders
Saarbrücken, Germany

B1I
Nanostructured Steels


H.K.D.H. Bhadeshia
Univ. Of Cambridge
Cambridge, UK


Francisca Garcia Caballero
CENIM - CSIC
Madrid, Spain

B1II
Metallic Glasses and their Composites


Mihai Stoica
IFW
Dresden, Germany

B1III
Intermetallics


Srdjan Milenkovic
IMDEA Materiales
Madrid, Spain


David Morris
CENIM-CSIC
Madrid, Spain

B1IV
High Strength ODS steels: Fundamentals and Applications


Carlos Capdevila
CENIM - CSIC
Madrid, Spain


Marta Serrano
CIEMAT
Madrid, Spain


Mónica Campos
Univ. Carlos III
Madrid, Spain

B2 Advanced Ceramics

Dariusz Kata
Univ. of Krakow
Krakow, Poland

B2I
Advanced Ceramics


Jerzy Lis
Univ. of Krakow
Krakow, Poland


Thomas Graule
EMPA
Dübendorf, Swizerland

B3 Advanced Polymers

Jean-Francois Gerard
UMR CNRS
Lyon, France

Jose Kenny
Inst. Ciencia y Tecnología de Polímeros - CSIC
Madrid, Spain

B3I
Biobased Polymers, Composites and Nanomaterials


Lars Berglund
Royal Institute
Wallenberg, Sweden

B3II
Fire retardant Polymers, Composites and Nanocomposites


De-Yi Wang
IMDEA Materiales
Madrid, Spain

B3III
Hybrid Polymer Nanocomposites


Jean-Francois Gerard
UMR CNRS
Lyon, France

B4 Composite, Hybrid and Multi-scaled Structural Materials

Bill Clyne
Univ. of Cambridge
Cambridge, UK

B4I
Hybrid and Metal-Organic Framework Materials


Jin-Chong Tan
Univ. of Oxford
Oxford, UK


Bartolomeo Civalleri
University of Torino
Torino, Italy

B4II
Highly Porous Metals and Ceramics


Paolo Colombo
Univ. of Padova
Padova, Italy


Russell Goodall
Building
University of Sheffield
Sheffield

B4III
Composite Materials and Systems for High Temperature Use


Francis Delannay
Université Catholique de Louv
Louvain, Belgium


Bill Clyne
Univ. of Cambridge
Cambridge, UK

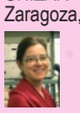
AREA C PROCESSING


Pedro D. Portella


Agustín R. González-Elipe

C1
Solidification and Solid State Transformations

Rosa I. Merino
UNIZAR
Zaragoza, Spain



Michel Rappaz
EPFL
Lausanne, Switzerland

C1I Solidification


Jean Marie Drezet
EPFL.
Laussane, Sitzerland


José I. Peña
UNIZAR
Zaragoza, Spain

C1II Solid State Transformation


Frédéric Danoix
Univ. of Rouen
Rouen, France


Benoît Appolaire
Lab. des Microstructures
ONERA-CNRS, France

C2
Joining and Interface Design

Jolanta Janczak-Rusch
EMPA
Dübendorf, Switzerland

C2I Wetting


Boris Straumal
ISSP
Chernogolovka, Russia


Alberto Passerone
CNR
Genova, Italy

C2II Interface Design


Lars P.H. Jeurgens
EMPA
Dübendorf, Switzerland


George Kaptay
Univ. of Miskolc
Miskolc, Hungary

C2III Joining Technologies


Ivan Kaban
IFW
Dresden, Germany

C3
Nano-Powder and Solution Routes: Synthesis to Materials

Maria Teresa Vieira
Univ. Coimbra
Coimbra, Portugal

José Manuel Torralba
IMDEA Materiales
Madrid, Spain

C3I Nano-Powder Development by Advanced Techniques


Bruno Trindade
Univ. of Coimbra
Coimbra, Portugal


Olivera Milosevic
Technical Institute
Serbia

C3II Advanced Processing Methods to maintain Nano-Features from the Powder


Alberto Molinari
Univ. of Trento
Trento, Italy


Thomas Schlothauer
TU Freiberg
Germany


Olivier Guillon
IFW
Jena, Germany

C3III Processing of Ceramics and their Mechanical Properties


Arturo Dominguez
Univ. of Sevilla
Sevilla, Spain

C3IV Additive Manufacturing and other Near Net Shape Techniques


Nahum Travitzky
Univ. of Erlanger
Germany

C4
Advanced Coating and Surface Structuring

Albano Cavaleiro
Univ. Coimbra
Coimbra, Portugal

Andrés Lasagni
IWS
Dresden, Germany

C4I Protective Coatings and Thin Films


Tomas Polcar
Univ. Southampton
Southampton, UK


Ben Beake
Micro Materials
UK

C4II Plasma Deposition of Thin Films and Coatings


Hynek Biedermann
Charles Univ.
Prague,
Czech Republic


Andrey Shukurov
Charles Univ.
Prague,
Czech Republic


Ondrej Kylian
Charles Univ.
Prague,
Czech Republic

C4IV Laser Micro-Nanoengineering


Andrés Lasagni
IWS
Dresden,
Germany


Udo Klotzbach
IWS
Dresden,
Germany


Jürgen Stampfl
Univ. of Vienna
Vienna, Austria

AREA D CHARACTERISATION AND MODELLING


Frank Mücklich


Dierk Raabe

D1
Physical, Chemical and Structural Characterisation

Beata Dubiel
Univ. of Krakow
Krakow, Poland

D1I Atom Probe Tomography


Didier Blavette
UMR CNRS
St. Etienne, France

D1III Tomographic and Radiographic Imaging with X-Rays and Neutrons


Alexander Rack
ESRF
Grenoble, France


Timm Weitkamp
Sinchrotron Soleil
Gif-sur-Ivette, Grance

D1IV Neutron and X-Ray Diffraction and Imaging for Materials Science and Engineering


Michael Fitzpatrick
Open University
Milton Keines, UK


Jon James
Open University
Milton Keines, UK

D1V Advanced Electron and Ion Microscopy Methods in Materials Characterization


Maria Sozanska
Silesian Univ. Of Technology
Katowice, Poland


Beata Dubiel
Univ. of Krakow
Krakow, Poland


Christian Kübel
INT Eggenstein-Leopoldshafen
Germany

D2
Mechanical Characterisation

Gerhard Dehm
MPI
Germany

D2I Mechanical Behavior of Advanced Materials


Jon Molina
IMDEA Materiales
Madrid, Spain


Ruth Schwaiger
KIT
Karlsruhe, Germany

D2II In-situ Micro- and Nano-Mechanical Characterisation


Marc Legros
CNRS-CEMES
Toulouse, France


Sandra Korte
Univ. of Erlanger
Erlanger, Germany

D2III Interface Failure in Thin Film Structure and Composite Materials


Megan Cordill
Univ. Leoben
Austria


James Dean
Cambridge University
Cambridge, UK

D2IV Characterization of the Mechanical Aspects of Corrosion and Environmental Degradation


Afrooz Barnoush
Norwegian Univ. of Science and Technology
Trondheim, Norway


Wolfgang Dietzel
Zentrum für Material- und Küstenforschung GmbH
Geesthacht, Germany

D3
Materials Modelling on all Length Scales

Risto Nieminen
Univ. Aalto
Aalto, Finland

Alfred Ludwig
Univ. Ruhr-Bochum
Germany

D3I Materials Discovery and High-Throughput Methods in Modelling and Experiments


Ralf Drautz
Univ. of Oxford
Oxford, UK


Nicola Marzari
EPFL
Lausanne, Switzerland


Jörg Neubauer
Max-Planck-Institut
Düsseldorf, Germany


Alfred Ludwig
Univ. Ruhr-Bochum
Germany

D3II Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior


Alexei Khokhlov
Lomonosov Moscow University
Moscow, Russia


Hans Jürgen Seifert
Karlsruhe Institut für Technologie
Germany


Igor Abrikosov
Univ. of Linköping
Linköping, Sweden

D3IV Materials Modeling for Energy Applications


Rajeev Ahuja
Univ. of Uppsala
Uppsala, Sweden

AREA E ENERGY AND ENVIRONMENT


Lorenz Singheiser

E1
Materials for Renewable Energy

Maria Luisa Di Vona
Univ. Tor-Vergata
Rome, Italy

E1II
Materials for Solar Energy Conversion


Susan Schorr
Helmoltz Centre
Berlin, Germany


Ivan Davoli
University Rome
Rome, Italy


Sergui Levcenco
Helmholtz Centrum
Berlin, Germany


Martin Schmücker
DLR
Köln-Porz, Germany

E1III
Materials for Fuel Cells


Maria Luisa Di Vona
Univ. Tor-Vergata
Rome, Italy

E2
Transportation and Mobility

Dirk Lehmhus
Univ. of Bremen, ISIS
Bremen, Germany

E2I
Lightweight Materials and Structural Solutions for Transport Applications


Kambis Kayvantash
KDLM
Massy, France


Axel von Hehl

E3
Energy Conversion and Transport

Peter Schaaf
IFW
Ilmenau. Germany

Per Eklund
Uni. Linköping
Linköping, Sweden

E3I
Materials for Power Plants: Energy Conversion and CO2 Capture


W.A. Meulenberg
Institute for Energy and Climate Research
Jülich, Germany


Christoph Leyens


Axel Kranzmann
BAM
Berlin, Germany

E3IV
Materials for Nuclear Applications


Nicolas Dacheux
Univ. Montpellier II
Montpellier, France


Philippe Raison

E4
Energy Harvesting and Storage

Claus Daniel
Oak Ridge Nat.
USA

E4I
Energy Harvesting and Storage


Claus Daniel
Oak Ridge Nat.
USA

AREA F BIOMATERIALS AND HEALTHCARE


Peter Fratzl

F1
Materials for Healthcare Applications

Peter Fratzl
Max-Planck Institute
Potsdam, Germany

Pedro Fávia

F1I
Micro -and Nano- Engineered Materials for Medical Application


Wojciech Swieszkowski
Univ. of Warsaw
Warsaw, Poland

F1II
Bio-Inspired Materials for Regenerative Medicine


Aldo Boccaccini
Univ. Erlangen Nuremberg
Germany


João Mano
Univ. of Minho
Portugal


Jürgen Groll
Univ. of Würzburg
Germany

F2
Bio-Inspired Materials

Thomas Scheibel
Univ. Bayreuth
Germany

F2I
Bio-Inspired Materials


Richard Weinkamer
MPI
Germany


Tobias Kraus
IMN
Saarbrücken
Germany


Mischa Zelzer
Eindhoven University of Technology
The Netherlands

F3
Bio-Sensing Materials and Devices

Laura Lechuga
CIN2
Barcelona, Spain

F3I
Bio-Sensing Materials and Devices


Arben Merkoçi
ICN
Barcelona, Spain


Peter Bienstman
Univ. of Ghent
Belgium


Laura Lechuga
CIN2
Barcelona, Spain

AREA G EDUCATION, STRATEGY AND TECHNOLOGY TRANSFER


Flavio Soldera

G1
Education and Career

G1I
Education and Career


Flavio Soldera
Univ. Des Saarlanders
Saarbrücken, Germany

G1II
Education in MSE: Interdisciplinary and International Aspects


Arlindo Silva
Univ. of Lisbon
Lisbon, Portugal


Flavio Soldera
Univ. Des Saarlanders
Saarbrücken, Germany


Mike Ashby
Univ. of Cambridge
Cambridge, UK

G2
Technology Transfer

G2I
The role of European Research and Technology Organizations in promoting the Technology Transfer of Materials Technology


Patrick Bressler
ESF
Strasbourg, France

G3
Strategic Materials for Europe

G3I
Materials in Functional and Structural Components


Ehrenfried Zschech
Fraunhofer Inst.for Nondestructive Testing
Dresden, Germany

G3II
Relevance of Resources Strategies and Global Competition


Margarethe Hofmann
MAT-SEARCH Consulting
Laussanne, Switzerland

Plenary Sessions

MONDAY 9 SEPTEMBER 2013

OPENING CEREMONY

MONDAY 9 SEPTEMBER 2013

Time	09.00 - 10.30
Room	Sevilla
Chairperson	Ehrenfried Zschech

FEMS European Materials Medal

Prof. Michel Rappaz

Institute of Materials
Ecole Polytechnique Fédérale de Lausanne.
CH-1015 Lausanne, Switzerland

Multi-twinned nanoparticles, quasicrystals and twinned dendrites: What is the link?

In the 1960's, it was shown that nanoparticles of metals can be multi-twinned: in order to minimize their surface energy, they are typically made of {111} tetrahedra arranged in a five-fold symmetry (e.g., icosahedron), but with some distortion (and elastic energy) involved to compensate for the closure default. In the 1980's, five-fold symmetry quasicrystals (QC) were discovered in Al-alloys: they inherit the local arrangement of atoms in the liquid already predicted by Frank in the 1950's, without exhibiting translation invariance. On the other hand, twinned dendrites have been observed in Al-alloys under certain solidification conditions for more than 60 years: they are made of {110} trunks split in their center by coherent {111} twin planes. While their growth mechanism is now better understood, nucleation of the twins still remains unclear. Very recently, we have shown that minute Cr additions (typically 0.1 wt%) to Al-Zn alloys solidified in a uniform temperature field spontaneously lead to the formation of fine equiaxed grains. Furthermore, these grains exhibit an unexpectedly large number of twin relationships and some of them are even in a five-fold symmetry twin relationship with a common {110} direction.

These results become fully consistent when one considers that the primary fcc phase forms on facets of QC's, or alternatively on nuclei of the parent stable phase having several five-fold symmetry building blocks in its unit cell. This nucleation mechanism is most probably responsible of twinned dendrite formation, but more important, it could be exploited as a new grain-refining technique in Al alloys and maybe in other fcc metals.

TUESDAY 10 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Frank Mücklich

Prof. Paul A. Midgley

Dept. of Materials Science and Metallurgy,
University of Cambridge
Cambridge, UK

Electron Tomography in Materials Science: 3D Imaging at the Nanoscale

Over the past 10 years or so, electron tomography in materials science has grown from a niche technique to a method used by many to routinely characterise 3D morphology at the nanoscale. Its origins lie in the life sciences where electron tomography was first developed to investigate the 3D ultrastructure of cells, viruses and bacteria. The need to study ever-more complex structures in materials science, especially at the nanoscale, led to the introduction first of STEM HAADF tomography (reducing often unwanted diffraction effects and improving atomic number contrast) and later, through the combination of tomography with other (S)TEM-based imaging and spectroscopy techniques, methods for 3D mapping of composition, dislocation networks and electromagnetic potentials.

More recently, there has been a growing desire not only for higher spatial resolution but also for improved quantification of tomograms, towards genuine 3D nano-metrology, which has led to novel reconstruction and segmentation algorithms yielding more reliable and robust 3D information. Advances in the efficiency and speed of detectors and spectrometers has opened up the possibility of more routine 'spectrum-tomography' in the (S)TEM where 4D data sets (with spatial and energy dimensions) contain a wealth of information not only about the morphology in 3D but also the composition and chemistry at the nanoscale.

This paper will reflect on the progress made to date, highlighting the key advances with illustrations from a broad spectrum of nanoscale materials science. I will also consider the likely challenges and opportunities that lie ahead, focussing on how recent technical developments, both hardware and software, should allow new insights into the understanding of materials at the nanoscale.

Acknowledgement: This research has received funding under the EU 7th Framework Programme Grant Agreement 312483 - ESTEEM2 (Integrated Infrastructure Initiative–I3) and from the European Research Council (FP/2007-2013)/ERC grant agreement 291522-3DIMAGE.

TUESDAY 10 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Frank Mücklich

Prof. Dr. Eduard Arzt

Scientific Director and Chairman (CEO),
INM - Leibniz Institute for New Materials

Professor for New Materials,
Saarland University
Campus D2 2, 66123 Saarbruecken, Germany

New functional surfaces: Exploiting size effects in science and application

New surfaces and coatings can drastically improve the properties and applicability of materials. At INM, we develop and investigate new surfaces for diverse functionalities: low friction, adhesion, corrosion protection, anti-reflection, electric storage and combinations of these.

Such surfaces either exhibit new chemistries or new topographies, *sometimes on different hierarchical levels. This talk will summarize some of our developments by bridging the scientific principles with existing or emerging applications. Almost invariably, when surface interactions are considered, size effects appear that govern the behavior and performance of the surface material. These fundamental effects can be exploited in practical applications, provided that appropriate synthesis, patterning and processing methods are available. One recent highlight is the bio-inspired exploitation of judiciously designed surface protrusions, "fibrils" and other features on the micron scale; this allows fundamentally new degrees of freedom for mechanical and other surface functions to be created. It will be emphasized how the coordinated contributions of physicists, chemists, materials scientist, biologists, biochemists and engineers are essential for innovation. Materials science of surfaces can thus help solve some of the burning questions* in our societies: from the longevity of structures in harsh environments, through the smart replacement of body parts and continued provision of energy supply to sustainable production of new materials through bio-inspired routes.

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WEDNESDAY 11 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Agustín R. González-Elipe

Prof. Claes- Göran Granqvist
Dept. of Engineering Sciences,
The Ångström Laboratory,
Uppsala University
Uppsala, Sweden

Green Nanotechnologies for Energy Efficient Buildings: New Technologies Give New Possibilities

About forty per cent of the World's primary energy is used for heating, cooling, lighting and ventilating buildings. New nanotechnologies are able to decrease the use of energy significantly at the same time as the comfort and amenities of the building are improved.

This talk surveys a number of options, mostly based on work in the speaker's laboratory. Foci lie on windows and glass facades with dynamic (electrochromic and thermochromic) properties, surfaces for solar absorption and hot water provision, and passive cooling by radiation towards the clear sky.

WEDNESDAY 11 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Ehrenfried Zschech

FEMS Materials Innovation Prize

Prof. Johan A. Martens
Center for Surface Chemistry and Catalysis
KU Leuven, Belgium

Opportunities in Synthesis and Application of Nanoporous Materials

Many applications take advantage of the large accessible pore volume, uniform pore size and pore walls with unique adsorptive and catalytic functions offered by nanoporous materials. Over 5 million tons of synthetic zeolites are yearly produced in industry for three main applications: detergents, molecular separation and catalysis. In the past two decades several new generations of nanoporous materials have been discovered holding great promise for many more applications, but industrial breakthrough of the new nanoporous materials often is hampered by high manufacturing cost and upscaling difficulties. In this lecture two new synthesis approaches are presented overcoming these difficulties.

We have developed a facile method of creating ordered mesoporous silica (OMS) materials with potential application in drug delivery and chemical sensing. OMS usually is synthesized either in strongly acidic or basic synthesis mixture under hydrothermal conditions maintained for hours. We discovered a synthesis protocol at neutral pH and ambient temperature using cheap reagents producing OMS within seconds. The synthesis can be carried out in a continuous process by combining a stream of sodium silicate with buffered P123 triblock copolymer solution in a receptacle. The obtained OMS platelets with short identical channels and thick pore walls are sufficiently robust for applications in drug delivery and chemical sensing. In a recent phase 1 clinical study the use of OMS carrier material for enhancing the bioavailability of fenofibrate, a drug to reduce cholesterol levels in patients at risk of cardiovascular disease, was demonstrated. In another application OMS film applied on silicon photonic micro-ring resonator enables selective and reversible ammonia gas detection at ppm concentration level.

A potentially attractive development is the use of relatively weak permanent magnetic fields to assist materials synthesis. Magnetic fields applied on circulating liquid mixtures previously have been demonstrated to assist formation of monodisperse emulsions, to facilitate nano-aggregate breakup, and to beneficial in Mo-V-Sb mixed oxide catalyst synthesis. Our latest discovery is that weak external magnetic fields facilitate formation of materials containing antiferromagnetically coupled paramagnetic ions. This magnetohydrodynamic effect is demonstrated for three different, technologically relevant materials: HKUST-1 type metal-organic framework encapsulating Cu1.5[PW12O40] polyoxometallate, manganese oxide nanotubes and mixed valence vanadium oxide gels, the precursor of vanadium oxide nano-scrolls used as cathode material in a rechargeable lithium battery. Although the detailed mechanism of the observed magnetic field effect is yet to be discovered, this simple, practical and versatile strategy could innovate crystallization of a wide variety of materials with technologic and economic relevance. Asides increasing efficiency of their synthesis, the magnetic field permanently and drastically improves magnetic order in the material. The systematic observations for different materials allow prediction which chemical systems can benefit from magnetically enhanced synthesis.

THURSDAY 11 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Paloma Fernández

Prof. Zhong Lin Wang

School of Materials Science and Engineering, Georgia Institute of Technology. Atlanta USA

Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences. Beijing, China

Nanogenerators as new energy technology and piezotronics for functional systems

Developing wireless nanodevices and nanosystems is of critical importance for sensing, medical science, environmental/infrastructure monitoring, defense technology and even personal electronics. It is highly desirable for wireless devices to be self-powered without using battery. Nanogenerators (NGs) have been developed based on piezoelectric, trioboelectric and pyroelectric effect, aiming at building self-sufficient power sources for mico/nano-systems. The output of the nanogenerators now is high enough to drive a wireless sensor system and charge a battery for a cell phone, and they are becoming a vital technology for sustainable, independent and maintenance free operation of micro/nano-systems and mobile/portable electronics. This talk will focus on the fundamentals and novel applications of NGs.

For Wurtzite and zinc blend structures that have non-central symmetry, such as ZnO, GaN and InN, a piezoelectric potential (piezopotential) is created in the crystal by applying a strain. Such piezopotential can serve as a "gate" voltage that can effectively tune/control the charge transport across an interface/junction; electronics fabricated based on such a mechanism is coined as piezotronics, with applications in force/pressure triggered/controlled electronic devices, sensors, logic units and memory. By using the piezotronic effect, we show that the optoelectronc devices fabricated using wurtzite materials can have superior performance as solar cell, photon detector and light emitting diode. Piezotronics is likely to serve as a "mechanosensation" for directly interfacing biomechanical action with silicon based technology and active flexible electronics. This lecture will focus on the fundamental science and novel applications of piezotronics in sensors, touch pad technology, functional devices and energy science.

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THURSDAY 11 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Paloma Fernández

Prof. Luigi Nicolais

University of Naples Naples, Italy

New Challenges in Composite Materials Research: from the Micro to the Nano Scale

Composite materials possess unique mechanical and physical properties, such as lightness, specific strength and excellent fatigue resistance. This makes them ideal candidates for a broad spectrum of industrial applications, ranging from aerospatial industry, automotive and biomedical field. The use of composite materials has enormously increased during the last decades. In particular, the concept of "composite" itself has changed, evolving from simple fillers to substitutes of selected structural parts. Nowadays, composites are deeply integrated in the design and production process of state-of-art airplanes and vehicles. This profound evolution stemmed from the great advancements that have been achieved in material science and production engineering. Engineers do not connect elements to create structures that fulfill a specific performance anymore, they rather design "the material" in which structure functions and composition are blended together.

In this lecture, different aspects of composite materials design and process will be presented. Application of diverse classes of composites in several industrial fields will be illustrated in details, along with their physical/chemical characteristics and macroscopic performances. Finally, novel classes of functional material for biomedical applications will be illustrated, paying attention to the design of bioactive scaffold for the emerging field of tissue engineering.

FRIDAY 13 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Pedro D. Portella

Prof. Joanna Aizenberg

Harvard School of Engineering and Applied Sciences
Harvard, USA

Everything Slips: Design of Novel Omniphobic Materials

Creating a robust synthetic material that repels various liquids solids would have broad technological implications for areas ranging from biomedical devices to fuel transport to architecture but has proven to be extremely challenging. Inspirations from natural nonwetting structures, particularly the lotus, surged the development of liquid-repellent microtextured surfaces that rely on the formation of a stable air-liquid interface. Despite over a decade of intense research, these surfaces are, however, still plagued with problems that restrict their practical applications: they show limited oleophobicity with high contact angle hysteresis; fail under pressure and upon any physical damage; cannot self-heal, and are expensive to produce. To address these challenges, we introduced a new strategy to create self-healing, Slippery Lubricant-Infused Porous Surfaces (SLIPS) with exceptional antifouling properties and enhanced optical transparency. The approach to SLIPS - inspired by Nepenthes pitcher plants - is fundamentally different from the lotus effect in that we use nano/microstructured substrates infused with a lubricating fluid. This surface outperforms its natural counterparts and state-of-the-art synthetic surfaces in its capability to resist ice and microbial adhesion; repel various simple and complex liquids; restore liquid-repellency after physical damage; and function at high pressures and temperatures.

We anticipate that the slippery surfaces can find important applications in fluid handling and transportation, optical sensing, medicine, and as self-cleaning and anti-fouling surfaces operating in extreme environments.

FRIDAY 13 SEPTEMBER 2013	
Time	09.00 - 10.30
Room	Sevilla
Chairperson	Paloma Fernández

FEMS Materials Science and Technology Prize

Prof. Michel Perez

MATEIS - UMR CNRS
Villeurbanne, France

Multiscale approach to steel design

We present here a multi-scale modelling approach to steel design: from ab initio to Finite Element Methods. This approach will be illustrated on far-from-equilibrium phases, obtained after FeC coatings on a steel sheet. Ab initio techniques are used to construct an interatomic FeC potential for Molecular Dynamics simulations. Resulting potential energy landscapes serve as entry parameters for Atomic Kinetic Monte-Carlo, which, itself, predicts long-term microstructure evolution kinetics. Then, Mean Field precipitation and diffusion models provide solute content and phase fractions evolutions at different location of the component.

Finally, this information is used to get the constitutive relation at each node of a Finite Element mechanical calculation. Modelling results are validated with various experimental techniques from the atomic scale (Tomographic Atom Probe) to the specimen scale (tensile tests).

Area G
Side Events

SIDE EVENT G1I: EDUCATION AND CAREER

Monday 9 September 2013
Room: Sevilla 3
Chair: Flavio Soldera, EUSMAT - Saarland University, Saarbrücken, Germany

Vito Borrelli

Head of Sector for the Jean Monnet Programme
European Commission Directorate General for Education and Culture (EAC), Brussels, Belgium

After over two years as Head of Section for the Erasmus Mundus programme, since early 2013 Vito Borrelli is Head of Sector for the Jean Monnet programme in DG Education and Culture (EAC). More specifically, he is in charge of the design, implementation and follow-up of the programme. He is presently involved in the preparation of the next generation of EAC programmes post-2014.

He is also China Desk in EAC, responsible for the coordination of the recently launched EU-China High Level People-to-People Dialogue (HPPD). He maintains close relations with the EEAS and DEVCO (notably as concerns higher education matters and China-related issues) and is involved in management of studies and surveys. He is very often called to represent the Commission vis-à-vis authorities and institutions in EU and non-EU countries.

Vito has many years of experience at the European Commission, where he has worked since 1994. Before taking up his current responsibilities, he was involved in information and communication activities and the management of the Leonardo da Vinci programme.

Vito has studied Humanities (English/Russian Languages and Literatures) and began his career as a teacher and a translator.

13:30 – 14:15

Title: The future of Education Strategy in the European Union: Erasmus for All

The education strategy of the European Union for the coming years will strongly be reflected in the program “Erasmus for All”. Erasmus for All is the new program proposed by the European Commission for education, training, youth and sport. It would start in 2014 and would significantly increase the funds allocated for the development of knowledge and skills. It would replace seven existing programs with one: it brings together the existing Lifelong Learning Program, Youth in Action, and five international cooperation programs. The proposal is now under discussion by the Council and the European Parliament who will take the final decision. This lecture will give an updated information on discussion results as well as on the final adoption of the program.

Uwe Haug

Managing Director „Steinbeis Forschungs- und Innovationszentren GmbH“ and Director International, Board Area, Headquarters, Steinbeis Foundation, Stuttgart, Germany.

Uwe Haug, Dipl.-Ing.(FH) (*1964, married, 3 children, German) holds a Dipl.-Ing.(FH)-degree in engineering from Reutlingen University. During his studies he spent one practical semester at Flender Corporation, Elgin (Chicago), USA.

For three years he worked as an industrial researcher in corporate development at the Fraunhofer-Institute for Manufacturing Engineering and Automation (IPA, Stuttgart) and subsequently in the SME industry (Walter AG, Tübingen) as a project manager in corporate development.

Since 1992 he has been working at the Steinbeis-HQ. Presently he holds the position as Managing Director Research and Development (Steinbeis Forschungs- und Innovationszentren GmbH, Steinbeis Innovation gGmbH + several start-up R&D-companies) and Director International.

14:15 – 15:00

Transfer Entrepreneurship and Competence-Development – The Steinbeis Approach

Steinbeis is an international service provider in entrepreneurial knowledge and technology transfer. The Steinbeis Transfer Network is made up of more than 900 Steinbeis Enterprises and comprises around 6,000 experts. At the core of the Steinbeis system are decentralized Transfer Centers, now called SEs. The underlying philosophy is the so- called “transfer entrepreneurship”. Founded in 1998, the Steinbeis University Berlin (SHB) is a state-approved private university that offers extra-occupational higher education based on the project competence concept. The SHB offers certification courses, degrees and doctoral programs. Today more than 6.000 employed people study at the SHB.

SIDE EVENT G2: THE ROLE OF EUROPEAN RESEARCH AND TECHNOLOGY ORGANISATIONS IN PROMOTING THE TECHNOLOGY TRANSFER OF MATERIALS TECHNOLOGY

Tuesday 10 September 2013
Room: Sevilla 3
Chair: Patrick Bressler, Fraunhofer Brüssel, Brussels, Belgium

Prof. Dr. Armin Reller

Head of Fraunhofer Project Group Materials Recycling and Resource Strategy, University of Augsburg and Fraunhofer Institut für Silicatforschung, Würzburg, Germany

Armin Reller studied Chemistry at the University of Zurich, held a chair at University of Hamburg (1988-1992) and was chair of solid state chemistry at the University of Augsburg and then was chair of Resources Strategy at the same university in 2009. Prof. Reller is Spokesman of the Center of Competence for the Environment.

13:30 – 13:50

Title: New strategies for materials management and end-of-use design of materials

Currently the technical development is characterized by the implementation of an enormous and steadily increasing number of functional materials. Be it in microelectronics, in automotive industry or in polymer and composite materials industry, the diversity of reliably interacting functional compounds and elements is stupefying. This trend is also evident by the use of many functionalized metals in elemental form, in alloys or in ceramics. Many of these materials are only applied in minute amounts, but nevertheless, they are indispensable and often not substitutable. All in all these recent trends increase the problem of efficient re-manufacturing, re-processing and re-cycling strategies and technologies. In this contribution improved logistics and design concepts for recovering essential materials - in particular strategic metals - efficiently, selectively and economically. Accordingly the use of primary and secondary resources can be optimized, while the dissipative losses are minimized. Case studies documenting the industrial practice are presented.

Constantin Vahlas

CNRS and Interuniversity Materials Engineering Center (CIRIMAT), Toulouse Materials Science and Engineering Expert Committee, European Science Foundation, Strasbourg

Constantin Vahlas is research director at the French National Center for Scientific Research (CNRS). He heads the Surface Reactivity and Functionalization group (25 members) at the Inter-University Materials Engineering Center (CIRIMAT) in Toulouse. Over the past twenty eight years, his research interests have revolved around gas–solid interactions and chemical vapor deposition. His actual research is focused on metalorganic CVD of architectured, (multi-)functional metallic and oxide films and particles on flat and complex surfaces and on powders for applications in space, pharmaceutics or sensors.

Constantin Vahlas received a Chemical Engineering degree from the National Technical University of Athens, and a Doctorate in Metallurgy from the National Polytechnic Institute of Grenoble. He has held visiting fellowships at the Oak Ridge National Laboratory and at the Universities of Pau and of Delaware. He was director of an Integrated Laboratory on Advanced Coating Technologies in the frame of a European Network of Excellence (2006-2010), of an integrated CNRS unit on functionalization of complex in shape surfaces by gas phase processes (2008-2011), and of the Materials Science interdisciplinary program of CNRS (2009-2012). He is actually member of the Materials Science Expert Committee of the European Science Foundation. He is member of the Editorial Advisory Board of Ceramics International and is the guest editor of two special issues of the journal Chemical Vapor Deposition focused on CVD on powders and on complex surfaces. He has coauthored more than 180 publications in international journals and conference proceedings among which nine review articles, editorials and science position papers, published five book chapters and holds five patents.

13:50 – 14:10

Title: Challenges, Obstacles and Opportunities: Materials Science and Engineering in Europe

In the frame of the Materials Science and Engineering Expert Committee mandated by the European Science Foundation, a prospective on future materials has recently been finalized. This prospective complements the recently published EC report on “Materials for Key Enabling Technologies”. It is based on representative case studies in the field of metals, ceramics, functional materials and biomaterials. In an orthogonal approach, it presents the expected impact of these case studies on the Grand Challenges Energy, Mobility & Transport, Environment & Climate, Information & Communication, and Health. This prospective will be presented and recommendations will be provided for an efficient use of nanotechnology, analytical tools, combinatorial materials science, modeling, synthesis and processing, surface science, multifunctionality, recycling, interdisciplinarity and education.

esa

Prof. David Jarvis

European Space Agency

Professor David Jarvis is Head of the New Materials & Energy Research Unit at the European Space Agency (ESA), and is responsible for € 125 million of R&D activity and a team of 12 managers and research fellows. Professor Jarvis has 12 years' experience conceiving, assembling and managing large-scale, multi-disciplinary, international consortia of academic and industrial scientists in the fields of materials and energy research. This entails the co-development of strategic technologies, with universities and companies in many different sectors such as space, aeronautics, automotive, power generation, chemical, security and nuclear fusion. In this time, an extensive international network of top scientists from academia, industry, governmental and intergovernmental R&D centres has been developed and mobilised, mainly within EC R&D Programmes. Prof Jarvis holds a BEng and PhD from Swansea University, UK. He has published about 25 scientific papers and made numerous patent applications in materials and manufacturing. In 2012, Professor Jarvis was elected as a foreign member of the Royal Swedish Academy of Engineering Sciences.

14:10 – 14:30

Title: Metallurgy Europe - innovating the industrial-academic partnership

Metallurgy Europe is a new billion-Euro initiative that has been put forward by the Materials Science & Engineering Expert Committee (MatSEEC-ESF) in 2012. It is a vision for a renaissance programme in metallurgy and related manufacturing technologies, that will add huge value to the European economy over the next decade. Metallurgy Europe will lay the technical foundation for a new generation of alloys, compounds and composites, and will transform the way we deploy metallic products in applications. This will help us aim for the future and tackle some of the societal challenges related to renewable energy, nuclear fusion, green mobility, climate change reduction, space, security and healthcare. This presentation will provide a short overview of Metallurgy Europe and the latest developments within the context of Horizon2020, national funding and European industry.

14:30 – 15:00

Panel Discussion

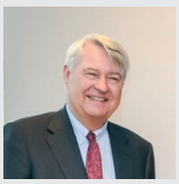
SIDE EVENT G3I:

MATERIALS IN FUNCTIONAL AND STRUCTURAL COMPONENTS

Wednesday 11 September 2013

Room: Sevilla 3

Chair: Ehrenfried Zschech, Fraunhofer IZfP, Dresden, Germany



Herbert von Bose

Director, "Industrial Technologies", DG Research & Innovation, European Commission

Mr von Bose completed his studies in law from the Universities of Bonn, Geneva and Heidelberg in 1975. He was an assistant at the law faculty of the University of Montpellier before joining the German Ministry of Justice in 1976. From 1979 to 1983, he practices as a lawyer in Manheim and Heidelberg. In 1983, he started working for the European Commission in Brussels. In 1996, Mr von Bose became the Head of Unit for Aeronautics, Space, Rail and Maritime. From 2004 to 2007, he was the Head of Unit for "Security Research and Development". In September 2007, he became Director for "Industrial Technologies" in DG Research & Innovation.

13:30 – 14:00

Title: Horizon 2020: Materials, a key driver for innovation

Some 70% of all technical innovations hinge directly or indirectly on the properties of the materials they use. Materials have been identified as one of the Key Enabling Technologies (KETs), and will certainly have a place and role in the upcoming framework programme for funding research and innovation, Horizon 2020. A significant part of future goods and services is as yet unknown, but the main driving force behind their development will be the KETs: mastering these technologies means being at the forefront of managing the shift to a low carbon, knowledge-based, competitive and sustainable economy. In addition, there are also important challenges to overcome in securing access to raw materials, also through improving the recycling and recovery of materials from waste.

Tommaso Ghidini

Head of the Materials Technology Section

European Space Agency - ESA/ESTEC, Noordwijk, The Netherlands

Tommaso Ghidini obtained his M. Sc. in Engineering Mechanics from the University of Parma.

After a Ph. D. in Fracture Mechanics (with particular focus on advanced joining technologies) at the Institute of Materials Research of the German Aerospace Centre, the DLR, Dr. Ghidini joined AIRBUS in the Fatigue and Damage Tolerance Department working on the A380 as well as A400M civil and military aircraft Programme.

He joined the European Space Agency (ESA) in 2007 as Fracture Mechanics and Stress-Corrosion expert and then became the VEGA Launcher Product Assurance Engineer: VEGA is the most recent Launcher in the ESA family which was successfully launched in February 2012 and which performed his second successful launch in May 2013.

Since January 2012 Dr. Tommaso Ghidini is the Head of the Materials Technology Section at the European Space Agency. The Materials Technology Section is in charge of all Metallic Materials and related Manufacturing and Surface Treatment Processes for all ESA spacecraft and launchers Programme.

14:00 – 14:20

Title: An European Space Agency Perspective on Advanced Materials, Coatings and Manufacturing Processes

The majority of the materials used in spacecraft structure and mechanical devices, propulsion systems and launchers manufacture are normally selected from known and well proven aircraft applications. However, the advancement in space technology has been made possible by many specific breakthroughs in materials, coating systems and manufacturing processes, facilitating the development of highly sophisticated spacecraft, launch vehicles and components. In the present paper a detail review of current research and development programme performed at the European Space Agency (ESA) in the field of metallic as well as non-metallic materials, coating systems and manufacturing technologies is presented. It covers applications ranging from large launchers primary structures and solid/liquid propulsions systems, satellites propulsion units, solar cells, as well as materials for electronic applications, including examples from inner planetary missions with extreme environmental conditions (temperature and radiation).

PTFE as well as Metal Matrix Composites, thermoplastics, aerogels, crushable materials, advanced structural ceramics and glasses as well as SiC reinforced Titanium alloys are presented. Moreover an overview on black/white coatings for heat shielding applications used on near-Sun missions, on aqueous coating systems reducing the volatile organic compound and the hazardous potential as well as on biodegradable materials is also given.

Advanced manufacturing processes, such as Additive Layer Manufacturing (ALM), Friction Stir Welding (FSW), composites bonding/joining techniques as well as innovative composites manufacturing processes are described. Particularly, the use of game changing technologies such as ALM, is extensively exploited on conventional and non-conventional metals, polymers, ceramics and geopolymers (lunar regolith), ranging from few grams up to few tons of material.

Finally, restrictions imposed by environmental regulations in Europe have significant implications for space programmes, the most immediate one being the possible disruption of qualified materials and processes. In order to satisfy stringent environmental International Regulation, ESA has taken the lead in exploring and qualifying for space use Chromate 6 free corrosion protection coatings as well as lead free electronic assemblies materials.

Tim Warner

Director of Aerospace R&D at Constellium's research center, Paris, France

Constellium CRV, 725, Rue A. Berges , CS 10027, 38341 Voreppe, France

Timothy.warner@constellium.com

Dr. Warner is currently R&D group manager for aerospace and metallurgy at Constellium CRV, France. He has worked for 23 years in the aluminum industry, mostly in R&D. After an initial focus on corrosion resistance, Dr Warner worked on the development of new alloys for the aerospace industry before spending a couple of years at Constellium's Ravenswood (West Virginia) plant as development manager. for the past 7 years he has been in charge of Constellium's R&D program on aerospace and technical products, based in Voreppe (France).

Prior to working for Constellium, Dr Warner obtained a PhD from the University of Cambridge (UK) in the field of metal matrix composites. He is a named inventor of over 20 patents, mostly in the field of aluminum alloys for aerospace, and co-author of more than 30 papers in scientific journals or international conferences.

14:20 – 14:40

Title: Recent advances in aluminium product development for transportation

The increasing costs of energy usage and concern for the environmental impact of transportation generate a need for reducing vehicle weight. In general, higher performance materials can contribute to this need, but their application needs to be economically viable. The acceptable additional cost of a vehicle per kilo weight reduction depends on the application, ranging from of order 1 €/kg saved in automotive applications in the absence of regulatory or project scheduling pressure to over 1000 €/kg in some aerospace contexts. The cost increment for the OEM clearly includes material price but also the cost increase or reduction involved in manufacturing a part from the material. Materials development efforts must thus include both performance increases and overall material and part manufacturing process cost optimizations.

Aluminium, as a light metal used in many mass market applications, has both an excellent track record and significant future potential for meeting this challenge. In this overview, examples of recent materials developments for automotive and aerospace applications will be presented. The emphasis will be on the developments and opportunities inherent in moving into alloy systems that have not traditionally been used in large quantities for these applications. for automotive applications, this involves exploring alloys outside the low-Cu 6xxx alloys that are the mainstay of today's body-in-white applications, whilst for aerospace applications the ongoing activity is mainly in exploiting the potential of the Al-Cu-Li system. In all cases, the materials development efforts will be presented in the context of both the engineering requirements for weight reduction and the constraints and opportunities in their downstream processing.

14:40 – 15:00

Panel discussion

SIDE EVENT G3II: RELEVANCE OF RESOURCES STRATEGIES AND GLOBAL COMPETITION

Thursday 11 September 2013
Room: Sevilla 3
Chair: M. Hofmann-Amtenbrink. Mat Search Consulting Hofmann, Pully, Switzerland

Dr. Christian Hagelüken

Director of EU Government Affairs at Umicore, Hanau, Germany

Christian Hagelüken is Director of EU Government Affairs at Umicore. Between 2003 and 2011 he headed the department for Business Development & Market Research in Umicore's Precious Metals Refining business unit. Before that he had held various management positions in the precious metals department of Degussa AG.

Christian has over 20 years experience in (precious) metals recycling and sustainable metals management and has made numerous contributions to professional books, journals and conferences. He is representing Umicore in related associations, work groups and research co-operations, among others the UNEP Resource Panel and the EU Raw Materials Initiative.

Christian Hagelüken holds university degrees in mining engineering and industrial engineering from RWTH Aachen, Germany, where he also received his Ph.D. in 1991.

13:30 – 13:50

Title: State of the Art of Recycling Less Common Elements – opportunities – challenges – limits

The secured supply of less common elements, which are essential for high-tech applications, is increasingly considered as critical for the European economy. Over the last three decades there has been a booming demand for special and precious metals in products such as catalysts or electronics which will further increase with new emerging technologies, e.g. for renewable energy or electro-mobility. End of life products are potentially an important secondary source for such metals, provided they become accessible for a comprehensive recycling. However, for this purpose the existing recycling approaches mainly designed for flows of mass materials are insufficient. It is important to develop instead highly efficient recycling chains that gain high overall recovery rates also for "technology metals" present only in traces. Hence, after collection of end-of-life products the key challenges are to create transparency about the real material flows in the recycling chain down to the final destination and to ensure innovative, high quality processes throughout this chain. In this context, the management of interfaces between mechanical pre-processing and metallurgical metals recovery as well as the technical-organisational set-up of the entire system are crucial. Significant gaps exist in this area, and current large metal losses can only be avoided by using a systemic optimization along the material and product chain.

Dr. Derk Bol

Program manager, Materials innovation institute M2i, The Netherlands

Dr. Derk Bol is responsible for the material research projects which are being carried out for Philips, ASML, Henkel and other industrial partners of M2i. Derk Bol is chair of the ERA-MIN workgroup on substitution and rapporteur for EIP Raw Materials operational group on substitution. He is co-author of the M2i study Materials Scarcity and of a study on Critical Materials for the Dutch Technology Industry. Before joining M2i, Derk Bol has gained extensive experience in industry, as systems engineer for space satellite projects at Fokker Space, and as product development consultant for ADSE, an engineering and consultancy firm active in Europe in the aerospace and rail sector. Derk Bol has obtained a PhD degree in Physics at the University of Leiden on macroscopic quantum effects at low temperatures.

13:50 – 14:10

Title: Defining a strategy for substitution - the ERA-MIN roadmap

Substitution is seen as one of the solutions to reduce Europe's strong dependency on raw materials imported from elsewhere. Changing to material resources which are present in Europe or are more widely available globally can help to avoid or mitigate supply risks for European manufacturing industry. In the long term, substitution of scarce raw materials by more abundant ones is necessary to cope with the increasing need for materials of a world population growing to nine billion people in 2050. Finding substitution solutions will be the challenge for the materials science community in the coming decades.

The concept of substitution is simple, but selecting the right substitution targets and new material technologies to come up with solutions is far from straightforward. In this presentation we will discuss, on the basis of the ERA-MIN roadmap on substitution, the intricacies in setting up a roadmap on substitution, but also which solutions have been found. The ERA-MIN roadmap on substitution is the first of its kind in Europe and is used as a blue print for other initiatives like the European Innovation Partnership on Raw Materials.

Prof. Dr. Armin Reller

Head of Fraunhofer Project Group Materials Recycling and Resource Strategy, University of Augsburg and Fraunhofer Institut für Silicatforschung, Würzburg, Germany

Armin Reller studied Chemistry at the University of Zurich, held a chair at University of Hamburg (1988-1992) and was chair of solid state chemistry at the University of Augsburg and then was chair of Resources Strategy at the same university in 2009. Prof. Reller is Spokesman of the Center of Competence for the Environment.

14:10 – 14:30

Title: Criticality of Materials – future perspectives for industrial application

The lifestyle of high tech societies directly depends on the extensive use of natural or synthetic resources like water, food, metals and polymers etc. The present and future availability of these essential goods is thought to be controlled and guaranteed by merely economic measures. A more detailed analysis of the trajectories of materials along specific supply and production chains reveals however rather critical contexts: the availability of essential resources - in particular functional metals for emerging energy and communication technologies - might be confined by geological scarcity, difficult accessibility of deposits, geo-political issues, etc. Therefore the evaluation of the criticality of strategic resources, above all of functional metals, is a matter of due foresight in order to diminishing risks and at the same time enhancing their performance and their efficient use. In addition the reduction of dissipative losses is decisive for the development and efficient implementation of circular economies for critical resources.

14:30 – 15:00
Panel discussion

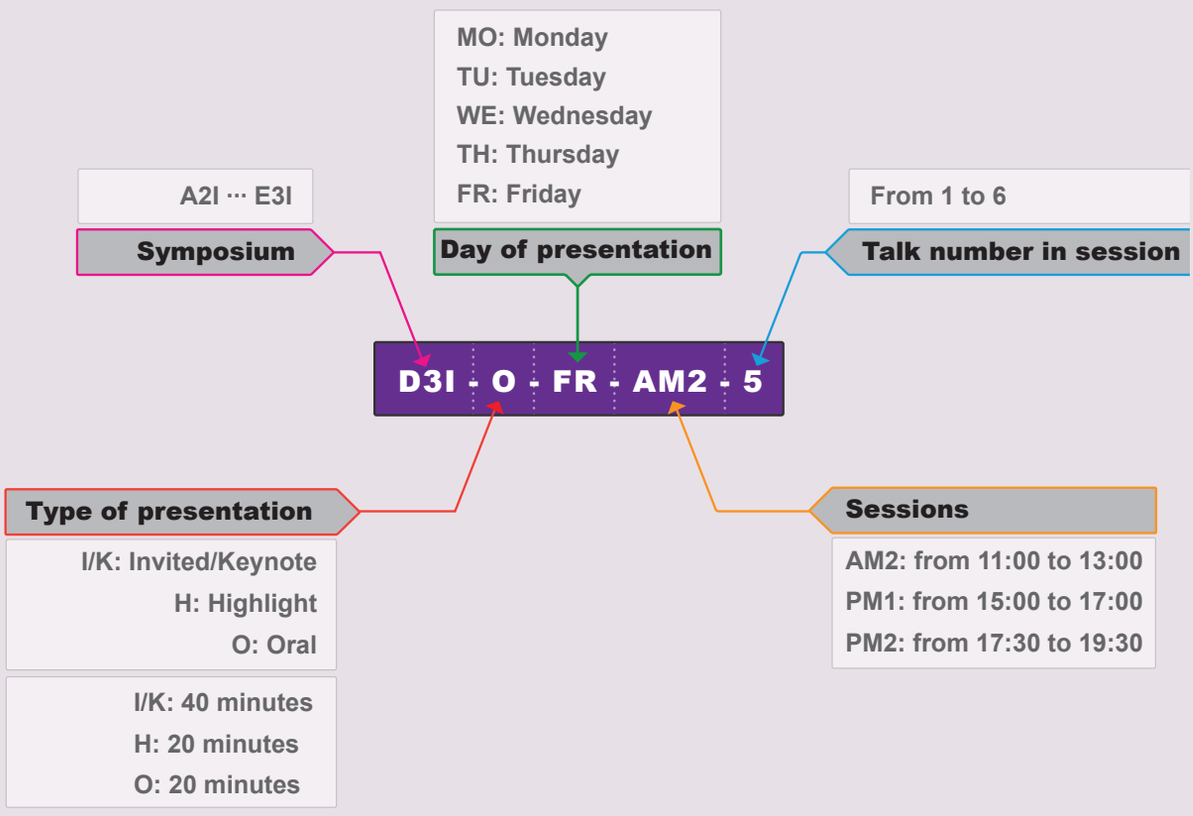
Lecture Program

CODING RULES

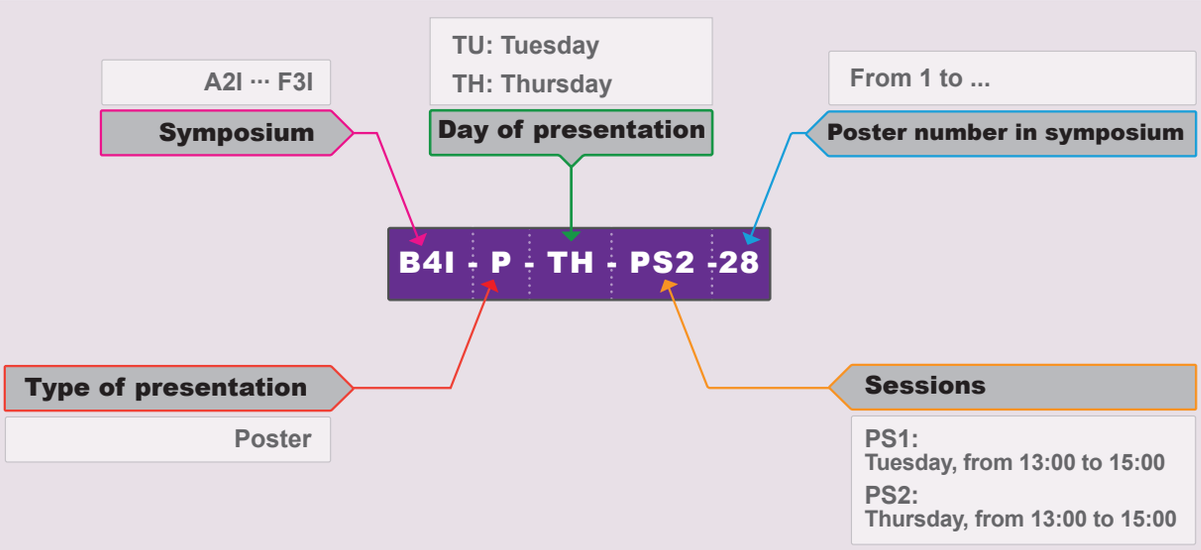
This program is based on the data on July 20th, 2013

There will be some symposia with Oral posters presentations, you can find them in the program or contact your symposium coordinator to get more info.

Oral Presentations

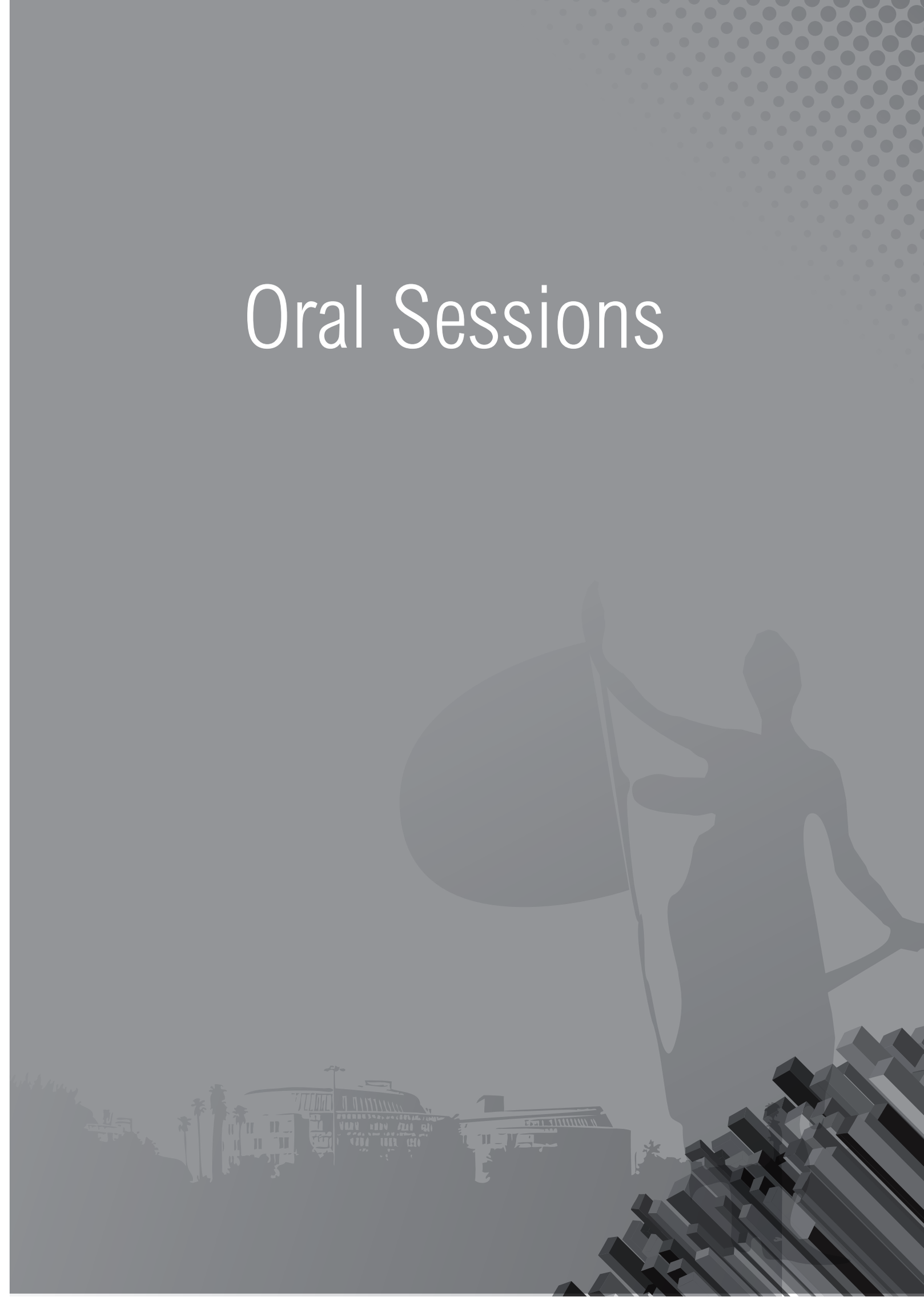


Posters



The list of authors at the end of the document indicates all the abstracts in which each author is involved.

Oral Sessions



MONDAY 9 SEPTEMBER 2013 / AM2

Symposium	A2I	A3II	B1I	B1II
Room	La Pinta	Giralda	Alamillo	Andalucía 5
Session Title	Magnetic Microstructures I	Physical properties	Advanced Processing of Nano-grained and Ultra-fine Grained Steels	Metallic Glasses and their Composites I
Chairperson	Manuel Vázquez	R. Sundaram	H.K.D.H Bhadeshia	Mihai Stoica
11:00	*INVITED / KEYNOTE* **FIELD TUNING OF MAGNETIC DOMAIN WALLS ON ELASTICALLY COUPLED FERROELECTRIC DOMAIN BOUNDARIES** **Sebastiaan Van Dijken** (Aalto University) Kevin Franke, Tuomas Lahtinen	*INVITED / KEYNOTE* **MOIRÉ MINIBANDS IN GRAPHENE HETEROJUNCTIONS WITH HEXAGONAL 2D CRYSTALS** **Vladimir Falko** (Lancaster University)	*HIGHLIGHT* **FULLY RECRYSTALLIZED NANOSTRUCTURES IN STEEL** **Nobuhiro Tsuji** (Kyoto University) Rajib Saha, Rintaro Ueji, Yanzhong Tian, Daisuke Terada, Akinobu Shibata	*INVITED / KEYNOTE* **THERMODYNAMIC QUANTITIES AND DYNAMIC FRAGILITY IN METALLIC GLASS-FORMERS** **Livio Battezzati** (Università di Torino) Giulia Dalla Fontana
11:20			*ORAL* **CHANGE IN CARBON STATE THROUGH LOW-TEMPERATURE AGING IN HEAVILY DRAWN PEARLITIC STEEL WIRES** **Jun Takahashi (**Nippon Steel & Sumitomo Metal Corporation) Makoto Kosaka, Kazuto Kawakami, Toshimi Tarui	
11:40	*INVITED / KEYNOTE* **MICROMAGNETIC ANALYSIS OF THE COERCIVE FIELD OF NANOCRYSTALLINE MNBI AND NANOPATTERNED FEPT** **Helmut Kronmueller** (Max Planck Institute for Intelligent Systems, Stuttgart, Germany) Dagmar Goll	*ORAL* **PROBING GRAPHENE INTERACTION WITH ITS ENVIRONMENT USING HIGH PRESSURE EXPERIMENT: EVOLUTION OF THE MECHANICAL PROPERTIES UNDER HYDROSTATIC AND NON-HYDROSTATIC CONDITIONS** **Jimmy Nicolle** (Laboratoire de Physique de La Matière Condensée Et des Nanostructures UMR 5586 Université de Lyon) Denis Machon, Gilles Montagnac, Philippe Poncharal, Alfonso San Miguel	*ORAL* **FATIGUE PROPERTIES AND CYCLIC STABILITY OF ULTRAFINE GRAINED MEDIUM CARBON STEELS** **Christoph Ruffing** (Working Group of Materials Testing, University of Kaiserslautern) Julia Ivanisenko, Eglantine Courtois-Manara, Christian Kübel, Eberhard Kerscher	*ORAL* **CONTROLLED RELAXATION STATE AND CRYSTALLIZATION KINETICS IN ZR-BASED METALLIC GLASSES** **Junji Saida** (Center for Interdisciplinary Research, Tohoku University) Albertus Setyawan, Masato Wakeda,
12.00		*ORAL* **THERMAL TRANSPORT STUDIES IN CVD GROWN GRAPHENE MEMBRANES FOR APPLICATIONS IN THERMAL SENSING DEVICES** **Giulio Paolo Veronese** (CNR - IMM Bologna) Luca Ortolani, Matteo Ferri, Alberto Roncaglia, Vittorio Morandi, Rita Rizzoli	*ORAL* **MECHANICAL PROPERTIES OF ULTRAFINE GRAINED FERRITE OBTAINED THROUGH DYNAMIC TRANSFORMATION IN 6NI-0.1C STEEL** **Nokeun Park** (Kyoto University) Si Gao, Sunisa Khamsuk, Akinobu Shibata, Nobuhiro Tsuji	*ORAL* **ATOMIC MOBILITY INSIDE SHEAR BANDS: TRACER DIFFUSION, MASS DENSITY AND NANOCRYSTAL DEVELOPMENT** **Gerhard Wilde** (University of Muenster) Joachim Bokeloh, Sergiy Divinski, Martin Peterlechner, Harald Rösner
12:20	*ORAL* **MAGNETIC DOMAIN RESONANCE IN CLOSURE DOMAIN STRUCTURES** **Claudia Patschureck (**Leibniz Institute for Solid State and Materials Research Dresden) Manfred Wolf, Jeffrey McCord, Rudolf Schäfer, Ingolf Mönch, Ludwig Schultz	*ORAL* **GRAPHENE-Q-SWITCHED TWO-MICRON FIBER LASER** **Daniel Popa** (University of Cambridge) Fengqiu Wang, Felice Torrisi, Zhe Jiang, Tawfique Hasan, Zhipei Sun, Wonbae Cho, Andrea C. Ferrari	*ORAL* **INFLUENCE OF OXYGEN CONTENT ON THE STRENGTH AND DUCTILITY OF PURE IRON OBTAINED BY MECHANICAL MILLING** **Casimir Casas Quesada** (Fundacio CTM Centre Tecnologic) José Antonio Benito, José María Cabrera	*ORAL* **SIMULATION STUDY ON THE DYNAMICS OF FORMATION AND GROWTH OF ICOSAHEDRAL ORDER IN LIQUID AND GLASSY PHASES OF METALLIC GLASSES** **Masato Shimono** (National Institute for Materials Science) Hidehiro Onodera
12:40	*ORAL* **MAGNETIC PINNING GEOMETRY FOR SENSING WITH MAGNETIC DOMAINS WALLS** **Hector Corte** (NPL, Teddington, UK) Jonathan Fletcher, Patryck Krzysteczko, Hans Schumacher, Olga Kazakova	*ORAL* **MICROWAVE APPLICATIONS OF EXFOLIATED GRAPHITE COMPOSITES** **Stefano Bellucci** (INFN-Laboratori Nazionali Di Frascati, Italy) Alain Celzard, Jan Macutkevic, Polina Kuzhir	*ORAL* **EFFECT OF SEVERE PLASTIC DE FORMATION ON THE STRAIN HARDENING OF ARMCO IRON** **Jairo Alberto Muñoz Bolaños** (Department of Materials Science and Metallurgical Engineering ETSEIB, Universidad Politecnica de Catalunya) Oscar Fabián Higuera Cobos, José María Cabrera Marrero	*ORAL* **THERMODYNAMICS OF UNDERCOOLED GLASS-FORMERS BASED ON FE** **Giulia Dalla Fontana** (Università Di Torino) Gianluca Fiore, Alberto Castellero, Livio Battezzati

MONDAY 9 SEPTEMBER 2013 / AM2

Symposium	B1III	B1IV	B2I	B4III
Room	España 5	España 3	Macarena	Andalucía 3
Session Title	Iron Aluminides I	Manufacturing I	Ceramics for environmental applications	Ceramic matrix Composites
Chairperson	D. Morris and S. Milenkovic	Carlos Capdevila	Thomas Graule	Andreas Mortensen
11:00	*INVITED / KEYNOTE* **CURRENT PERSPECTIVES OF IRON ALUMINI DE BASED ALLOYS** **Martin Palm** (Max-Planck-Institut Für Eisenforschung GmbH)	*ORAL* **HIGH-CR ODS FERRITIC STEELS R&D FOR ADVANCED NUCLEAR SYSTEMS -JOINING TECHNOLOGY DEVELOPMENT-** **Akihiko Kimura** (Kyoto University) Hwanil Je, Yoosung Ha, Hiroyuki Noto, Noriyuki Iwata, Ryuta Kasada, Takanari Okuda, Shigeharu Ukai, Masuyuki Inoue, Sanghoon Noh	*ORAL* **GLASS CERAMICS AND MINERAL MATERIALS FOR THE IMMOBILIZATION OF LEAD AND CADMIUM FROM MUNICIPAL SOLID WASTE INCINERATOR ASHES** **Katerina Krausova** (Laboratoire Géomatériaux Et Environnement (LGE, EA 4508), Université Paris Est Marne La Vallée) Laurent Gautron, Wai-Hao Lee, Renontial Mbegha Megner, Stephan Borenstajn	*ORAL* **THE EFFECT OF PRIOR HEAT TREATMENT ON THE FRACTURE ENERGY OF METAL FIBRE REINFORCED CERAMIC COMPOSITES (MFCS)** **Suki Lam** (Cambridge University) Lee Marston, Bill Clyne
11:20		*ORAL* **PROCESSING AND MECHANICAL PROPERTIES OF ODS FERRITIC STEEL BY SPARK PLASMA SINTERING** **Xavier Boulnat** (CEA Saclay, DEN/DMN/SRMA, 91191 Gif-sur-Yvette-France) Yann de Carlan, Damien Fabrègue, Michel Pérez	*ORAL* **INFLUENCE OF THE SUBSTRATE ON THE CONSTRAINED SINTERING OF ALUMINA PATTERNED FILMS** **Olivier Guillon** (Friedrich Schiller University Jena) Christine Jamin	*ORAL* **THERMOMECHANICAL PROPERTIES AND WEAR RESISTANCE OF SINTERED SIC-FIBER BONDED CERAMICS** **Carmen Vera García** (Universidad de Sevilla-CSIC) Joaquin Ramírez-Rico, Julián Martínez-Fernández, Mrityunjay Singh
11:40	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF TWO-PHASE FE30NI20MN20AL30** **Ian Baker** (Dartmouth College - Thayer School of Engineering) Xiaolan Wu, Hong Wu, M.K. Miller, K.L. More	*ORAL* **OPTIMISATION OF THE FABRICATION CONDITIONS AND THE CHARACTERISATION OF ODS STEELS FOR ADVANCED NUCLEAR APPLICATIONS** **Michael Gorley** (University of Oxford, Department of Materials) Hongtao Zhang, Steve Roberts, Patrick Grant	*ORAL* **CERAMIC LAYERED MONOLITHS WITH HIERARCHICAL PORE SIZE STRUCTURE FOR PURIFICATION APPLICATIONS OBTAINED BY IONOTROPIC-GELATION** **Christoph Brandes** (University Bremen) Laura Treccani, Kurosch Rezwan	*ORAL* **REACTIVE INFILTRATION TO PRODUCE SIC MATERIALS** **Mario Raul Caccia** (Alicante University) Javier Narciso
12:00	*ORAL* **EFFECT OF PROCESSING CONDITIONS ON TEXTURE AND ELASTIC PROPERTIES OF THE ODS FE-40AL ALLOY** **Thierry Grosdidier** (University of Lorraine) Eric Suzon, Francis Wagner	*ORAL* **INFLUENCE OF MILLING CONDITIONS ON THE MICROSTRUCTURE AND THE MECHANICAL PROPERTIES OF ODS STEELS ELABORATED BY AN ALTERNATIVE BALL-MILLING PROCESS** **Marie Loyer-Prost (**CEA Saclay, Fabrice Legendre) Laurent Chaffron	*ORAL* **FABRICATION OF CERAMIC FIBRES BY FORCESPINNING FOR WATER PURIFICATION** **Mateusz Schabikowski** (Laboratory for High Performance Ceramics, Empa, Swiss Federal Laboratories for Materials Testing and Research, Duebendorf, Switzerland) Justyna Tomaszewska, Jakub Michalski, Dariusz Kata, Thomas Graule	*ORAL* **SYNTHESIS OF SI-SIC-ZRB2 COMPOSITE BY LSI** **Giuseppe, Claudio D'Amico** (Polytechnic of Turin, DISAT) Alberto Ortona, Paolo Fino, Claudio D'Angelo, Sara Biamino, Daniele Gaia, Sandro Giannella
12:20	*ORAL* **HOW ARE THE MECHANICAL PROPERTIES OF FE3AL INTERMETALLICS INFLUENCED BY THE CRYSTAL ORIENTATION AND ALLOY CONCENTRATIONS?** **Mohammad Zamanza** de (Universität des Saarlandes) Atef Zekri, Horst Vehoff, Afrooz Barnoush	*ORAL* **EFFECTS OF THE MECHANICAL ALLOYING AND HOT CONSOLIDATION PROCESSES ON THE MICROSTRUCTURE OF ODS FERRITIC STEEL** **Tae Kyu Kim** (Korea Atomic Energy Research Institute) Sanghoon Noh, Byoungkwon Choi, Changhee Han, Ki-baik Kim, Sukhoon Kang, Jinsung Jang, Yong-Hwan Jeong	*ORAL* **MICROSTRUCTURE, MECHANICAL PROPERTIES AND SLIDING WEAR RESISTANCE OF BIOMORPHIC SIC CERAMICS** **Carmen Vera García** (Universidad de Sevilla-CSIC) Joaquin Ramírez-Rico, Julián Martínez-Fernández, Mrityunjay Singh	*ORAL* **COMPOSITE ZONES PRODUCED IN NI3AL CASTINGS BY IN-SITU SYNTHESIS OF TIC CARBIDES** **Ewa Olejnik** (AGH University of Science and Technology) Tomasz Tokarski, Beata Grabowska, Gabriela Sikora, Edward Tyrala
12:40	*ORAL* **MICROSTRUCTURE AND HIGH TEMPERATURE STRENGTH OF ODS FE-AL-CR INTERMETALLICS** **David Morris** (CENIM-CSIC, María Muñoz-Morris) José Luis Gonzalez-Carrasco	*ORAL* **EFFECT OF MECHANICAL ALLOYING ATMOSPHERES ON MICROSTRUCTURE AND HIGH TEMPERATURE STRENGTH OF ODS FERRITIC STEELS** **Sanghoon Noh** (Korea Atomic Energy Research Institute) Byoungkwon Choi, Changhee Han, Ki-baik Kim, Sukhoon Kang, Jinsung Jang, Yong-Hwan Jeong, Tae Kyu Kim	EMPTY SLOT	*ORAL* **ATOMISTIC SIMULATIONS OF CRACK PROPAGATION IN ALUMINIUM OXIDE CERAMICS** **Yuriy Natanzon** (Material and Process Simulations Group, University of Bayreuth) Denis Pilipenko, Heike Emmerich

MONDAY 9 SEPTEMBER 2013 / AM2

Symposium	C1I	C1II	C2II	C4I
Room	España 1	Sevilla 3	Andalucía 8	Sevilla 2
Session Title	Processes	Phase transformations in Fe and steels I	Interface design I	Protective Coatings and Thin Films I
Chairperson	Jean Marie Drezet	E. Gautier	Jolanta Janczak-Rusch	T. Polcar
11:00	*HIGHLIGHT* **TWO-PHASE FLOW IN DIRECT CHILL CAST ALUMINUM ALLOY SHEET INGOTS** **Laurent Heyvaert** (Institut Jean Lamour) Miha Zaloznik, Hervé Combeau	*HIGHLIGHT* **APPLICATION OF INTERRUPTED COOLING EXPERIMENTS TO UNRAVEL THE MECHANISM OF BAINITIC FERRITE FORMATION IN LOW ALLOY STEELS** **Hao Chen** (Delft University of Technology) Sybrand van der Zwaag	*INVITED/KEYNOTE* **METAL-INDUCED CRYSTALLIZATION OF AMORPHOUS SEMICONDUCTORS IN THIN FILM SYSTEMS: INTERFACE THERMODYNAMICS, ATOMISTIC MECHANISMS, AND INNOVATIVE APPLICATIONS** **Zumin Wang** (Max Planck Institute for Intelligent Systems (formerly Max Planck Institute for Metals Research) Lars Jeurgens, Eric Mittemeijer	*INVITED/KEYNOTE* **MULTI-FUNCTIONAL HARD COATINGS – QUO VADIS?** **Christian Mitterer** (Montanuniversität Leoben)
11:20	*ORAL* **EFFECT OF STRUCTURE DEVELOPMENT IN THE INITIAL SHELL ON HEAT EXTRACTION PROCESS DURING CONTINUOUS CASTING OF LOW ALLOY STEEL** **Hossein Mehrara** (Department of Materials Science and Engineering, de Ift University of Technology) Roumen Petrov, Dmitry Eskin, Laurens Katgerman	*ORAL* **IN-SITU INVESTIGATION OF THE AUSTENITISATION OF AN FE-C-MN STEEL: INFLUENCE OF INITIAL MICROSTRUCTURE AND HEATING RATE** **Vladimir Esin** (Institut Jean Lamour, Université de Lorraine) Benoît de nand, Quentin Le Bihan, Julien Teixeira, Moukrane de hmas, Guillaume Geandier, Elisabeth Gautier, Sabine de nis, Thomas Sourmail		
11:40	*ORAL* **SOLIDIFICATION MICROSTRUCTURE OF NI-BASED SUPERALLOYS** **Mehdi Rahimian** (IMDEA Materials Institute) Ilchat Sabirov, Srdjan Milenkovic	*ORAL* **PREDICTION OF THE STABILITY OF RETAINED AUSTENITE IN A MARTENSITIC STAINLESS STEEL** **Carole Dessolin** (Insa-Lyon MATEIS UMR CNRS 5510) Michel Pérez, Christopher Hutchinson	*ORAL* **EFFECT OF INTERFACE STRUCTURE ON THE MELTING BEHAVIOR OF AG-CU/ALN NANOFOILS FOR LOW-TEMPERATURE JOINING APPLICATIONS** **Giancarlo Pigozzi** (Empa Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland) Andrej Antušek, Jolanta Janczak-Rusch, Daniele Passerone, Carlo Antonio Pignedoli, Jörg Patscheider, Lars P.H. Jeurgens	*ORAL* **SYNTHESIS, MICROSTRUCTURE AND PROPERTIES OF CR-BASED MIXED OXIDE THIN FILMS USING REACTIVE R.F. MAGNETRON SPUTTERING** **Stefanie Spitz (**Karlsruhe Institute of Technology (KIT)) Michael Stüber, Harald Leiste, Sven Ulrich, Hans Jürgen Seifert
12.00	*HIGHLIGHT* **OBSERVATION OF FLUID FLOW AND SOLIDIFICATION DURING GTA WELDING** **Alexis Chiocca** (Lmgc)	*ORAL* **THE EFFECT OF ALLOY COMPOSITION ON THE DURATION OF THE STAGNANT STAGE DURING CYCLIC PARTIAL AUSTENITE - FERRITE TRANSFORMATIONS** **Sybrand van der Zwaag** (Delft University of Technology) Hao Chen	*ORAL* **LINKING SHORT-RANGE ORDER IN THE MELT TO SOLID-LIQUID INTERFACE ORDERING - EFFECT ON THE GROWTH KINETICS IN A METALLIC ALLOY MODEL** **Mohammed Guerdane** (Institute of Applied Materials) Karlsruhe Institute of Technology (KIT), Germany, Britta Nestler	*ORAL* **MULTIFUNCTIONAL ZR-SI-B-C-N FILMS WITH ENHANCED WEAR AND OXIDATION RESISTANCE PREPARED BY PULSED MAGNETRON SPUTTERING** **Pavel Mares** (Department of Physics, University of West Bohemia) Jiri Kohout, Jaroslav Vlcek, Radomir Cerstvy, Zbynek Soukup, Sarka Proksova
12:20	*ORAL* **COUPLED CELLULAR AUTOMATON-FINITE ELEMENT IN A LEVEL SET APPROACH FOR THE MODELING OF MULTI-PASS GAS METAL ARC WELDING PROCESS** **Shijia Chen** (CEMEF Mines-ParisTech) Gildas Guillemot, Charles-André Gandin	*ORAL* **ISOTHERMAL GROWTH OF PARTITIONING AND NO PARTITIONING PEARLITE IN A FE-0.44C-1MN ALLOY** **Carlos Capdevila-Montes** (National Center for Metallurgical Research (CENIM-CSIC)) María Martín-Aranda, Michael K. Miller, Robert E. Hackenberg, Esteban Urones-Garrote	*ORAL* **STRONGLY SIZE-DEPENDENT HIGH-TEMPERATURE BEHAVIOUR OF BISMUTH OXIDE NANOPARTICLES** **Olivier Guillon** (Friedrich Schiller University Jena) Gerrit Günther, Ralf Theissmann, Einar Kruis	*ORAL* **HIGH-TEMPERATURE OXIDATION RESISTANCE OF MOSIBN FILMS** **Philipp Kiryukhantsev-Korneev**, (National University of Science & Technology MISIS) Yuriy Pogozhev, Andrey Bondarev, Dmitry Shtansky, Evgeny Levashov
12:40	*ORAL* **FRECKLE FORMATION IN DIRECTIONALLY SOLIDIFIED SUPERALLOYS NEAR THE INTERFACES BETWEEN SUPERALLOYS AND CERAMIC MATERIALS** **Jianping Hong** (Foundry Institute, RWTH University Aachen) Dexin Ma, Fu Wang, Jun Wang, Andreas Bührig-Polaczek	*ORAL* **MD MODELING OF STRUCTURAL TRANSITIONS IN SOLIDS WITH FCC AND BCC CRYSTAL LATTICE WITH DEFECTS AT NONZERO TEMPERATURE** **Artem Panchenko** (St. Petersburg State Polytechnical University) Ekaterina Podolskaya, Anton Krivtsov	*ORAL* **GRAIN BOUNDARY AND DISLOCATION PIPE DIFFUSION IN AL, FE AND NI** **Georg Stechauner** (Institute of Materials Science and Technology, Vienna University of Technology, Austria) Ernst Kozeschnik	*ORAL* **SIMULATION AND GROWTH OF POROUS SILICON COATINGS BY MAGNETRON SPUTTERING** **Vanda Godinho** (Instituto de Ciencia de Materiales de Sevilla) Jaime Caballero-Hernández, Roland Schierholz, Pavel Moskovkin, Rafael Alvarez, Benjamin Bera, Julien de marche, Alberto Palmero, Stephane Lucas, Asunción Fernández

MONDAY 9 SEPTEMBER 2013 / AM2

	Symposium	C4II	D1III	D1IV	D1V
	Room	Andalucía 7	España 4	Andalucía 1	Andalucía 2
	Session Title	Plasma based deposition of nano-particles	Synchrotron-based Tomography I	Neutron and X-ray Diffraction and Imaging for Materials Scienceand Engineering I	Advanced Electron and Ion Microscopy Methods in Materials Characterization I
	Chairperson	Biederman H.	Alexander Rack	Jon James	María Soranska
11:00	*INVITED / KEYNOTE*	**GISAXS AS A TOOL FOR THE IN-SITU INVESTIGATION OF THIN FILM DE POSITION** **Stephan V. Roth** (Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany) Gerd Herzog, Ralph Doehrmann, Sarathlal Koyiloth Vayalil, Gonzalo Santoro, Matthias Schwartzkopf, Shun Yu, Christina Trautmann, Peter Mueller-Buschbaum, Wilfried Wurth	*INVITED / KEYNOTE* **HIGH-SPEED X-RAY IMAGING PROGRAM AT THE ADVANCED PHOTON SOURCE** **Kamel Fezzaa** (Argonne National Laboratory)	*INVITED / KEYNOTE* **ENERGY-SELECTIVE NEUTRON IMAGING FOR MATERIALS SCIENCE: BRIDGING TRANSMISSION AND DIFFRACTION** **Steven Peetermans** (Paul Scherrer Institut) Eberhard Lehmann	*INVITED / KEYNOTE* **SURFACE PLASMON COUPLING STUDIES THROUGH NEAR-FIELD MAPPING OF ELECTROMAGNETIC MODES IN ELECTRON MICROSCOPY** **Peter A. Van Aken** (Stuttgart Center for Electron Microscopy, Max Planck Institute for Intelligent Systems)Burcu Ogut, Nahid Talebi, Wilfried Sigle, Ralf Vogelgesang
11:20					
11:40	*ORAL* **NANOCOMPOSITE METAL/PLASMA POLYMER FILMS DEPOSITED BY MEANS OF GAS AGGREGATION SOURCES OF METAL NANOPARTICLES** **Ondrej Kylian** (Charles University In Prague) Jiri Kratochvil, Oleksandr Polonskyi, Jan Hanus, Martin Petr, Andrei Choukourov, Pavel Solar, Danka Slavinska, Hynek Biederman	*ORAL* **TIME-RESOLVED IN SITU OBSERVATION OF OSTWALD RIPENING IN A TWO-PHASE AL-CU ALLOY USING X-RAY MICROTOMOGRAPHY** **Thomas Werz** (Ulm University - Institute for Micro and Nanomaterials) Michael Heinze, Mario Scheel, Lukas Helfen, Stefan Odenbach, Carl. E. Krill III	*ORAL* **STRUCTURAL CHARACTERIZATION OF SINGLE CRYSTAL ENGINEERING SAMPLES THROUGH NEUTRON TRANSMISSION SPECTROSCOPIC IMAGING** **Anton Tremsin** (University of California at Berkeley) Joe Kelleher, Shu Yan Zhang, Winfried Kockelmann, Jason McPhate, John Vallerga, Oswald Siegmund, W. Bruce Feller	*ORAL* **ELECTRON ENERGY-LOSS SPECTROSCOPY AND STEM OF TIB2 PARTICLE REINFORCED STEEL** **Nadia Haneche** (Laboratoire de Physique Du Soli de (Lps)) Michael Walls, Sylvie Lartigue, Julie Bourgon, Frédéric Bonnet
12:00	*ORAL* **FABRICATION OF FLUOROCARBON SURFACES WITH CONTROLLED NANOROUGHNESS AND WETTABILITY BY APPLICATION OF NANOPARTICLES** **Martin Petr**, (Charles University In Prague) Ondrej Kylian, Oleksandr Polonskyi, Jiri Kratochvil, Anna Artemenko, Hynek Biederman	*ORAL* **A MODEL HETEROGENEOUS AMORPHOUS MATERIAL FOR X-RAY TOMOGRAPHY: PHASE-SEPARATION AND CRACK PROPAGATION** **David Bouttes**, (Laboratoire PMMH, UMR 7636 ESPCI/CNRS/UPMC/ Paris Diderot) Emmanuelle Gouillart, Davy Dalmas, Damien Vandembroucq	*ORAL* **ASSESSING CAPABILITIES OF DIFFRACTION CONTRAST TOMOGRAPHY BY MEANS OF STUDYING THE SINTERING OF COPPER POWDER** **Stefan Schmiederer** (University of Manchester) Samuel A. McDonald, Andrew King, Philip J. Withers, Lucie Saintoyant, Gavin Vaughan	*ORAL* **CHARACTERISATION OF OXIDE STRUCTURES ON NI-BASE ALLOYS BY NEAR-EDGE EELS** **Karen Kruska** (University of Oxford, Department of Materials, Oxford, United Kingdom) Peter Chou, Olivier Calonne, Lionel Fournier, Sergio Lozano-Pérez
12:20	*ORAL* **PREPARATION OF NANOPARTICLES AND NANOCOMPOSITES THROUGH HIGH EFFICIENCY CLUSTER GENERATION IN THE GAS PHASE BY REACTIVE PULSED DC SPUTTERING** **Thomas Strunskus** (Institute for Materials Science, Chair for Multicomponent Materials, Christian-Albrechts University at Kiel) Oleksandr Polonskyi, Tilo Peter, Amir Mohammad Ahadi, Vladimir Zaporojtchenko, Hynek Biederman, Franz Faupel	*ORAL* **FAST X-RAY MICRO-TOMOGRAPHY DURING HIGH TEMPERATURE DEFORMATION OF ALUMINUM-METALLIC GLASS COMPOSITES** **Michelle Jenice Alvarez Murga**, (SIMaP - Grenoble University/CNRS, Saint Martin d'Hères, France) Antoine Ferré, Pierre Lhuissier, Elodie Boller, Eric Maire, Luc Salvo, Jean-Jacques Blandin	*ORAL* **THE DEVELOPMENT AND FIRST RESULTS OF LABORATORY DIFFRACTION CONTRAST TOMOGRAPHY** **Andrew King** (ESRF, 38043 Grenoble, France) Peter Reischig, Jerome Adrien, Eric Maire, Wolfgang Ludwig	*ORAL* **ELECTRON ENERGY LOSS SPECTROSCOPY STUDY OF ODS PARTICLES FOR NUCLEAR APPLICATIONS IN SFR REACTORS** **Vincent Badjeck** (Laboratoire de Physique Du Solide) Michaël Walls, Laurent Chaffron, Joel Malaplate
12:40	*ORAL* **PLASMA BASED DEPOSITION AND FUNCTIONALIZATION OF SURFACES WITH TUNABLE AND REVERSIBLE WETTING CHARACTERISTICS** **J. Berndt** (GREMI, Université d'Orléans, Polytech'Orleans) H. Acid, E. Kovacevic, C. Cachoncinlle, Th. Strunskus and L. Boufendi	*ORAL* **APPLICATION OF IN SITU X-RAY MICROTOMOGRAPHY TO CREEP DAMAGE STUDIES** **Andras Borbely** (École Nationale Supérieure des Mines de Saint-Étienne) Krzysztof Dzieciol, Federico Sket	*ORAL* **IN SITU OBSERVATION OF SOLID COMBUSTION SYNTHESIS OF TA5SI3 AND TI5SI3 BY PROTON AND X-RAY RADIOGRAPHY** **Thomas Bernert** (Goethe-University Frankfurt) B. Winkler, E. Haussuehl, F. Trouw, S. Vogel, A. Hurd, L. Smilowitz, B. Henson, C. Morris, F. Mariam	*ORAL* **APPLICATION OF HIGH SPATIAL RESOLUTION STEM-EDX FOR MICROSTRUCTURAL CHARACTERIZATION OF CREEP DEFORMED CMSX-4 SINGLE CRYSTAL SUPERALLOY** **Beata Dubiel** (AGH University of Science and Technology, International Centre of Electron Microscopy for Materials Science, Faculty of Metals Engineering and Industrial Computer Science) Aleksandra Czyrska-Filemonowicz

MONDAY 9 SEPTEMBER 2013 / AM2

Symposium	D2I	D2III	D3II	D3IV	E1III
Room	Sevilla 1	Andalucía 6	Cartuja	Andalucía 4	España 2
Session Title	Nanostructured metals I	Adhesion of Thin Films	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior I	Materials Modeling for Energy Applications I	Solid Proton Conductors
Chairperson	Ruth Schwaiger	Megan Cordill and James Dean		Rajeev Ahuja	ML Di Vona
11:00	*INVITED / KEYNOTE* **CU/NB NANOCOMPOSITE METALLIC WIRES PROCESSED BY SEVERE PLASTIC DEFORMATION FOR HIGH PULSED MAGNETS: EFFECTS OF THE NANOSTRUCTURE ON THE RESISTANCE TO EXTREME ENVIRONMENT (HIGH STRAIN, HIGH STRESS, HIGH TEMPERATURE)** **Ludovic Thilly** (University of Poitiers, Institut Pprime, Futuroscope, France) Jean-Baptiste Dubois, Pierre-Olivier Renault, Florence Lecouturier	*INVITED / KEYNOTE* **TELEPHONE CORD BUCKLES : BEHIND AND BEYOND** **Etienne Barthel** (CNRS / Saint-Gobain) Jean-Yvon Faou, Sergey Grachev, Guillaume Parry	*INVITED / KEYNOTE* **COMPETITIVE STOCHASTIC GROWTH MODEL FOR THE 3D MORPHOLOGY OF EUTECTIC SI IN AL-SI ALLOYS** **Gerd Gaiselmann** (Institute of Stochastics)	*INVITED / KEYNOTE* **HYDROGEN STORAGE OVER CHEMICALS CONTAINING PROTIC AND HYDRI DE HYDROGENS ¨C MATERIALS DESIGN AND CATALYTIC MODIFICATION** **Ping Chen** (Dalian Institute of Chemical Physics) Jianhui Wang, Yongshen Chua, Wen Li, Zhitao Xiong, Guotao Wu	*INVITED / KEYNOTE* **SULFONATED AROMATIC COPOLYMER MEMBRANES FOR PROTON EXCHANGE MEMBRANE FUEL CELLS** **Patric Jannasch** (Department of Chemistry, Lund University) Shogo Takamuku, Annika Weiber
11:20					
11:40	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF MAGNESIUM ALLOY AX41 PROCESSED BY METHODS OF EXTRUSION, ECAP AND EX-ECAP** **Tomás Krajnák** (Department of Physics of Materials, Faculty of Mathematics and Physics, Charles University In Prague) Kristián Máthis, Milos Janecek	*HIGHLIGHT* **SPATIALLY RESOLVED MECHANICAL PROPERTY AND ADHESION TESTING OF ULK-FILMS ON 300MM WAFERS,** **U de Dirk Hangen** (Hysitron, Inc.) David Vodnick	*ORAL* **MODELING RAPID SOLIDIFICATION OF CONCENTRATED MULTI-COMPONENT ALLOYS** **Kang Wang** (State Key Laboratory of Solidification Processing, Northwestern Polytechnical University) Xi'an, China, Haifeng Wang, Feng Liu, Haimin Zhai	*INVITED / KEYNOTE* **RECENT DE VELOPMENT ON LIGHT-ELEMENT HYDROGEN STORAGE MATERIALS** **Takayuki Ichikawa** (Hiroshima University) Yoshitsugu Kojima	**EMPTY SLOT**
12:00	*ORAL* **HIGH-TEMPERATURE MECHANICAL PROPERTIES AND MICROSTRUCTURE CORRELATION OF PHYSICAL VAPOUR-DEPOSITED AND ACCUMULATIVE ROLL-BONDED CU/NB NANOSCALE MULTILAYERS** **Jon Molina-Aldareguia**, (IMDEA Materials Institute) Miguel Monclús, Tomas Polcar, Nathan Mara, Irene Beyerlein, Javier Llorca	*ORAL* **THE ADHESION OF A CU/CR FILM STACK ON POLYIMIDE,** **Vera M. Marx**, (Max-Planck-Institut Für Eisenforschung GmbH) Christoph Kirchlechner, Ivo Zizak, Megan J. Cordill, Gerhard de hm	*ORAL* **THERMODYNAMICS OF MATERIALS FOR NUCLEAR ENERGY APPLICATIONS FROM FIRST-PRINCIPLES THEORY: FE-CR AND ZR-BASED ALLOYS** **Igor Abrikosov** (Linköping University) Olle Hellman, Alena Ponomareva, Svetlana Barannikova, Andrey Ruban		*HIGHLIGHT* **BICOMPONENT MEMBRANES BASED ON PFSA FOR PEMFC AND DMFC: MEA TESTS** **Jean-Yves Sanchez** (Lepmi) Houssem Benattia, Jean-Clau de Leprêtre, Cristina Iojoiu, Marc Dupont, Jacques Rosière, Arthur Besson
12:20	*ORAL* **FABRICATION OF COPPER WITH HARMONIC STRUCTURE FOR ADVANCED PERFORMANCE** **Dmitry Orlov** (Ritsumeikan Global Innovation Research Organisation) Ritsumeikan University, Shota Kato, Alexei Vinogradov, Kei Ameyama	*ORAL* **BUCKLING-DRIVEN DELAMINATION OF THIN FILMS ON SUBSTRATES: THE ROLE OF GLIDING AT INTERFACES** **Julien Durinck** (P' Institute) Ruffini Antoine, Colin Jérôme, Coupeau Christophe, Grilhé Jean	*ORAL* **GRAIN GROWTH AND PRECIPITATION IN LOW ALLOY STEEL** **Mohammad Abdur Razzak** (INSA de Lyon) Michel Pérez, Sophie Cazottes, Thomas Sourmail, Marion Frotey	*ORAL* **FIRST-PRINCIPLES SIMULATIONS OF A COPPER-MODIFIED TITANIA PHOTOCATALYST** **Nicola Seriani** (The Abdus Salam ICTP)	*ORAL* **MIXED IONIC CONDUCTIVITY OF YTTRIA-DOPED ZRO2-BAZRO3 DIRECTIONAL SOLIDIFIED EUTECTIC** **Ricardo Carvalho** (Universida de de Aveiro)
12:40	*ORAL* **MECHANICAL STRENGTH OF NANOSTRUCTURED COPPER FILMS** **Rúben Santos** (CEMUC) Filomena Viana	*ORAL* **MECHANICAL AND ELECTRICAL INTEGRITY OF PRINTED AND EVAPORATED AG FILMS ON COMPLIANT SUBSTRATES** **Thomas Haas** (Karlsruhe Institute of Technology, Institute for Applied Materials) Felix Nickel, Byoung-Joon Kim, Alexander Colsmann, Uli Lemmer, Oliver Kraft, Patric Alfons Gruber	*ORAL* **THERMODYNAMIC ASSESSMENTS AND CALCULATIONS IN APPLICATION TO PRECIPITATION IN HIGH MANGANESE STEELS** **Alexandra Khvan** (Insitute of Materials Applications in Mechanical Engineering, RWTH Aachen University) Bengt Hallstedt, Keke Chang	*ORAL* **COMPUTATIONAL MODEL FOR GAS STORAGE IN CLATHRATE HYDRATES** **Rodion Belosludov** (Institute for Materials Research, Tohoku University) Oleg Subbotin, Hiroshi Mizuseki, Vladimir Belosudov, Yoshiyuki Kawazoe	*ORAL* **HIGH-TEMPERATURE PEMFC MEMBRANES FROM PHASE-SEPARATED MULTIBLOCK COPOLYMERS** **Wolfgang H. Meyer** (Max Planck Institute for Polymer Research) Giorgi Titvinidze, Klaus-Dieter Kreuer, Michael Schuster, Carla C. de Araujo, Jan Melchior

MONDAY 9 SEPTEMBER 2013 / PM1

Symposium	A2I	A3II	B1I	B1II
Room	La Pinta	Giralda	Alamillo	Andalucía 5
Session Title	Magnetic Microstructures II	Graphene-Organic hybrids	Nanoscale precipitate-hardened steels	Metallic Glasses and their Composites II
Chairperson	Agustina Asenjo	V. Falko	N. Tsuji	Christina Lekka
15:00	*INVITED / KEYNOTE* **THE MAGNETOCALORIC EFFECT AS A METHOD TO STUDY THE CHARACTERISTICS OF PHASE TRANSITIONS** **Victorino Franco** (Sevilla University, Alejandro Conde)	*INVITED / KEYNOTE* **PRODUCTION AND CHARACTERIZATION OF GRAPHENE DISPERSIONS WITH CONTROLLED MORPHOLOGICAL PROPERTIES** **Matteo Bruna** (Engineering Department, University of Cambridge) Francesco Bonaccorso, Felice Torrisi, Carmela Russo, Giulia Privitera, Tawfique Hasan, Valeria Nicolosi, Nicola Pugno, Andrea Ferrari	*HIGHLIGHT* **HIGH STRENGTH AND DUCTILE HIGH-MN LOW-DENSITY STEELS BY ORDERED NANOCARBIDES** **Ivan Gutierrez-Urrutia** (Max-Planck-Institut Fuer Eisenforschung) Jae-Bok Seol, Ross Marceau, Michael Herbig, Emanuel Welsch, Pyuck-Pa Choi, Dierk Raabe	*HIGHLIGHT* **NEW PROCESSES FOR METALLIC GLASSES PRODUCTION** **Yoshihiko Yokoyama** (Institute for Materials Research, Tohoku University)
15:20			*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF MN-BASED MARAGING STEELS** **Feng Qian** (University of Sheffiel) William Rainforth	*ORAL* **CASTING AND TARNISHING STUDIES OF BULK METALLIC GLASSES BASED ON NOBLE METAL FOR JEWELRY TECHNOLOGY** **Isabella Gallino** (Chair of Metallic Materials, Saarland University) Miriam Eisenbart, Ulrich E. Klotz, Oliver Gross, Ralf Busch
15:40	*ORAL* **WALL-THICKNESS-DEPENDENT MAGNETIZATION-REVERSAL PROPERTIES OF CO-PT NANOTUBES STUDIED WITH MFM AND ANGULAR-DEPENDENCE MEASUREMENTS** **Kristina Zuzek Rozman** (Jozef Stefan Institute, Ljubljana, Slovenia) Muhammad Shahid Arshad, Fabian Rhein, Ulrike Wolff, Volker Neu, Spomenka Kobe	*ORAL* **BOTTOM-UP SYNTHESIS OF ZIGZAG NANOGRAPHENE AND GRAPHENE NANORIBBONS** **Bo Yang** (Max-Planck Institute for Polymer Research) Xinliang Feng, Klaus Muellen	*ORAL* **ROLE OF CU IN THE PROPERTIES OF ALLOY TOOL STEELS** **Jun-Yun Kang** (Korea Institute of Materials Science) Hoyoung Kim, Tae-Ho Lee, Dong Min Son, Dong Hee Lee	*ORAL* **ON THE EFFECT OF PROCESSING CONDITIONS ON FRACTURE OF BULK METALLIC GLASSES** **Sven Bossuyt** (Aalto University) Erno Soinila, Olli Puustinen, Hannu Hänninen
16:00	*ORAL* **IN SITU PLASTIC AND MAGNETIC DEFORMATION OF NI-MN-GA ALLOYS STUDY BY CTEM AND LORENTZ MICROSCOPY** **Myriam H. Aguirre** (LMA-INA Universidad de Zaragoza) Luis A. Rodriguez-Gonzalez, L. de Knop, Cesar Magen, Etienne Snoek, Christophe Gatel, Ricardo Ibarra	*ORAL* **GRAPHENE EXFOLIATION WITH ORGANIC DYES: THE EFFECT OF CHARGE, DIPOLE AND MOLECULAR STRUCTURE** **Andrea Schlierf** (ISOF – National Research Council)	*ORAL* **DESIGNING THE COMPOSITION OF IMPROVED PRECIPITATION HARDENED AUSTENITIC CREEP STEELS ON THE BASIS OF PRECIPITATE COARSENING RATES AND CREEP STRAIN RATES** **Qi Lu** (Delft University of Technology) Wei Xu, Sybrand van der Zwaag	*ORAL* **FABRICATION OF MG-BASED BULK METALLIC GLASS USING MG-ND BYPRODUCT FROM ND-FE-B MAGNET SCRAPS** **Jin Kyu Lee** (Kongju National University) Duck Hwan Yoon, Taek Soo Kim
16:20	*ORAL* **MAGNETIC CONFIGURATION OF CO ANTIDOT ARRAYS BY LORENTZ MICROSCOPY AND ELECTRON HOLOGRAPHY** **Luis Alfredo Rodríguez** (LMA-INA, Universidad de Zaragoza, Spain) César Magén, Etienne Snoeck, Christophe Gatel, Celia Castán, Javier Sesé, Luis Miguel García, Julia Herrero, Juan Bartolome, Fernando Bartolome	*ORAL* **THE INTERFACE BETWEEN POLYAROMATIC HYDROCARBONS (PAH'S) AND GRAPHENE: INSIGHT FROM MOLECULAR SIMULATIONS** **Elias Gebremedhn** (Laboratory for Chemistry of Novel Materials, University of Mons, Mons, Belgium) Liping Chen, Andrea Schlierf, Vincenzo Palermo, David Beljonne	*ORAL* **TEMPERED MARTENSITE: UNDERSTANDING THE MICROSTRUCTURE-PROPERTIES RELATIONSHIP** **Bij-Na Kim** (University of Cambridge) David San Martín, Thomas Sourmail, Pedro E.J. Rivera-Díaz-del-Castillo	*ORAL* **ENHANCING THE BIOMECHANICAL CAPACITY OF TI-NB-BASED METASTABLE ALLOYS FOR IMPLANT APPLICATIONS** **Mariana Calin** (IFW Dresden) Matthias Bönisch, Arne Helth, Ksenia Zhuravleva, Somayeh Abdi, Ajit Panigrahi, Michael Zehetbauer, Annett Gebert, Jürgen Eckert
16:40	*HIGHLIGHT* **COBALT ANTIDOT ARRAYS FROM DILUTED REGIME TO PERCOLATION LIMIT** **Julia Herrero-Albillos** (Centro Universitario de la de fensa de Zaragoza, Spain) Celia Castán-Guerrero, Juan Bartolomé, Fernando Bartolomé, Florian Kronast, Karla J. Merazzo, Manuel Vázquez, Paolo Vavassori, Javier Sesé, Luis Miguel García	*ORAL* **TUNING THE WORK FUNCTION OF GRAPHENE WITH A HIGH MOLECULAR WEIGHT ELECTRON ACCEPTOR** **Christodoulos Christodoulou** (Humboldt Universität Zu Berlin) Marco Nardi, Giovanni Ligorio, Martin Oehzelt, Ingo Salzmann, Khaled Parvez, Klaus Muellen, Norbert Koch	*ORAL* **ON FORMATION OF NANO-SCALE MICROSTRUCTURES IN HIGH STRENGTH STEELS** **Ilana Timokhina** (Deakin University) Subrata Mukherjee, Hossein Beladi, Chen Zhu, Simon Ringer, Peter Hodgson *17:00 EXTRA SESSION* **ATOM PROBE TOMOGRAPHY EXAMINATION OF CARBON AND ALLOYING ELEMENTS IN QUENCH AND TEMPERED STEEL** **A.J. Clarke** (Materials Science and Technology Division, Los Alamos National Laboratory,USA) M.K. Miller, R.D. Field, D.J. Alexander, K.D. Clarke, P.J. Gibbs	*ORAL* **MICROSTRUCTURE OF ULTRA-RAPIDLY SOLIDIFIED ZR-TI ALLOYS** **Cosmin Locovei** (POLITEHNICA University of Timisoara, Romania) Aurel Raduta, Mihai Stoica, Mircea Nicoara, Jürgen Eckert

MONDAY 9 SEPTEMBER 2013 / PM1

Symposium	B1III	B1IV	B2I	B4III
Room	España 5	España 3	Macarena	Andalucía 3
Session Title	Iron Aluminides II	Manufacturing II	Nanocomposites and ultrahard materials	Cu-, Ti-, and Mg-matrix composites
Chairperson	M. Palm	Monica Campos	Dariusz Kata	Francis Delannay
15:00	*ORAL* **STRUCTURE AND PROPERTIES OF THE FE40AL INTERMETALLICS SINTERED IN VACUUM BY PRESSURE-ASSISTED INDUCTION SINTERING (PAIS) METHOD** **Dariusz Siemiaszko** (Military University of Technology) Pawel Józwik, Beata Kowalska	*ORAL* **EFFECT OF THE CHEMICAL COMPOSITION ON THE OXIDE COARSENING KINETICS IN FE-14%CR ODS ALLOYS** **Marie-Helene Mathon** (CEA / Laboratoire Léon Brillouin) Shengyi Zhong, Vincent Klosek, Joel Ribis, Yann de Carlan	*INVITED / KEYNOTE* **MECHANICAL PERFORMANCE OF ALUMINA TOUGHENED ZIRCONIA (ATZ) NANOCOMPOSITES** **Sergio Rivera Monte** (Nanoker ResearcH) Lidia Goyos, Catuxa Prado, Adolfo Fernández, Luis Antonio Díaz, Ramón Torrecillas, Javier Belzunce	*INVITED / KEYNOTE* **HIGHLY REINFORCED COPPER MATRIX COMPOSITES** **Andreas Mortensen** (Ecole Polytechnique Fédérale de Lausanne) Carmen Krüger
15:20	*ORAL* **AB INITIO STUDY OF COMPOSITIONAL TRENDS IN ELASTIC PROPERTIES OF FE-AL COMPOUNDS** **Afshin Izanlou** (Max-Planck-Institut Für Eisenforschung GmbH) Martin Friak, Mira Todorova, David Holec, Joerg Neugebauer	*ORAL* **FABRICATION AND MICROSTRUCTURAL CHARACTERIZATION OF ODS STEELS** **Mercedes Hernández Mayoral** (CIEMAT, Spain) Andrea García-Junceda, Marta Serrano, Isabell Schönitz, Thomas Weissgaerber, Burghardt Kloeden, Andreas Ulbricht, Frank Bergner, Ahmed Shariq, Bertrand Radiguet		
15:40	*ORAL* **AB INITIO STUDY OF FE1-XALX (X < 50 %) STRUCTURAL, MAGNETIC AND ELECTRONIC PROPERTIES: EFFECT OF B AND C ADDITIONS** **Kellou Abdelhafid** (Laboratoire D'Etu de des Microstructures et de Mécanique des Matériaux) Thierry Grodidize, Jean-Marc Raulot	*ORAL* **DE VELOPMENT AND MICROSTRUCTURAL CHARACTERIZATION OF NANOSTRUCTURED FE–CR–AL–W ODS ALLOYS** **Nerea García Rodríguez** (Universidad Carlos III de Madrid) Mónica Campos, José Manuel Torralba, Marie-Hélène Berger, Yves Bienvenu	*ORAL* **PROPERTIES AND PROCESSING OF POLYMER DERIVED CERAMICS** **Pedro E Sanchez Jimenez** (Instituto de Ciencia de Materiales de Sevilla) Cristina García Garrido, Antonio Perejon, Luis A. Pérez Maqueda, José M. Criado	*ORAL* **INFILTRATION AND SOLIDIFICATION BEHAVIOUR DURING SQUEEZE CASTING OF ALUMINA PREFORMS WITH COPPER** **Jacek Kaczmar** (Politechnika Wroclawska) Krzysztof Naplocha, Kazimierz Granat
16:00	*ORAL* **COMPETING INTERACTIONS AND EFFECTS OF LOCAL ATOMIC ENVIRONMENT ON MAGNETISM OF FE IN DISORDERED AND PARTIALLY ORDERED FEAL ALLOY** **Sergii Khmelevskyi** (CMS, Institute of Applied Physics, Vienna University of Technology)	*ORAL* **USE OF EXTERNAL FIELDS IN ODS ALLOY PRODUCTION** **Valdis Bojarevics** (University of Greenwich) Koulis Pericleous, Georgi Djambazov	*ORAL* **EFFECT OF MGO-DOPING ON MICROSTRUCTURE AND PROPERTIES OF AL2TIO5** **Ryosuke Maki** (University of Tsukuba) Yoshikazu Suzuki	*ORAL* **MICROSTRUCTURE AND THERMOMECHANICAL BEHAVIOUR OF MAGNESIUM – C NANOTUBES COMPOSITES PRODUCED BY FRICTION STIR PROCESSING** **Anne Mertens** (University of Liege (ULg)) Aude Simar, Didier Garray, Jacques Halleux, Henri-Michel Montrieux, Jacqueline Lecomte-Beckers
16:20	*ORAL* **BONDING FEATURES IN COLD GAS SPRAYING OF FEAL INTERMETALLICS** **Núria Cinca** (Thermal Spray Center, Universitat de Barcelona, Spain) Josép Rebled, Sonia Estradé, Francesca Peiró, Alexander List, Frank Gartner, Thomas Klassen, Josép Maria Guilemany	*ORAL* **FABRICATION PROCESS AND BASIC INVESTIGATION OF 9 AND 12 CR ODS STEEL** **Georg Mueller** (Karlsruhe Institute of Technology) Takanari Okuda, Adrian Jianu, Annette Heinzel, Alfons Weisenburger	*ORAL* **METAL MATRIX NI-WC COMPOSITE COATINGS WITH GRADED COMPOSITION** **Maria José Tobar**(Universida de Da Coruña) José Manuel Amado, José Montero, Armando Yáñez	*HIGHLIGHT* **INVESTIGATION OF CRACK INITIATION AND INTERNAL STRESSES IN MULTI METAL MATRIX COMPOSITES BY SYNCHROTRON RADIATION** **Joachim Gussone** (German Aerospace Center) Galina Kasperovich, Christina Reinhard, Joachim Hausmann
16:40	*ORAL* **POROUS INTERMETALLICS FABRICATED FROM IRON AND ALUMINUM POWDERS WITH ADDITION OF ORGANIC FOAMING AGENTS** **Krzysztof Karczewski** (Military University of Technology) Stanislaw Józwiak, Michal Chojnacki, Wojciech Stępnioski, Zbigniew Bojar	*ORAL* **DEVELOPMENT OF NEW TECHNOLOGIES FOR NANOPARTICLE ADDITION IN STEEL** **Lorena M. Callejo** (TECNALIA) Research & Innovation, Idurre Kaltzakorta	EMPTY SLOT	EMPTY SLOT

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Symposium	**C1I**	**C1II**	**C2II**	**C4I**
Room	**España 1**	**Sevilla 3**	**Andalucía 8**	**Sevilla 2**
Session Title	**Nucleation/ Porosity**	**Phase transformations in Fe and steels II**	**Interface design II**	**Protective Coatings and Thin Films II**
Chairperson	**Michel Rappaz**	**E. Kozeschnik**	**Lars Jeurgens**	**C. Mitterer**
15:00	*INVITED / KEYNOTE* **EXPERIMENTAL DETERMINATION OF NUCLEATION RATES** **Gerhard Wil**de (University of Muenster) Joachim Bokeloh, Roberto E. Rozas, Jürgen Horbach	*HIGHLIGHT* **THE ROLE OF CRYSTALLOGRAPHIC ORIENTATION RELATIONS DURING NUCLEATION OF AUSTENITE IN FERRITE STUDIED IN-SITU BY 3DXRD MICROSCOPY** **Sven Erik offerman** (Delft University of Technology) Hemant Sharma, Jon Wright, Jilt Sietsma	*ORAL* **INTERFACIAL DESIGN OF NANO-MATERIALS FOR NANOJOINING TECHNOLOGIES** **Jolanta Janczak-Rusch** (Empa, Swiss Federal Laboratories for Materials Science and Technology) Giancarlo Pigozzi, Karolina K. Sobol-Sosnowska, Magdalena Pawelkiewicz, Lars P.H. Jeurgens	*INVITED / KEYNOTE* **HIGH POWER PULSED PECVD** **Henrik Pedersen** (Linkoping University) Petter Larsson, Asim Aijaz, Jens Jensen, Daniel Lundin
15:20		*ORAL* **DE VIATION FROM LOCAL EQUILIBRIUM AT THE MIGRATING AUSTENITE-FERRITE INTERFACE** **Ernst Gamsjäger** (Institute of Mechanics, Montanuniversitaet Leoben) Hao Chen, Sybrand van der Zwaag	*ORAL* **THEORETICAL FRAMEWORK FOR THE DESCRIPTION OF THE MELTING BEHAVIOR OF NANO-STRUCTURED METALLIC THIN FILMS CONFINED BY INERT REACTION BARRIERS** **George Kaptay** (Bay Zoltan Nonprofit Ltd) Jolanta Janczak-Rush, Giovanni Pigozzi, Lars Jeurgens	
15:40	*ORAL* **GRAIN REFINEMENT OF ZINC-ALUMINIUM FOUNDRY ALLOYS WITH MEDIUM AL CONTENT** **Witold K. Krajewski** (AGH University of Science and Technology - Faculty of Foundry Engineering) Grzegorz Piwowarski, Pawel K. Krajewski	*ORAL* **CONTINUOUS HEATING TRANSFORMATIONS IN A CHEMICALLY BANDED COLD-ROLLED STAINLESS STEEL: MICROSTRUCTURAL AND MECHANICAL CHARACTERIZATION** **Carola A. Celada Casero** (Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC)) Isaac Toda-Caraballo, David San Martin	*ORAL* **GROWTH OF METAL NANOTUBES** **Semanur Baylan** (Max Planck Institute for Intelligent Systems) Gunther Richter	*ORAL* **ADVANCES IN PROCESS TECHNOLOGY AND DE POSITION EQUIPMENT FOR HIPIMS COATINGS FOR CUTTING TOOLS** **Christoph Schiffers** (CemeCon AG) Toni Leyendecker, Oliver Lemmer, Werner Kölker
16:00	*ORAL* **CRYSTAL NUCLEATION IN UNDERCOOLED MELTS OF PURE NI AND CO100-XPDX ALLOY** **Reeti Singh** (Institute of Material Physics in Space) German Aerospace Center, Köln, 51147-Köln Germany, Gerhard Wilde, Dieter Herlach	*ORAL* **AUSTENITE FORMATION IN TI/NB MICROALLOYED LOW CARBON DUAL PHASE STEELS FOR AUTOMOTIVE APPLICATIONS** **Clément Philippot** (Aix Marseille Université - CNRS - IM2NP) Josée Drillet, Myriam Dumont, Véronique Hébert, Khalid Hoummada, Philippe Maugis, Nathalie Valle	*ORAL* **EFFECT OF SIZE, COMPOSITION AND CONFIGURATION ON THE UNDERCOOLING DEGREE OF LEAD-FREE SOLDER ALLOYS IN MICROELECTRONIC PACKAGING** **Fiqiri Hodaj** (Grenoble Institute of Technology)	*ORAL* **SELF-HEALING OF YTTRIUM-DOPED CR2ALC MAX PHASE COATINGS DEPOSITED BY HIPIMS** **Christoph Leyens** (Technische Universität Dresden, Institute of Materials Science) Olena Berger, Moritz to Baben, Jochen Schneider
16:20	*ORAL* **EFFECT OF MINUTE CR ADDITIONS ON THE LIQUID DIFFUSION COEFFICIENTS OF SOLUTE ELEMENTS IN AL-ZN-CR ALLOYS** **Güven Kurtuldu** (Computational Materials Laboratory, Ecole Polytechnique Fédérale de Lausanne, Switzerland) Philippe Jarry, Michel Rappaz	*ORAL* **INFLUENCE OF THE INHERITANCE OF CHEMICAL ELEMENTS ON THE TRANSFORMATION BEHAVIOUR DURING INTERCRITICAL ANNEALING OF DP STEEL STRIPS** **Lars Schemmann** (Max-Planck-Institut Für Eisenforschung GmbH (MPIE)) Stefan Zaefferer, Frank Friedel, Dorothea Mattissen, Eva Zimmermann, Dierk Raabe	*ORAL* **SUPPRESSION CRITERIA OF CU3SN COMPOUND AT CU/CU6SN5 INTERFACE DURING SOLDERING PROCESS** **Oleksii Liashenko** (Grenoble INP) Andriy Gusak, Fiqiri Hodaj	*ORAL* **DLC-W COATING TESTED IN COMBUSTION ENGINE - FRICTIONAL AND WEAR ANALYSIS** **Petr Mutafov** (Czech Technical University In Prague) Tomas Polcar, Albano Cavaleiro
16:40	*ORAL* **AN ANALYTIC MODEL FOR GAS BUBBLE OSCILLATION DURING ULTRASONIC TREATMENT OF MOLTEN METAL** **Zhang Yuning** (University of Manchester) Peter Lee	*ORAL* **COUPLED CARBON DIFFUSION AND PRECIPITATION IN A DISSIMILAR STEEL WELD DURING ISOTHERMAL HEAT-TREATMENT: MODELLING AND CHARACTERIZATION** **Fanny Mas** (SIMAP Laboratory) Catherine Tassin, François Roch, Patrick Todeschini, Yves Brechet	*ORAL* **STRUCTURAL AND COMPOSITIONAL CHARACTERIZATION OF INGAN/GAN MULTILAYERS GROWN WITH UNINTENTIONALLY ROUGH INTERFACES** **Daniel Carvalho** (University of Cádiz) T. Ben, F.M Morales, R. García, S.M.C Miranda, A. Redondo-Cubero, L.C Alves, A. Alves, K Lorenz, P.R Edwards	*ORAL* **IRRADIATION EFFECT ON STRUCTURE AND PROPERTIES OF THIN FILMS** **Rostislav Andrievski** (Institute of Problems of Chemical Physics) Russian Academy of Sciences

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Symposium	C4II	D1III	D1IV	D1V
Room	Andalucía 7	España 4	Andalucía 1	Andalucía 2
Session Title	Plasma polymers and nanocomposites	Beyond Imaging: Algorithms and Tomography	Neutron and X-ray Diffraction and Imaging for Materials Scienceand Engineering II	Advanced Electron and Ion Microscopy Methods in Materials Characterization II
Chairperson	Kylian O.	Julia Herzen	Anton Tremsin	Peter van Aken
15:00	*ORAL* **GLOW DISCHARGE-DRIVEN MORPHOLOGY OF POLY(ETHYLENE) NANO-ISLANDS IN THE AGGREGATION REGIME** **Andrei Choukourov** (Charles University In Prague) Iurii Melnichuk, Ivan Gordeev, Jan Hanuš, Ondřej Kylián, Danka Slavínská, Hynek Biederman	*HIGHLIGHT* **DETECTION OF LAYERED STRUCTURES IN FIBRE REINFORCED POLYMER EMPLOYING SYNCHROTRON AND LABORATORY X-RAY CT** **Oliver Wirjadi** (Fraunhofer ITWM) Michael Godehardt, Katja Schladitz, Björn Wagner, Alexander Rack, Martin Gurka, Andreas Noll	*ORAL* **RESIDUAL STRESS PREDICTION IN LARGE 2618 ALUMINIUM ALLOY COMPRESSOR WHEELS** **Nicolas Chobaut** (Ecole Polytechnique Fédérale de Lausanne, Laboratoire de simulation des matériaux) Julia Repper, Thilo Pirling, Denis Carron, Peter Saelzle, Jean-Marie Drezet	*HIGHLIGHT* **SINGLE DOPANT ATOM DETECTION IN COMPLEX LAYERED MATERIALS** **Daniel Grando Stroppa** (Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons (ER-C), Forschungszentrum Jülich GmbH, Germany) Lena Yadgarov, Juri Barthel, Reshef Tenne, Lothar Houben
15:20	*ORAL* **PECVD-PLASMA POLYMERITATION OF COOH- GROUPS FOR BIOLOGICAL APPLICATIONS** **Marino Colasuonno** (Venetonanotech) Anna Meneghello, Agnese Antognoli, Alessandro Patelli, Erica Cretaio, Roberto Pierobon, Roberto Olivotto	*ORAL* **X-RAY TOMOGRAPHIC INVESTIGATION OF DAMAGE EVOLUTION OF SEQUENTIAL TENSILE DEFORMATION OF ±45° PLAIN AND OPEN HOLE CARBON FIBRE LAMINATES** **Federico Sket** (IMDEA Materials Institute) Alejandro Enfedaque, Crystal Alton, Carlos González, Javier Llorca	*ORAL* **NEUTRON DIFFRACTION IN A VALIDATION OF IN-SITU VIBRATORY STRESS RELIEF APPLIED TO WELDED STEEL PLATES** **Vadim Davydov (**Paul Scherrer Institute) Arne Wahlen, Andreas Matt, Helena Van Swygenhoven	*ORAL* **MORPHOLOGICAL EVOLUTION OF DEFORMATION-INDUCED MIXING IN AN IMMISCIBLE AG-CU NANOCOMPOSITE STUDIED BY TEM** **Di Wang** (Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT)) Mohsen Pouryazdan, Robby Prang, Torsten Scherer, D. Scwen, R. Averback, P. Bellon, Christian Kuebel, Horst Hahn
15:40	*ORAL* **TOWARDS THE UNDERSTANDING OF THE INFLUENCE OF THE SUBSTRATE TEMPERATURE ON THE SULFUR CONTENT OF PROPANETHIOL PLASMA POLYMERS FILMS** **Francisco J Aparicio** (University of Mons) Damien Thiry, Rony Snyders	*ORAL* **IMAGE BASED CHARACTERIZATION AND MODELING OF CLOSED-CELL POLYMER FOAMS** **Irene Vecchio** (Fraunhofer ITWM) Katja Schladitz, Claudia Redenbach	*ORAL* **ELASTIC STRAIN TENSOR MEASUREMENT IN SINGLE GRAINS OF POLYCRYSTALLINE SAMPLES BY THREE DIMENSIONAL X-RAY DIFFRACTION** **Andras Borbely** (École Nationale Supérieure des Mines de Saint-Étienne) Loïc Renversade, Peter Kenesei, Jonathan Wright, Romain Quey	*ORAL* **CHARACTERIZATION OF AL2SI2SR-PHASES IN ALSI FOUNDRY ALLOYS** **Michael Engstler** (Saarland University, Department of Materials Science, Functional Materials) Paulo Rossi, Jenifer Barrirero, Frank Mücklich
16:00	*ORAL* **REMOTE PLASMA ASSISTED VACUUM DE POSITION OF ORGANIC NANOCOMPOSITE MULTIFUNCTIONAL THIN FILMS** **María Alcaire Martín** (Instituto de Ciencia de Materiales de Sevilla.Csic-Universidad de Sevilla) Francisco J. Aparicio Rebollo, Luis Cerdán, Fernando Lahoz Zamarro, Youssef Oulad Zian, Ana I. Borrás Martos, Inmaculada García Moreno, Angel Costela, Agustín Rodriguez González-Elipe, Angel Barranco Quero	*ORAL* **RANDOM MODELING OF WOVEN TEXTILE COMPOSITES** **Julie Escoda** (Fraunhofer ITWM) Oliver Wirjadi, Katja Schladitz	*ORAL* **ROLE OF CEMENTITE ON THE ACCUMULATION OF INTERNAL STRAIN UNDER DIFFERENT LOADING CONDITIONS IN A CREEP RESISTANT BAINITIC STEEL** **Steven Van Petegem** (Paul Scherrer Institut) Michael Weisser, Stuart Holdsworth, Helena Van Swygenhoven	*ORAL* **3D AND NANOSCALE INVESTIGATIONS OF WETTING BETWEEN ORGANIC LIQUIDS AND ELECTROSPUN NANOFIBER NETWORKS** **Hao Zhang** (Queen Mary University of London) Russell Bailey, Urszula Stachewicz, Asa Barber
16:20	*ORAL* **EFFECT OF AQUEOUS ENVIRONMENT ON PROPERTIES OF AG/A-C:H:O NANOCOMPOSITE FILMS** **Martin Drabik** (Empa, St. Gallen, Switzerland) Dirk Hegemann, Joséf Pesicka, Hynek Biederman	*ORAL* **COMBININ MICRO COMPUTED TOMOGRAPHY AND HISTOLOGY TO ASSESS THE EFFICACY OF BONE AUGMENTATION MATERIALS** **Bert Müller** (University of Basel, Bernd Ilgenstein) Anja Stalder, Hans de yhle, Stefan Stübiger, Felix Beckmann	*ORAL* **THERMAL MICROSTRESS IN CEMENTITE POLYCRYSTALS** **Andreas Leineweber** (Max Planck Institute for Metals Research, Stuttgart, Germany) Eric J. Mittemeijer	*ORAL* **IMPACT OF ANNEALING ON THE SB AND IN DISTRIBUTION IN GAASSB-CAPPED INAS QUANTUM DOTS** **Daniel Fernández** (Departamento de Ciencia de los Materiales e IM y QI, Universidad de Cádiz, Puerto Real, Spain) J.M. Ulloa, A. Hierro, D.L. Sales, L.D. Blanco, R. Beanland, A.M. Sanchez, J.M. Lorens, B. Alen, D. González
16:40	*ORAL* **NANOSTRUCTURED AND FUNCTIONAL POLYMERS BASED MATERIALS : FROM MACROMOLECULES ASSEMBLIES IN THIN FILMS TO INDUSTRIAL APPLICATIONS** **David Ruch** (CRP Henri Tudor)	*ORAL* **EVALUATION OF A NOVEL DATA ACQUISITION SCHEME FOR COMPUTED TOMOGRAPHY IMAGING BASED ON TRANSLATIONAL MOVEMENTS** **Theobald Fuchs** (Fraunhofer de velopment Center X-Ray Technology EZRT) Tobias Schön, Kllian Dremel, Randolf Hanke	*ORAL* **X-RAY DIFFRACTION ANALYSIS OF RESIDUAL STRESS IN SHORT-FIBER REINFORCED PLASTICS** **Keisuke Tanaka** (Department of Mechanical Engineering, Meijo University) Yoshikai Akiniwa, Noboru Egami	*ORAL* **COMPOSITIONAL HOMOGENEITY AND DIELECTRIC PROPERTIES OF PLZT FERROELECTRIC CERAMICS** **Katarzyna Berent** (Institute of Metallurgy and Materials Science, Polish Academy of Sciences) Marek Faryna, Malgorzata Ploñska

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Symposium	D2I	D2III	D3II	D3IV	E1III
Room	Sevilla 1	Andalucía 6	Cartuja	Andalucía 4	España 2
Session Title	Nanostructured metals II	Mechanical Behavior of Thin Films	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior II	Materials Modeling for Energy Applications II	Solid Ionic Conductors I
Chairperson	Ludovic Thilly	Megan Cordill and James Dean		P. Chen	R. Hempelmann
15:00	*ORAL* **INDENTATION AND MICRO-COMPRESSION TESTING OF NANOCRYSTALLINE PALLADIUM ALLOYS** **Ruth Schwaiger** (Karlsruhe Institute of Technology, Institute of Applied Materials (IAM)) Thomas Neithardt, Oliver Kraft	*ORAL* **IN-SITU STUDIES ON CRACK RESISTANCE OF CRN-BASED HARD COATINGS** **Jörg Paulitsch** (Christian Doppler, Laboratory for Application Oriented Coating de velopment At The Institute of Materials Science and Technology, Vienna University of Technology, Austria) Manfred Schlögl, Jozef Keckes, Christoph Kirchlechner, Megan J. Cordill, Paul H. Mayrhofer	*INVITED / KEYNOTE* **COUPLING OF MAGNETIC AND LATTICE DEGREES OF FREEDOM: AB INITIO DERIVED CONSEQUENCES FOR PHASE DIAGRAMS** **Tilmann Hickel** (Max-Planck-Institut Für Eisenforschung GmbH) Biswanath Dutta, Fritz Körmann, Jörg Neugebauer	*INVITED / KEYNOTE* **COMPUTATIONAL CHEMISTRY AND SIMULATION FOR HYDROGEN STORAGE: CASE STUDIES** **Sourav Pal** (CSIR-National Chemical Laboratory)	*INVITED / KEYNOTE* **APPLICATIONS FOR PR TONIC CERAMIC TUBULAR MEMBRANES BASED ON YTTRIUM DOPED BARIUM CERIUM ZIRCONATE** **Christian Kjølseth** (Protia AS,Oslo, Norway) Grover W. Coors
15:20	*ORAL* **MECHANICAL BEHAVIOR OF SEVERELY DE FORMED TITANIUM WITH VARYING IMPURITY LEVELS** **G. Guven Yapici** (Ozyegin University) Ibrahim Karaman, Hans Maier	*ORAL* **IN-SITU TEM STUDIES OF INTERFACE FRACTURE** **Andreas Kelling** (Georg-August-University Institute for Materials Physics, Georg-August-University of Göttingen) Inga Knorr, Cynthia A. Volkert			
15:40	*ORAL* **ULTRAFINE GRAINED HIGH-ALLOYED AUSTENITIC TRIP/TWIP STEELS** **Horst Biermann** (TU Bergakademie Freiberg) Alexandra Müller, Anja Weidner	*ORAL* **INTEGRATED GLOBAL DIGITAL IMAGE CORRELATION FOR INTERFACE DE LAMINATION CHARACTERIZATION** **Hoefnagels Johan** (Eindhoven University of Technology, The Netherlands) Benoit Blaysat, Gilles Lubineau, Marc Geers	*ORAL* **THERMODYNAMICS AND PHASE EQUILIBRIUM IN NANOALLOYS: SINGLE PARTICLES AND PARTICLES ASSEMBLIES** **Mathieu Fevre** (Onera-CNRS UMR 104) Yann Le Bouar, Alphonse Finel	*INVITED / KEYNOTE* **THERMODYNAMIC MODELLING OF HYDROGEN STORAGE SYSTEMS USING DFT CALCULATIONS AND THE CALPHAD METHOD** **Jean-Marc Joubert** (Cmtr/icmpe/cnrs) Jean-Clau de Crivello	*ORAL* **NEW OPPORTUNITY FOR A PTFE-FREE FUEL CELL ASSEMBLY BY MEANS OF SPECIFIC PERFLUORINATED REACTIVE POLYMERIC MATERIAL** **Walter Navarrini** (Politecnico Di Milano) Maurizio Sansotera, Massimo Gola, Giovanni Dotelli, Paola Gallo Stampino
16:00	*ORAL* **THERMAL STABILITY OF TRC ALUMINIUM ALLOYS WITH ZR ADDITION PROCESSED BY EQUEL-CHANNEL ANGULAR PRESSING** **Michaela Poková** (Charles University In Prague) Miroslav Cieslar, Pøemysl Málek	*ORAL* **INTERFACE CHARACTERISATION OF CARBON FIBERS EMBEDDED IN THERMO SETTING POLYMER VIA CYCLIC SINGLE FIBRE PUSH OUT** **Rudy Ghisleni** (EMPA, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Mechanics of Materials and Nanostructures) Andrea Battisti, Andreas Brunner, Giovanni Terrasi, Johann Michler	*ORAL* **INVESTIGATING THE ROLE OF GRAIN AND PHASE BOUNDARIES IN DEFORMATION BEHAVIOUR OF TRIP ASSISTED STEELS WITH NON-LOCAL CRYSTAL PLASTICITY MODEL** **Satyapriya Gupta** (Interdisciplinary Center for Advanced Material Simulation(ICAMS)) Anxin Ma, Alexander Hartmaier		*ORAL* **NOVEL APATITE-TYPE ELECTROLYTES FOR SOLID OXIDE FUEL CELLS** **Pooja Panchmatia** (University of Huddersfield) Alodia Orera, Peter Slater, John Hanna, Mark Smith, Saiful Islam
16:20	*ORAL* **MAGNESIUM SHEETS OF AM SERIES PROCESSED THROUGH ACCUMULATIVE ROLL BONDING** **Friederike Schwarz** (TU Bergakademie Freiberg, Institute of Materials Engineering) Claudia Eilers, Lutz Krüger, Stephan Reichelt, Rudolf Kawalla	*ORAL* **MECHANICAL STABILITY OF MULTILAYERED NANOWIRES** **Jean Grilhé** (Institut Pprime) Jérôme Colin, Alain Cimetière	*ORAL* **TEMPERATURE-DEPENDENT FREE FORMATION ENERGIES OF Y, TI AND O IN BCC FE: A FIRST PRINCIPLES STUDY** **Devaraj Murali** (Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research) Matthias Posselt	*ORAL* **AB-INITIO MODELLING OF METAL BOROHYDRIDES AS HYDROGEN STORAGE MATERIALS** **Bartolomeo Civalleri** (Department of Chemistry - University of Torino) Elisa Albanese, Marta Corno, Piero Ugliengo, Marcello Baricco	*ORAL* **STRUCTURE OF MEMBRANES FOR FUEL CELLS: SANS AND SAXS ANALYSES OF SULFONATED PEEK MEMBRANES** **Gérard Gebel** (SPrAM)
16:40	*ORAL* **DEFORMATION BEHAVIOUR OF AND DEFORMATION-INDUCED INTERMIXING IN A CU-V-NANOLAMINATE STUDIED BY ATOM PROBE TOMOGRAPHY** **Eric A. Jägle** (Max-Planck-Institut für Eisenforschung GmbH) Darius Tytko, Sandra Korte, Pyuck-Pa Choi, Dierk Raabe	*ORAL* **AN XFEM IMPLEMENTATION FOR MASSIVELY PARALLEL SIMULATIONS OF COMPOSITES FRACTURE** **Guillermo Vigueras** (IMDEA Materials) C. Cristobal Samaniego-Alvarado, Eva Casoni, Guillaume Houzeaux, Federico Sket, Jon Molina-Aldareguia, Ahmed Makradi, Mariano Vázquez, Antoine Jérusalem	*ORAL* **MULTISCALE MODELING OF DEFORMATION OF POLYCRYSTALLINE NANOSTRUCTURED TI** **Javier Llorca** (Polytechnic University of Madrid, IMDEA Materials Institute) Javier Segurado, Alvaro Ridruejo	*ORAL* **MOS2 AS EFFICIENT PHOTOCATALYST** **Wei Luo** (Uppsala University)	*ORAL* **MICROSTRUCTURAL EVOLUTION OF MICROWAVE HYBRID SINTERED LA9.33SI2GE4O26 FOR IT-SOFC ELECTROLYTES** **Bruno Trindade** (CEMUC, Mechanical Engineering Department, University of Coimbra) Fernando Oliveira, Teresa Marcelo, Márcio Santos, Cátia Alves, João Mascarenhas

MONDAY 9 SEPTEMBER 2013 / PM2

Symposium	A2I	A3II	B1I	B1II
Room	La Pinta	Giralda	Alamillo	Andalucía 5
Session Title	Magnetization Reversal	Applications	Nanostructured Bainitic steels	Metallic Glasses and their Composites III
Chairperson	Volker Neu	M. Bruna	I. Gutierrez-Urrutia	Gerhard Wilde
17:30	*INVITED / KEYNOTE* **EFFECT OF INTERFACE STATE ON THE COERCIVITY IN ND-FE-B MAGNETS** **Hiroaki Kato** (Graduate School of Science and Engineering) Yamagata University, Yuya Ishikawa, Tomoyuki Kikuchi, Daisuke Ogawa, Kunihiro Koike	*INVITED / KEYNOTE* **OPTOELECTRONIC DEVICES BASED ON GRAPHENE AND MOS2** **Ravi Shankar Sundaram** (University of Cambridge) Antonio Lombardo, Michael Engel, Anna Eiden, Ugo Sassi, Ralf Krupke, Phaedon Avouris, Mathias Steiner, Andrea Ferrari	*HIGHLIGHT* **CARBON IN CUBIC AND TETRAGONAL FERRITE** **Harry Bhadeshia** (University of Cambridge)	*HIGHLIGHT* **UNDERSTANDING OF LOCAL STRAIN AND MAGNETIZATION OF FE-CO-B-SI-NB-CR BMGS** **Ki Buem Kim** (Department of Advanced Materials Engineering, Sejong University)
17:50			*ORAL* **NANOSTRUCTURED BAINITE PHASE TRANSFORMATION IN STEEL** **Hossein Beladi** (Deakin University) I Timokhina, K Rakha, X Xiong, K Liss, S Kabra, D Raabe, P Hodgson	*ORAL* **DEFORMATION AND FRACTURE BEHAVIOUR OF COLD-ROLLED ZR52.5TI5CU18NI14.5AL10 BULK METALLIC GLASS** **Sergio Scudino** (IFW Dresden, Institut für Komplexe Materialien, Germany) Hamed Shakur Shahabi, Mihai Stoica, Konda G. Prashanth, Uta Kühn, Jürgen Eckert
18:10	*ORAL* **O K-EDGE XAS AND XMCD STUDY OF THE FERROMAGNETIC BEHAVIOUR IN ZNO NANOPARTICLES AND THIN FILMS** **Clara Guglieri** (Instituto de Ciencia de Materiales de Aragon, CSIC-Universidad de Zaragoza) M. Ángeles Laguna-Marco, Miguel Angel García, Noemi Carmona, Eva Céspedes, Mar García-Hernández, Ana Espinosa, Jesús Chaboy	*ORAL* **GRAPHENE NANORRIBBONS BLENDS WITH P3HT: TOWARDS ENHANCED DEVICE PERFORMANCE** **Mirella El Gemayel (**Nanochemistry Laboratory, ISIS & icFRC, Université de Strasbourg & CNRS, Strasbourg, France) Akimitsu Narita, Ravi Shankar Sundaram, Andrea C. Ferrari, Emanuele Orgiu, Xinliang Feng, Klaus Müllen, Paolo Samorì	*ORAL* **UNDERSTANDING TENSILE PROPERTIES OF HIGH SI NANO BAINITIC STEEL** **Carlos García-Mateo** (CENIM-CSIC) Francisca G. Caballero, Thomas Sourmail, Matthias Kuntz, Juan Cornide, Veronique Smanio, Roberto Elvira	*ORAL* **INFLUENCE OF FREE VOLUME CHANGES AND RESIDUAL STRESSES ON DEFORMATION AND HARDNESS OF COLD-ROLLED ZR-BASED BULK METALLIC GLASSES** **Moritz Stolpe** (Chair of Metallic Materials) Saarland University, Jamie J. Kruzic, Ralf Busch
18:30	*ORAL* **ROLE OF MORPHOLOGY ON THE LARGE EXCHANGE BIAS EFFECT OBSERVED IN CORE/SHELL (CO80NI20/COO) ANISOTROPIC NANO-OBJECTS** **Silvana Mercone** (Lspm) Nassima Ouar, Fatih Zighem, Frédéric Schoenstein, Samir Farhat, Brigitte Leridon, Noureddine Jouini	*ORAL* **GRAPHENE DERIVATIVES FOR ORGANIC OPTOELECTRONICS** **Giulia Tregnago** (University College London) Christoph Salzmann, Emanuele Treossi, Vincenzo Palermo, Franco Cacialli	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF ALUMINUM CONTAINING BAINITIC BEARING STEELS** **Fucheng Zhang** (State Key Laboratory of Metastable Materials Science and Technology, Yanshan University) Zhinan Yang, Tiansheng Wang, Jing Zhao	*ORAL* **RELATIONSHIP BETWEEN ATOMIC STRUCTURE AND MECHANICAL PROPERTIES OF CUZR AND CUZRAL BULK METALLIC GLASSES** **Ivan Kaban** (TU Dresden, Institute of Materials Science, Dresden, Germany) Pal Jovari, Benjamin Escher, Brigitte Beuneu, Mihai Stoica, Norbert Mattern, Jürgen Eckert
18:50	*ORAL* **TIP-INDUCED ARTIFACTS ON MFM IMAGES** **Óscar Iglesias-Freire** (ICMM-CSIC) Jeffrey R. Bates, Yoichi Miyahara, Agustina Asenjo Barahona, Peter H. Grütter	*ORAL* **WORK FUNCTION MODULATION OF INDIUM TIN OXIDE BY GRAPHENE AND NANOTUBE LAYERS** **Francesco Bausi** (University College of London) Giulia Privitera, Francesco Bonaccorso, Andrea Ferrari, Franco Cacialli	*ORAL* **LOW TEMPERATURE NANOSTRUCTURED BAINITE : WEAR AND FATIGUE PERFORMANCES** **Thomas Sourmail** (Ascometal CREAS) Francisca García Caballero, Carlos García-Mateo, Véronique Smanio, Christof Ziegler, Matthias Kuntz, Roberto Elvira, Alejandro Leiro	*ORAL* **HIGH PRESSURE STRUCTURE OF ZR-CU METALLIC GLASS STUDIED BY MEANS OF X-RAY ABSORPTION FINE STRUCTURE** **Jerzy Antonowicz** (Faculty of Physics, Warsaw University of Technology) Anna Pietnoczka, Reza Yavari, Alexandra Lagogianni, Giorgos Evangelakis, Olivier Mathon, Innokenty Kantor, Sakura Pascarelli
19:10	*HIGHLIGHT* **STRUCTURAL AND MAGNETIC PROPERTIES OF AS-DEPOSITED AND ANNEALED COFE AND COFECU NANOWIRES** **Cristina Bran** (Institute of Materials Science of Madrid, CSIC) Rafael Pérez del Real, Agustina Asenjo, Manuel Vázquez	*ORAL* **RECENT DE VELOPMENTS FROM THE CARBON MATERIALS INNOVATION CENTER (CMIC) AT BASF** **Andrew Strudwick** (Basf) Matthias Schwab, Hermann Sachdev, Klaus Muellen	*ORAL* **NATURE AND MODELLING OF THE STRAIN-HARDENING OF HIGH STRENGTH NANOSTRUCTURED CARBIDE-FREE BAINITIC STEELS** **Jean-Christophe Hell** (Arcelormittal Maizières Research) Allain Sébastien, Bouaziz Olivier	*ORAL* **EFFECT OF GEOMETRICAL CONSTRAINT CONDITION ON THE FORMATION OF NANO-SCALE TWINS IN THE NI-BASED METALLIC GLASS COMPOSITE** **Min Ha Lee** (Korea Institute of Industrial Technology)

MONDAY 9 SEPTEMBER 2013 / PM2

Symposium	B1III	B1IV	B2I	B4III
Room	España 5	España 3	Macarena	Andalucía 3
Session Title	Silicides and Complex Alloys	Microstructure & Nanoclusters I	Functional ceramics and non oxides	Steel- and Al- matrix composites
Chairperson	Inoui H.	Mercedes Hernandez Mayoral	Tony Lusiola	T.W. Clyne
17:30	*HIGHLIGHT* **NIOBIUM SILICI DE BASED ALLOYS BREAKTHROUGHS, OPPORTUNITIES AND CHALLENGES** **Panos Tsakiropoulos** (The University of Sheffield)	*ORAL* **ON MORPHOLOGICAL ANISOTROPY AND TEXTURE IN A FERRITIC ODS STEEL : FROM THE AS-MILLED POWDER TO THE EXTRUDED MATERIAL.** **Nicolas Sallez** (CNRS - SIMaP) Patricia Donnadieu, Eglantine Courtois-Manara, de phine Chassaing, Christian Kübel, Frederic de labrouille, Martine Blat, Yann de Carlan, Yves Brechet	*ORAL* **PHASE FORMATION AND FERROELECTRIC PROPERTIES OF THE CERAMIC POTASSIUM SODIUM NIOBATE-BASED SOLID SOLUTIONS** **Ekaterina Politova** (Karpov Institute of Physical Chemistry) Galina Kaleva, Alexander Mosunov, Sergey Stefanivich	*ORAL* **INTERFACE STRUCTURE AND CHEMISTRY IN A NOVEL STEEL-BASED COMPOSITE FE-TIB2 OBTAINED BY EUTECTIC SOLIDIFICATION** **Sylvie Lartigue-Korinek** (Icmpe, Thiais) Limei Cha, Nadia Haneche, Michael Walls, Julie Bourgon, Léo Mazerolles, Frédéric Bonnet
17:50	*ORAL* **DISLOCATIONS IN TRANSITION METAL DISILICIDES** **Vaclav Paidar** (Institute of Physics AS CR)	*ORAL* **INVESTIGATION OF ODS STEELS NANOPARTICLES BY COUPLING HRTEM AND ATOM PROBE TOMOGRAPHY** **Constantinos Hatzoglou** (Groupe de Physique des Matériaux (GPM) UMR CNRS 6634) Bertrand Radiguet, Auriane Etienne, Cecile Genevois, Fabien Cuvilly, Philippe Pareige	*ORAL* **DIELECTRIC PROPERTIES OF HOT-PRESSED BIFEO3-PVDF COMPOSITE FILMS** **Ewa Markiewicz** (Institute of Molecular Physics Polish Academy of Sciences) Katarzyna Chybczynska, Bartlomiej Andrzejewski	*ORAL* **MECHANICAL BEHAVIOR AND DAMAGE OF A NEW STEEL MATRIX COMPOSITE (FE-TIB2)** **Zehoua Hamouche** (P-2AM- Cnam) Eva Héripré, Katell de rrien, Olivier Zanellato, Jean-Pierre Chevalier
18:10	*ORAL* **EFFECT OF GERMANIUM ON HIGH TEMPERATURE OXIDATION OF CR-CR3SI ALLOY** **Ali Soleimani-Dorcheh** (DECHEMA Forschungsinstitut) Mathias C. Galetz, Michael Schütze	*ORAL* **TOMOGRAPHIC ATOM PROBE STUDY OF NANOSTRUCTURE IN 13.5% CR ODS ALLOYS** **Sergey Rogozhkin** (SSC RF Institute for Theoretical and Experimental Physics) Andrey Aleev, Rainer Lindau, Anton Möslang, Alexander Nikitin, Nikolay Orlov, Pavel Vladimirov, Alexander Zaluzhnyi	*ORAL* **HIGH TEMPERATURE MECHANICAL PROPERTIES OF FULLY DENSE BORON-CARBI DE POLYCRYSTALS PROCESSED BY SPARK PLASMA SINTERING (SPS), B** **Malmal Moshtaghioun** (University of Seville, Dpto. Física Materia Condensada) Miguel Castillo- Rodríguez, Diego Gómez-García, Arturo Domínguez-Rodríguez	*ORAL* **IN-SITU AL15FE3SI2/AL-SI-CU COMPOSITES FOR AUTOMOTIVE APPLICATIONS,** **Olga Zak** (Clausthal University of Technology) Babette Tonn
18:30	*ORAL* **MECHANICAL BEHAVIOUR OF MICRO-ALLOYED MOLYBDENUM DISILICI DE – INSIGHTS FROM NANOMECHANICAL TESTING** **Carolin Puscholt** (Department of Materials Science and Engineering, Institute I, University Erlangen-Nürnberg) Steffen Neumeier, Mathias Göken, Sandra Korte	*ORAL* **INFLUENCE OF NANOCLUSTERS ON THERMAL STABILITY AND MECHANICAL BEHAVIOR OF FERRITIC ODS-STEELS,** **Daniel Schliephake** (Karlsruhe Institute of Technology) Daniel Janda, Thangaraju Shanmugasundaram, Enrico Bruder, Martin Heilmaier	*ORAL* **DISLOCATION MICROSTRUCTURE OF 4H-SIC DEFORMED BY BASAL SLIP. 3C BANDS NUCLEATION AND DIPOLAR CONFIGURATIONS** **Miguel Castillo-Rodríguez** (Instituto de Ciencia de Materiales de Sevilla, CSIC-Universidad de Sevilla) Antonio Muñoz-Bernabé, Ana María Lara Bocanegra, Arturo Domínguez-Rodríguez	*ORAL* **STUDY ON THE INFLUENCE OF OPERATIONAL VARIABLES IN THE MICROSTRUCTURE AND MECHANICAL PROPERTIES OF AN AL-MMC PRODUCED BY A MODIFIED RHEOCASTING PROCESS** **Claudia Carrasco** (Materials Engineering Department, Universidad de Concepción, Chile) Orlando Prat, Flavio Soldera, Sebastian Suárez
18:50	*ORAL* **ELEMENTAL PARTITIONING AND LATTICE SITE OCCUPANCIES IN CO-BASED SUPERALLOYS HARDENED WITH GAMMA'-CO3(AL,W) PHASE** **Ivan Povstugar** (Max-Planck-Institut Für Eisenforschung) Steffen Neumeier, Christopher Zenk, Pyuck-Pa Choi, Dierk Raabe	*ORAL* **EFFECT OF NANO-SCALE PRECIPITATION ON STRENGTHENING OF FERRITIC ODS FE-CR-AL ALLOY** **Carlos Capdevila-Montes** (Centro Nacional Investigaciones Metalurgicas (CENIM-CSIC), Spain) Jesús Chao, José Antonio Jiménez, Michael K. Miller	*ORAL* **ULTRAFAST ELECTRIC DISCHARGE ASSISTED MECHANICAL MILLING METHOD [EDAMM] FOR SYNTHESIS AND PROCESSING OF COMPLEX CERAMIC MATERIALS.** **Andrzej Calka** (University of Wollongong)	*ORAL* **EFFECT OF CHEMICAL COMPOSITION ON THE MICROSTRUCTURE AND MECHANICAL PROPERTIES OF A CAST AL6MN/AL IN-SITU COMPOSITE FOR HIGH TEMPERATURE APPLICATIONS** **Hennadiy Zak** (Clausthal University of Technology) Babette Tonn
19:10	EMPTY SLOT	*ORAL* **THE SENSITIVITY OF THERMOELECTRIC POWER TO THE ALPHA-ALPHA' SEPARATION IN CR-RICH ODS STEELS,** **Malki Pinkas** (Nuclear Research Center - Negev) Zvi Foxman, Peter Haenher, Louisa Meshi	*ORAL* **STUDY OF POROSITY ON CBPC MORTARS FORMULATED WITH LOW-GRADE MAGNESIUM OXIDE AS A FUNCTION OF THE AMOUNT OF ADMIXTURE AND SETTING CONDITIONS,** **Joan Formosa** (Universidad Politécnica de Catalunya) Josép María Chimenos, Ricardo del Valle Zermeño, María Niubó, Laia Haurie	EMPTY SLOT

MONDAY 9 SEPTEMBER 2013 / PM2

Symposium	C1I	C1II	C2II	C4I
Room	España 1	Sevilla 3	Andalucía 8	Sevilla 2
Session Title	Dendritic Structures	Phase transformations in Ti alloys	Interface design III	Protective Coatings and Thin Films III
Chairperson	Sabine Bottin-Rousseau	M. Dehmas	George Kaptay	H. Pedersen
17:30	*ORAL* **DENDRITIC GROWTH MORPHOLOGIES IN AL-ZN ALLOYS: A DETAILED STUDY COMBINING X-RAY TOMOGRAPHIC MICROSCOPY AND PHASE FIELD MODELING** **Paolo Di Napoli** (LSMX Laboratory, EPFL, Lausanne (CH)) Jonathan Friedli, Fife Julie Louise, Dantzig Jonathan, Rappaz Michel	*INVITED / KEYNOTE* **NEW TITANIUM ALLOYS WITH A COMBINATION OF HIGH STRENGTH, STRAIN HARDENING AND HIGH DUCTILITY, INDUCED BY TRIP AND TWIP EFFECTS** **Frédéric Prima** (Ecole Nationale supérieure de Chimie de Paris) Fan Sun, Jinyong Shang, Matthieu Marteleur, Muriel Veron, Edgar Rauch, Caroline Curfs, Thierry Gloriant, Philippe Vermaut, Pascal Jacques	*INVITED / KEYNOTE* **GROWTH MECHANISMS OF METAL NANOWHISKER ON STRUCTURED SUBSTRATES SURFACES.** **Gunther Richter** (MPI for Intelligent Systems) Lisa Weissmayer, Horst Strunk	*ORAL* **A NOVEL CHARACTERIZATION METHOD FOR ESTIMATION OF PHASE TRANSFER TEMPERATURES OF NITI SHAPE MEMORY THIN FILMS** **Soroush Momeni** (Institute of Material Engineering, TU Dortmund) Wolfgang Tillmann, Fabian Hoffmann, Reiner Zielke, Normann Sievers
17:50	*ORAL* **RAPID DENDRITIC GROWTH IN UNDERCOOLED CO-CU MELTS** **Peter Galenko** (Friedrich-Schiller-Universität) Georg Ehlen, Eugen Davidoff, Dieter Herlach			*ORAL* **CHARACTER OF THE EXPANDED AUSTENITE ON NITRIDED NI-TI ALLOY** **Matej Fonovic** (Max Planck for Intelligent Systems, Stuttgart, Germany) Andreas Leineweber, Eric Jägle, Eric Mittemeijer
18:10	*ORAL* **CHANGING SOLIDIFICATION PROCESSES WITH THERMOELECTRIC MAGNETO-HYDRODYNAMICS** **Koulis Pericleous** (University of Greenwich) Andrew Kao, Peter Lee	*ORAL* **MICROSTRUCTURE FORMATION IN SEVERAL ALPHA + BETA AND BETA METASTABLE TITANIUM ALLOYS ASSOCIATED WITH SOLID PHASE TRANSFORMATION** **Elisabeth Aeby-Gautier** (Institut Jean Lamour Universite Lorraine-CNRS) Benoit Appolaire, Moukrane Dehmas	*ORAL* **MOLECULAR DYNAMICS OF MELTING PHENOMENA IN AG, CU, AG/ALN AND CU/ALN NANOLAYERS** **S. Brodacka** (M. Smoluchowski Institute of Physics, Jagiellonian University in Krakow, Poland) D. Passerone, C. Pignedoli, A. Antusek, G.Pigozzi, L. Jeurgens, J.Janczak-Rusch, R. Kozubski	*ORAL* **EFFECTS OF COPPER ON THE MICROSTRUCTURAL AND TRIBOLOGICAL PROPERTIES OF NITI-BASED THIN FILMS** **Mauro Callisti** (National Centre for Advanced Tribology (NCATS) University of Southampton) Brian G. Mellor, Tomas Polcar
18:30	*ORAL* **NUMERICAL MODELLING OF STRUCTURE AND SEGREGATION IN AL-7WT%SI ALLOYS DIRECTIONALLY SOLIDIFIED UNDER MICROGRAVITY IN THE INTERNATIONAL SPACE STATION** **Dong Rong Liu** (Aix-Marseille University and CNRS, IM2NP,France) Nathalie Mangelinck-Noël, Charles-André Gandin, Gerhard Zimmermann, Laszlo Sturz, Henri Nguyen Thi, Bernard Billia	*ORAL* **X-RAY DIFFRACTION STUDY OF OMEGA NANOPARTICLES IN TIMETAL LCB SINGLE-CRYSTALS** **Jana Smilauerova** (Charles University) Vaclav Holy, Milos Janecek, Petr Harcuba	*ORAL* **SURFACE TENSION OF INDIUM-BASED ALLOYS** **Aslan Kashezhev** (Kh.M.Berbekov Kabardino-Balkarian State University) Ruslan Kutuev, Murat Ponegev, Viktor Sozaev	*ORAL* **N AND C DIFFUSION IN FE-N-C COMPOUND LAYERS** **Holger Göhring** (Max Planck Institute for Intelligent Systems (Formerly Max Planck Institute for Metals Research), Stuttgart, Germany) Andreas Leineweber, Eric J. Mittemeijer
18:50	*ORAL* **EXPERIMENTAL STUDY OF DIRECTIONALLY SOLIDIFIED ZN-AL DE NDRITES** **Alexandre Durussel** (LSMX-EPFL) Michel Rappaz	*ORAL* **INFLUENCE OF THE TRANSFORMATION TEMPERATURE ON THE MICROTEXTURE INDUCED BY ALPHA PHASE PRECIPITATION AT BETA/BETA GRAIN BOUNDARIES IN A BETA METASTABLE TITANIUM ALLOY** **Matthieu Salib** (Institut Jean Lamour)	*INVITED / KEYNOTE* **WETTING IN PROCESSING OF PHOTOVOLTAÏC QUALITY SI** **Nicolas Eustathopoulos**, (SIMAP,Grenoble-INP) Beatrice Drevet, Denis Camel Camel	*ORAL* **CHARACTERIZATION OF THIN GRAPHITE COATINGS DEPOSITED ON STEEL BY LASER-INDUCED PLASMA FORMATION** **Evgeny Kharanzhevskiy** (Udmurt State University) Alexey Ipatov
19:10	*ORAL* **DENDRITIC NEEDLE NETWORK MODEL FOR ALLOY SOLIDIFICATION** **Damien Tourret** (Northeastern University - Physics) Alain Karma	*ORAL* **AB INITIO BASED THERMODYNAMICS OF AND PHASE TRANSFORMATIONS IN TI ALLOYS** **Blazej Grabowski** (Max-Planck-Institut Fur Eisenforschung) Liangfeng Huang, Dominique Korbmacher, Albert Glensk, Tilmann Hickel, Jörg Neugebauer		**EMPTY SLOT**

MONDAY 9 SEPTEMBER 2013 / PM2

Symposium	C4II	D1III	D1IV	D1V
Room	Andalucía 7	España 4	Andalucía 1	Andalucía 2
Session Title	Plasma based deposition of organic and inorganic thin films	Instrumentation in Tomography	Neutron and X-ray Diffraction and Imaging for Materials Scienceand Engineering III	Advanced Electron and Ion Microscopy Methods in Materials Characterization III
Chairperson	Strunkus T.	Timm Weitkamp	Steven Peetermans	Beata Dubiel
17:30	*ORAL* **CHARACTERIZATION OF SILICON BASED MONO- AND MULTI-LAYERS DEPOSITED ON POLYMER SUBSTRATES FOR IMPROVED BARRIER PROPERTIES** **Romina Charifou** (IMP@Lyon1, UMR CNRS 5223) Eliane Espuche, Fabrice Gouanvé, Laurent Dubost, Pierre-Luc Bouchet, Benoît Monaco	*HIGHLIGHT* **DEVELOPMENT OF HIGH SPATIAL RESOLUTION X-RAY MICRO-TOMOGRAPHY SYSTEM** **Kentaro Uesugi** (Japan Synchrotron Radiation Research Institute) Akihisa Takeuchi, Yoshio Suzuki	*ORAL* **POLYCRYSTAL MICROSTRUCTURE AND STRAIN IN 3D: RECENT ADVANCES IN HIGH ENERGY TRANSMISSION LAUE (HETL) MICRO-DIFFRACTION TECHNIQUES** **Felix Hofmann** (Department of Engineering Science, University of Oxford, Oxford, UK) Leigh Connor, Alexander M. Korsunsky	*ORAL* **3D RECONSTRUCTION OF WIDE FIELD SECTIONS OBTAINED BY SERIAL SECTIONING. APPLICATION TO CREEP VOIDS** **Ramin Abbasi** (Ecole des Mines de Saint Etienne) Krzystof Dzieciol, Andras Borbely
17:50	*ORAL* **METAL DOPED DIAMOND-LIKE CARBON FILMS AS COATINGS FOR METALLIC BIPOLAR PLATES IN REDOX FLOW BATTERIES** **Justin Richards** (Fraunhofer Institute for Chemical Technology, Wolfsburg) Kerstin Schmidt, Peter Fischer, Jens Tübke	*ORAL* **A BEAMLINE UPGRA DE TO ENHANCE HIGH-SPEED MICROTOMOGRAPHY WITH POLYCHROMATIC HARD X-RAY SYNCHROTRON RADIATION** **Elodie Boller** (Esrf) Paul Tafforeau, Alexander Rack, Michel Renier, Pascal Bernard, Pierre Lhuissier, Luc Salvo	*ORAL* **IN-SITU MULTI-AXIAL MECHANICAL TESTING AT POLDI@PSI** **Julia Repper** (Paul Scherrer Institut, Materials Science and Simulation,Villigen PSI, Switzerland) Markus Niffenegger, Steven Van Petegem, Werner Wagner, Helena Van Swygenhoven	*ORAL* **CHARACTERIZATION AND OPTIMIZATION OF NANOPOROUS CARBON STRUCTURES BASED ON FIB-SEM NANOTOMOGRAPHY** **Torben Prill** (Fraunhofer ITWM, Katja Schladitz) Dominique Jeulin, Matthieu Faessel
18:10	*ORAL* **ONLINE DEPOSITION OF ORGANIC-INORGANIC THIN FILM ON WIRES BY ATMOPHERIC PRESSURE DIELECTRIC BARRIER DISCHARGE** **Patrick Choquet** (Centre de Recherche Public Gabriel Lippmann) Rémy Maurau, Cédric Vandenabeele, Mathieu Gérard	*ORAL* **CHARACTERIZATION AND APPLICATION OF AN ULTRA-HIGH RESOLUTION LAMINOGRAPHY SYSTEM** **Charlotte Rimbach** (Chair of X-Ray Microscopy, University Würzburg) Thomas Ebensperger, Simon Zabler, Randolf Hanke	*ORAL* **LAUE SIMULATION FROM 3D DISCRETE DISLOCATION DYNAMIC MODELING - APPLICATION TO MICRO-PILLAR COMPRESSION AND TOPOGRAPHY** **Christophe Le Bourlot** (Materials Science and Simulation, Paul Scherrer Institut (PSI)) Villigen, Switzerland, Cécile Marichal, Steven Peetermans, Steven Van Petegem, Jochen Senger, Daniel Weygand, Helena Van Swygenhoven	*ORAL* **3D EDS MICROANALYSIS BY FIB/SEM: IMPROVED DATA PROCESSING APPLIED TO NI-BASED SUPERALLOY** **Stephen Croxall** (Department of Materials Science and Metallurgy, University of Cambridge) Pierre Burdet, Paul Midgley
18:30	*ORAL* **THERMAL REVERSIBLE ADHESION SURFACES BY COMBINING ATMOSPHERIC PRESSURE PLASMA COPOLYMERIZATION AND GAS PHASE REACTIONS FOR REVERSIBLE ADHESION** **Maryline Moreno** (Centre de Recherche Public Gabriel Lippmann) Anton Manakhov, Patrick Choquet, Jean-Jacques Pireaux	*ORAL* **X-RAY TOMOGRAPHY FOR (NOT ONLY) MATERIALS PROCESSING AT DIAMOND BEAMLINE I12-JEEP** **Robert Atwood** (Diamond Light Source) Thomas Connolley, Christina Reinhard, Michael Hart, Michael Drakopoulos	*ORAL* **THREE LAWS OF SUBSTRUCTURE DEVELOPMENT IN DEFORMED METAL MATERIALS** **Yuriy Perlovich**, (National Research Nuclear University) Margarita Isaenkova, Vladimir Fesenko	*ORAL* **PHASE CHARACTERISATION OF AL ALLOYS USED FOR LASER ALLOYING** **Miroslawa Pawlyta**, (Silesian University of Technology) Krzysztof Labisz, Tomasz Tański
18:50	*ORAL* **COLORIMETRIC GAS SENSING SURFACES - DE POSITION OF PORPHYRIN CONTAINING COMPOSITE FILMS VIA AP-DBD ENHANCED CVD** **Philip Heier** (Centre de Recherche Public - Gabriel Lippmann, Luxembourg) Torsten Bohn, Nicolas D. Boscher, Katja Heinze, Patrick Choquet	*ORAL* **LARGE-AREA MEDIPIX3 DE TECTOR FOR ENERGY-RESOLVED PHASE-CONTRAST IMAGING USED IN MATERIAL SCIENCE** **Michael Epple** (Technische Universität München) Guillaume Potdevin, David Pennicard, Sebastian Ehn, Dieter Renker, Heinz Graafsma, Franz Pfeiffer	*ORAL* **STUDY OF THREADING DISLOCATION DENSITY REDUCTION IN ALGAN EPILAYERS BY MONTE-CARLO SIMULATION OF HIGH RESOLUTION RECIPROCAL SPACE MAPS OF A TWO LAYER SYSTEM** **Sondes Bauer** (Karlsruhe Institute of Technology (KIT), Synchrotron Radiation Facility ANKA) Sergey Lazarev, Mike Barchuk, Kamran Forghani, Vaclav Holý, Ferdinand Scholz, Tilo Baumbach	EMPTY SLOT
19:10	*ORAL* **SIO2 FILM GROWTH FROM HE\HMDSO(\ O2) PLASMAS AT ATMOSPHERIC PRESSURE: MULTI-SOURCE ROTATING SUBSTRATE CONCEPT FOR STUDY OF SURFACE REACTIONS** **Katja Rügner** (Ruhr-Universität Bochum, Research Department With Complex Interaction) Rüdiger Reuter, Dirk Ellerweg, Achim von Keudell, Jan Benedikt	*ORAL* **SIMULTANEOUS MEASUREMENT OF PHASE AND ABSORPTION CONTRAST THREE-DIMENSIONAL IMAGING BY USING SCANNING-IMAGING X-RAY MICROSCOPE** **Akihisa Takeuchi** (Japan Synchrotro Radiation Research Institute (JASRI)/ SPring-8) Yoshio Suzuki, Kentaro Uesugi	*ORAL* **SIGNATURE OF DEFECTS IN NANOCRYSTALS IN COHERENT X-RAY DIFFRACTION PATTERNS** **Maxime Dupraz**, (SIMaP) Guillaume Beutier, Simon Langlais, David Rodney, Marc Verdier	*ORAL* **MICROSTRUCTURE CHARACTERISTICS OF COMPOSITE MATERIALS USED TO PRODUCE OF COMPRESSOR PISTONS** **Maciej Dyzia** (Silesian University of Technology) Anna J. Dolata

MONDAY 9 SEPTEMBER 2013 / PM2

Symposium	D2I	D2III	D3II	D3IV	E1III
Room	Sevilla 1	Andalucía 6	Cartuja	Andalucía 4	España 2
Session Title	Nanostructured metals III	High Temperature Behavior of Thin Films	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior III	Materials Modeling for Energy Applications III	Fuel Cell Electrodes I
Chairperson	Jon Molina-Aldareguia	Megan Cordill and James Dean		T. Ichikawa	J. Santiso
17:30	*ORAL* **FOLLOWING DEFORMATION MECHANISMS IN NANOCRYSTALLINE NI AND PDAU USING IN SITU SYNCHROTRON TECHNIQUES** **Patric Gruber** (Karlsruhe Institute of Technology, Institute for Applied Materials, Germany) Jochen Lohmiller, Oliver Kraft, Christian Braun, Manuel Grewer, Rainer Birringer	*HIGHLIGHT* **HIGH TEMPERATURE MICRO-CANTILEVER TESTING** **David Armstrong** (Department of Materials, University of Oxford) Steve Roberts, Angus Wilkinson	*ORAL* **ESSENTIAL INFLUENCE OF OXYGEN CONTENT ON MECHANICAL PROPERTIES, CRYSTAL AND ELECTRONIC STRUCTURE OF HEXAGONAL TI -FIRST PRINCIPLES CALCULATIONS** **Piotr Kwasniak** (Warsaw University of Technology, Faculty of Materials Science and Engineering) Marek Muzyk, Halina Garbacz, Krzysztof Kurzydlowski	*INVITED / KEYNOTE* **IMPACT OF ATOMISTIC SIMULATIONS OF NANOSTRUCTURES FOR SUSTAINABLE ENERGY TECHNOLOGIES** **Gabriel Bester** (Max Planck Institute for Solid State Research)	*INVITED / KEYNOTE* **ELECTROCATALYST – MEMBRANE INTERFACE AND FUEL CELL PERFORMANCE WITH SULFONATED POLYETHERETHERKETONE AS IONOMER** **Rolf Hempelmann** (Saarland University) Dan Durnetat, Francesco Arena
17:50	*ORAL* **DEFORMATION MECHANISMS IN NANOCRYSTALLINE NICKEL STUDIED BY IN-SITU X-RAY DIFFRACTION** **Zhen Sun** (Materials Science and Simulations, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland) Steven Van Petegem, Karsten Durst, Philip Eisenlohr, Wolfgang Blum, Helena Van Swygenhoven	*ORAL* **TEMPERATURE-DEPENDENCE OF MULTILAYER THIN FILMS: PART I – EXPERIMENTAL CONSIDERATIONS AND FAILURE IN SOLDER MULTILAYERS** **Jeffrey M. Wheeler** (EMPA - Materials Science and Technology) Rejin Raghavan, Ivo Utke, Johann Michler	*ORAL* **PHASE FIELD MODEL FOR DISLOCATION CLIMB** **Pierre-Antoine Geslin** (LEM, Onera/CNRS) Benoît Appolaire, Alphonse Finel		
18:10	*ORAL* **INFLUENCE OF THE MICROSTRUCTURE ON THE ACTIVATION VOLUME AND STRAIN RATE SENSITIVITY OF NANOCRYSTALLINE AND ULTRA FINE GRAINED NICKEL** **Kerstin Schueler** (Universität des Saarlandes) Vera Marx, Bastian Philippi, Horst Vehoff	*ORAL* **TEMPERATURE-DEPENDENCE OF MULTILAYER THIN FILMS: PART II** **Rejin Raghavan** (EMPA, Material Science and Technology) Jeffrey Wheeler, Eluxka Almandoz, Gonzalo Fuentes, Daniel Esqué- de los Ojos, Johann Michler	*ORAL* **A COMBINED DIGITAL IMAGE CORRELATION – FINITE ELEMENT MODELLING APPROACH TO INVESTIGATE DAMAGE FORMATION IN DUAL PHASE STEELS** **Khaled Alharbi** (The University of Sheffield) Hassan Ghadbeigi, Mohammad Zanganeh, Christophe Pinna	*INVITED / KEYNOTE* **NANO TECHNOLOGY FOR ENERGY TECHNOLOGY APPLICATION** **Tae Won Kang** (Dongguk University)	*ORAL* **ANODE-SUPPORTED SINGLE-CHAMBER SOFC FOR ENERGY RECOVERY FROM EXHAUST GASES OF THERMAL ENGINES** **Pauline Briault** (Ecole Nationale Supérieure des Mines, SPIN-EMSE) Jean-Paul Viricelle, Mathil de Rieu, Richard Laucournet, Bertrand Morel
18:30	*ORAL* **STRAIN RATE JUMP AND LOAD RELAXATION TESTS ON NANOCRYSTALLINE NI AS A FUNCTION OF TEMPERATURE** **Gaurav Mohanty** (EMPA - Swiss Federal Laboratories for Materials Science and Technology) Jeffrey Wheeler, Rejin Raghavan, Laetitia Philippe, Johann Michler	*ORAL* **EFFECT OF INTERFACE PROPERTIES ON THE COMPRESSIVE BEHAVIOUR OF AL/SIC NANOLAMINATES AT HIGH TEMPERATURE** **Saeid Lotfian** (IMDEA-Materials Institute) Marcos Rodríguez, Huxiao Xie, Carl Mayer, Nikhilesh Chawla, Javier LLorca, Amit Misra, Jon Molina	*ORAL* **MOBILITY AND DIFFUSION COEFFICIENT OF CHARGE CARRIERS IN ORGANIC LAYERS FOR OLEDS: MONTE- CARLO AND ANALYTIC MODELING** **Vladimir Nikitenko** (National Research Nuclear University) Nataliya Sannikova, Vasily Sukharev, Mikhail Strikhanov		*ORAL* **OPTIMIZATION OF PERFLUOROSULPHONIC IONOMER AMOUNT IN GAS DIFFUSION ELECTRODES FOR PEMFC OPERATION UNDER AUTOMOTIVE CONDITIONS** **Irene Gatto** (CNR ITAE Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano") Alessandro Stassi, Vincenzo Baglio, Alessandra Carbone, Enza Passalacqua, Antonino Salvatore Aricò, Michael Schuster, Bernd Bauer
18:50	*ORAL* **FATIGUE PROPERTIES OF NANOCRYSTALLINE NICKEL FILMS MA DE BY ELECTRODEPOSITION** **Keisuke Tanaka** (Department of Mechanical Engineering, Meijo University) Hirohisa Kimachi	*ORAL* **EFFECT OF TEMPERATURE ON DEFORMATION BEHAVIOR OF AL-LI THIN FILM ALLOY SPUTTER-DEPOSITED ON KAPTON SUBSTRATE** **Alla S. Sologubenko** (Laboratory for Nanometallurgy, Department of Materials, ETH Zürich) Thomas B. Mitchell-Williams, Raph Spolenak	EMPTY SLOT	*ORAL* **MORE EFFICIENT PHOTOVOLTAIC MATERIALS BY METAL SUBSTITUTION IN SULPHIDES COMPOUNDS: THEORETICAL PREDICTIONS AND EXPERIMENTAL RESULTS** **Perla Wahnon** (Universidad Politecnica de Madrid) Pablo Palacios, Yohanna Seminovski, Raquel Lucena, José Carlos Conesa	*ORAL* **EIS STUDIES ON ALTERNATIVE LA(1-X)SRXFEYCO(1-Y)O3-D CATHODES FOR INTERMEDIATE TEMPERATURE SOFC** **Claudia Paoletti** (ENEA, C.R. Casaccia) Elisabetta Simonetti, Fabrizio Puleo, L.F. Liotta
19:10	*ORAL* **THE INFLUENCE OF MICRO NOTCHES ON THE MECHANICAL PROPERTIES OF CP-TITANIUM** **Claudia Godard** (Working Group of Materials Testing, University of Kaiserslautern) Eberhard Kerscher	*ORAL* **EFFECT OF HIGH TEMPERATURE CYCLE FREQUENCY AND THERMO-MECHANICAL CONDITION ON THE ADHERENCE OF THERMAL-GROWN OXIDE FOR THE MC2/NICOCRALYTA SYSTEM** **Frédéric Adamski** (Centre des Matériaux, Mines ParisTech, France) Vincent Maurel, Alain Köster, Luc Rémy, Elisabeth Ostojo-Kuczynski	EMPTY SLOT	*ORAL* **UNRAVELING THE COMPLEX PROPERTIES OF TRANSITION METAL OLIVINE PHOSPHATES AS CATHO DE MATERIALS** **Monica Kosa** (Bar Ilan University, Department of Chemistry Alina Osnis, Doron Aurbach, Dan Major	*ORAL* **PT SUPPORTED ON MODIFIED MWCNTS AS ELECTROCATALYSTS FOR HIGH TEMPERATURE PEM FUEL CELLS** **Maria Daletou** (Institute of Chemical Engineering Sciences/Foundation for Research and Technology Hellas) Alin Orfanidi, Stylianos Neophytides

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TUESDAY 10 SEPTEMBER 2013 / AM2

Symposium	A2II	A3II	B1I	B1II
Room	La Pinta	Giralda	Alamillo	Andalucía 5
Session Title	Nanoparticles for magnetic hyperthermia and MRI applications	Growth and self-assembly	Phase-reversion Induced Nanograined and Ultra-fine Grained Steels	Metallic Glasses and their Composites IV
Chairperson	J. Rivas and O. Mykhaylyk	P. Collins	M. Santofimia	Jerzy Antonowicz
11:00	*INVITED / KEYNOTE* **STUDY OF HEATING EFFICIENCY AS FUNCTION OF CONCENTRATION, SIZE AND APPLIED FIELD IN GAMMA-FE2O3 NANOPARTICLES.** **Patricia de La Presa** (Instituto de Magnetismo Aplicado, UCM-ADIF-CSIC) Yurena Luengo, Marta Multigner, Rocio Costo, María del Puerto Morales, Guillermo Rivero, Antonio Hernando	*INVITED / KEYNOTE* **AEROGRAPHITE – A NEW NANOSTRUCTURED GRAPHITE BASED ON INTERCONNECTED GRAPHITE TUBES WITH EXCEPTIONAL SPECIFIC MECHANICAL AND PHYSICAL PROPERTIES** **Karl Schulte** (Hamburg University of Technology) Matthias Mecklenburg, Rainer Adelung, Arnim Schuchardt	*HIGHLIGHT* **NANOSCALE DEFORMATION BEHAVIOR OF PHASE-REVERSION INDUCED AUSTENITIC STAINLESS STEELS** **Devesh Misra** (University of Louisiana at Lafayette, USA) Pavan Venkatsurya, Mahesh Somani, Pentti Karjalainen	*HIGHLIGHT* **AL-NB BONDING PARTICULARITIES AND MICROSTRUCTURE OF CU-ZR BASED METALLIC GLASSES BY AB-INITIO CALCULATIONS** **Christina Lekka** (University of Ioannina) George Bokas, George Evangelakis
11:20			*ORAL* **NANOSCALE AUSTENITE REVERSION AT MARTENSITE GRAIN BOUNDARIES BY SEGREGATION ENGINEERING** **Dirk Ponge** (Max-Planck-Institut Für Eisenforschung GmbH) Stefanie Sandlöbes, Julio Millán, Hamid Assadi, Michael Herbig, Pyuck-Pa Choi, Meimei Wang, Dierk Raabe	*ORAL* **ALPHA- AND BETA-RELAXATIONS IN A PD42.5CU30NI7.5P20 BMG** **Osami Haruyama** (Tokyo University of Science) Ken Morita, Toshihiro Mottate
11:40	*ORAL* **PHYSICOCHEMICAL CHARACTERIZATION OF MNFE2O4 NANOPARTICLES FOR MAGNETIC HYPERTHERMIA PURPOSES** **Maria Paz Fernández García** (IFIMUP-IN, Dept. of Physics, University of Porto, Portugal) Gerardo F. Goya, Tânia Ribeiro, Clara Pereira, André Pereira, Cristina Freire, M.Ricardo Ibarra, João Pedro Araújo	*ORAL* **IN SITU RAMAN INVESTIGATIONS OF THE GROWTH MECHANISM OF CARBON NANOTUBES** **Vincent Jourdain** (Université Montpellier 2, Laboratoire Charles Coulomb UMR 5221) Hugo Navas, Matthieu Picher, Eric Anglaret, Raul Arenal, Etienne Quesnel	*ORAL* **MECHANICAL STABILITY OF NANO-SIZED REVERTED AUSTENITE IN A REVERSION TREATED MARTENSITIC STEEL DURING UNIAXIAL TENSILE TESTING** **Meimei Wang** (Max-Planck-Institut Für Eisenforschung GmbH) Dirk Ponge, Cem Tasan, Dierk Raabe	*ORAL* **PHASES DISTRIBUTION DEPENDENT STRENGTH IN METALLIC GLASS–ALUMINIUM COMPOSITES PREPARED BY SPARK PLASMA SINTERING** **Yannick Champion** (Cnrs-Icmpe) Loïc Perrière
12:00	*ORAL* **SYNTHESIS OF MONODISPERSE IRON CARBI DE NANOPARTICLES DISPLAYING TUNABLE MAGNETIC AND UNPRECEDENTED HYPERTHERMIA PROPERTIES** **Anca Meffre** (INSA Toulouse) Boubker Mehdaoui, Sebastien Lachaize, Julian Carrey, Pier Francesco Fazzini, Marc Respaud, Bruno Chaudret	*ORAL* **3D SELF-ASSEMBLY OF RAMIFIED SINGLE-WALLED CARBON NANOTUBES** **Brigitte Vigolo** (Institut Jean Lamour, Vandoeuvre-lès-Nancy) Emeline Remy, Alexandre Desforges, Claire Hérold, Fabrice Vlasaque, Jean-François Marêché, Sébastien Fontana, Sébastien Cahen, Jaafar Ghanbaja, Jérôme Gleize	*ORAL* **NANOSCALE INTERFACIAL AUSTENITE REVERSION THROUGH KINETIC FREEZING IN STAINLESS STEEL** **Lei Yuan** (Max-Planck-Institut Für Eisenforschung) Dirk Ponge, Dierk Raabe	*ORAL* **MAGNETOCALORIC COMPOSITES OF AMORPHOUS ALLOYS** **Anja Waske** (IFW Dresden, Institute of Complex Materials, Dresden) Maria Krautz, Mihai Stoica, Konstantin Skokov, Oliver Gutfleisch, Jürgen Eckert
12:20	*ORAL* **IMPROVING MAGNETIC HYPERTHERMIA EFFICIENCY BY EMPLOYING MAGNETOSOMES** **Konstantinos Simeonidis** (Department of Mechanical Engineering, School of Engineering, University of Thessaly, Greece) George Stefanou, María Perissi, Mavroidis Angelakeris, Maria-Luisa Fdez-Gubieda, Javier Alonso Masa, Alicia Muela	*ORAL* **SELF-ASSEMBLED CONDUCTIVE GRAPHENE THIN FILMS** **Kirill Arapov** (Eindhoven University of Technology) Heiner Friedrich, Gijbertus de With	*ORAL* **THE SUPERPLASTICITY EVALUATION OF A MN-SI-CR ALLOYED STEEL AT DIFFERENT MICROSTRUCTURAL AND DEFORMATION CONDITIONS** **Han Zhang** (Max-Planck-Institut Für Eisenforschung, Düsseldorf, Germany) Dirk Ponge, Dierk Raabe	*ORAL* **MICROSTRUCTURE AND PRIMARY CRYSTALLIZATION PROCESS OF THE AMORPHOUS RIBBONS AND MASSIVE SAMPLES OF THE TI-ZR-CU-PD ALLOYS** **Anna Sypien** (Polish Academy of Sciences, Institute of Metallurgy and Materials Science) Tomasz Czeppe, Lidia Lityńska-Dobrzyńska
12:40	*ORAL* **DENDRONIZED MAGNETIC NANO OBJECTS FOR IN VIVO MR AND HYPERTHERMIA** **Aurélie Walter** (Ipcms Institut de Physique et Chimie des Matériaux de Strasbourg, FRANCE) Antonio Garofalo, Lénaïc Lartigue, Claire Billotey, Florence Gazeau, Claire Wilhem, de Iphine Felder-Flesch, Sylvie Bégin-Colin	*ORAL* **LARGE SCALE EXFOLIATION OF BORON NITRIDE NANOSHEETS** **Konstantinos Kouroupis-Agalou,** (CNR-ISOF) Emanuele Treossi, Franco Corticelli, Vittorio Morandi, Vincenzo Palermo	*ORAL* **NANOCRYSTALLINE AUSTENITE IN FE-24NI-0.3C ALLOY FABRICATED BY HIGH PRESSURE TORSION AND SUBSEQUENT HEAT TREATMENT** **Shuai Chen** (Department of Materials Science and Engineering, Kyoto University) Akinobu Shibata, Nobuhiro Tsuji	*ORAL* **BULK METALLIC GLASSES UNDER MECHANICAL STRESS: INSIGHTS FROM IN-SITU HIGH ENERGY X-RAY DIFFRACTION** **Mihai Stoica** (IFW Dresden, Institute for Complex Materials, Germany) Sergio Scudino, Ivan Kaban, Jozef Bednarcik, Gavin Vaughan, Jürgen Eckert

TUESDAY 10 SEPTEMBER 2013 / AM2

Symposium	B1III	B1IV	B2I	B3I
Room	España 5	Andalucía 4	Macarena	Andalucía 8
Session Title	Titanium Aluminides I	ODS for Fossil energy and Modelling	Spark plasma sintering of nanoceramics	Biobased Polymers, Composites and Nanomaterials I
Chairperson	M. Muñoz-Morris	Jose Manuel Torralba and Javier Aldazabal	Thomas Graule	Lars Berglund
11:00	*INVITED / KEYNOTE* **COMPOSITIONAL AND MICROSTRUCTURAL EFFECTS UPON CREEP STRENGTH OF GAS ATOMIZED TIAL ALLOY POWDERS COMPACTED BY HIP OR SPS** **Marc Thomas** (Onera) Fabienne Popoff, Jean-Philippe Monchoux, Alain Couret	*ORAL* **DEVELOPMENT OF 1200ºC CLASS FECRAL BASED ODS FERRITIC STEELS** **Shigeharu Ukai** (Hokkaido University) Yoichi Sawazaki, Takuya Sasaki, Naoko Oono, Shigenari Hayashi, Kazuo Hamashima, Akifumi Niwa	*ORAL* **SPARK PLASMA SINTERING OF ND:LU2O3 TRANSPARENT CERAMICS FOR LASER APPLICATIONS** **Rémy Boulesteix** (Laboratoire SPCTS, Université de Limoges) Romain Epherre, Alexandre Maître, Christian Sallé, S Noyau	*INVITED / KEYNOTE* **BIO-INSPIRED CHITIN-OXIDE NANOCOMPOSITES THROUGH SELF-ASSEMBLY** **Emmanuel Belamie** (Institut Charles Gerhardt - UMR 5253 (CNRS/ENSCM/UM2/UM1), Montpellier, France) Alexander Sachse, Nathalie Marcotte, Krassimir Kostov, Vasile Huléa, Bruno Alonso
11:20		*ORAL* **MICROSTRUCTURAL ANALYSIS OF ODS STEEL ODM401** **Karl Dawson** (University of Liverpool) Gordon Tatlock, Ceri Williams, Thomas Boegelein	*ORAL* **MODIFIED SPARK PLASMA SINTERING FOR CERAMIC FABRICATION** **Lili Nadaraia** (Georgian Technical University GTU)	
11:40	*ORAL* **EFFECT OF HEAT TREATMENTS ON MICROSTRUCTURE AND MECHANICAL PROPERTIES OF CAST TIAL-BASED ALLOY** **Juraj Lapin** (Slovak Academy of Sciences, Institute of Materials and Machine Mechanics) Katarína Frkáòová, Oto Bajana	*ORAL* **ODS FECRAL ALLOYS FOR HIGH TEMPERATURE FOSSIL PROCESSES** **Sebastien Dryepondt** (Oak Ridge National Laboratory) Thomas Boegelein, Gordon Tatlock, Andy Jones	*ORAL* **WC-STAINLESS STEEL CEMENTED CARBIDES** **Cristina Fernandes** (University of Aveiro) Carla Pinho, Ana Senos	*ORAL* **THE EFFECT OF PLASTICIZERS ON THE BARRIER PROPERTIES OF BIOMIMETIC COMPOSITES OF CHITOSAN/CLAY** **Luciano F. Boesel** (EMPA - Swiss Federal Laboratories for Materials Science and Technology) Linda Thöny-Meyer
12:00	*ORAL* **MICROSTRUCTURAL CHARACTERIZATION OF TIAL INTERMETALLIC PROCESSED BY SPARK PLASMA SINTERING** **Angèlica Amigó** (Universitat Politècnica de València) Juan José Candel, Miguel Angel Lagos, Iñigo Agote, Vicente Amigó	*ORAL* **3D DISCRETE DISLOCATION DYNAMICS MODELLING OF DISLOCATION-INCLUSION INTERACTIONS IN NANO-STRUCTURED STEELS** **Daniel Thompson** (Department of Materials, University of Oxford, UK) Steve Fitzgerald, Steve Roberts, Sergei Dudarev, Edmund Tarleton	*ORAL* **SINTERING KINETICS OF PURE ALPHA-ALUMINA BY SPARK PLASMA SINTERING** **Yoshihiro Tamura** (University of Seville, Department of Condensed Matter Physics) Eugenio Zapata-Solvas, Bibi Malmal Moshtaghion, Diego Gómez-García, Arturo Domínguez-Rodríguez	*ORAL* **EFFECT OF MODIFIED CELLULOSE NANOCRYSTALS AND SILVER NANOPARTICLES ON THE BARRIER, ANTIBACTERIAL AND MIGRATION PROPERTIES OF PLA BASED NANOCOMPOSITES** **Elena Fortunati** (Materials Engineering Center, UdR INSTM, University of Perugia) Mercedes Peltzer, Silvia Rinaldi, Loredana Latterini, Livia Visai, Ilaria Armentano, Alfonso Jimenéz, José María Kenny
12:20	*ORAL* **FATIGUE RESISTANCE OF A TIAL ALLOY PREPARED BY SPS** **Gilbert Henaff** (Pprime Institute, ISAE-ENSMA) Veronique Pelosin, Yacine Kchaou, Médéric Morisset, Matthieu Comyn, de nis Bertheau	*ORAL* **OBJECT KINETIC MONTE CARLO SIMULATOR FOR DAMAGE IRRADIATION EVOLUTION AND DEFECT DIFFUSION IN GENERIC ALLOYS** **Ignacio Dopico** (IMDEA Materials) Ignacio Martin-Bragado	*ORAL* **MANUFACTURING OF HARD METALS USING SPS METHOD** **Nikoloz Jalabadze** (Georgian Technical University) Lili Nadaraia, Levan Khundadze	*ORAL* **NANOCOMPOSITES OF BIODEGRADABLE POLY(3-HYDROXY BUTYRATE) / ORGANOMODIFIED MONTMORILLONITE: MELT-MIXING PREPARATION AND STUDY OF THEIR BIODEGRADATION** **Elpiniki Panayotidou** (Department of Industrial design Engineering, TEI of Western Macedonia, 50100 Kozani, Greece) Ioannis Zuburtikudis, Apostolos Baklavaridis, Paraskevi Mitlianga, Constantinos Konidaris, Dimitris Achilias
12:40	*ORAL* **DEVELOPMENT OF TIAL ALLOYS AND SHAPING OF TURBINE BLADES BY SPARK PLASMA SINTERING** **Jean-Philippe Monchoux** (Cemes-Cnrs Upr 8011) Thomas Voisin, Houria Jabbar, Marc Thomas, Lise Durand, Alain Couret	*ORAL* **COMPUTER MODELLING OF ATOMIC MOVEMENTS/DIFFUSION ON OXIDE DISPERSION STRENGTHENED (ODS) MATERIALS** **Javier Aldazabal** (CEIT & Tecnun (University of Navarra)) Iñigo Aldazabal	*ORAL* **APPLICATION OF THE DESIGN OF EXPERIMENTS TO STUDY THE EFFECT OF ADDITIONS AND ADDITIVES IN MORTAR PROPERTIES** **Laia Haurie** (Universitat Politècnica de Catalunya) Joan Formosa, María Niubó, Jose María Chimenos	*ORAL* **PREPARATION AND CHARACTERIZATION OF PHB/GRAPHENE NANOCOMPOSITES** **Sergio Pezzin** (Chemistry Department - Santa Catarina State University) Mariana Bertoncini, Águeda Sonseca Ollala, Enrique Giménez Torres

TUESDAY 10 SEPTEMBER 2013 / AM2

Symposium	**C1I**	**C1II**	**C3I**	**C4I**
Room	**España 3**	**Sevilla 3**	**Andalucía 6**	**Sevilla 2**
Session Title	**Eutectic/Intermetallic Microstructures**	**Interaction Phase transformations/ mechanics I**	**Smart Processing under Extreme Conditions**	**Protective Coatings and Thin Films IV**
Chairperson	**J. Peña and C. Bordreuil**	**B. Appolaire**	**Olivera Milosevic**	**A. Cavaleiro**
11:00	*ORAL* **COMPETING CONFIGURATIONS IN A SYMMETRIC TERNARY EUTECTIC SYSTEM** **Abhik Choudhury** (Ecole Polytechnique) Mathis Plapp	*HIGHLIGHT* **PHASE FIELD MODELING OF MICROSTRUCTURE FORMATION: DIFFERENT WAYS TO INCORPORATE PLASTICITY** **Alphonse Finel** (Onera) Maeva Cottura, Benoît Appolaire, Yann Le Bouar	*INVITED / KEYNOTE* **ONE-STEP MECHANICAL PROCESSING TO CREATE NANOCOMPOSITE STRUCTURE AND ITS APPLICATIONS FOR ADVANCED MATERIALS** **Makio Naito** (Osaka University) Hiroya Abe, Akira Kondo	*INVITED / KEYNOTE* **FLEXIBLE DIAMOND-LIKE CARBON FILMS ON VISCOELASTIC SUBSTRATES** **Jeff de Hosson** (Un. of Groningen) Yutao Pei, Diego Martinez
11:20	*ORAL* **INVESTIGATION OF MICROSTRUCTURE OF SINGLE CRYSTAL SUPERALLOY CMSX-6 FORMED DURING DOWNWARD DIRECTIONAL SOLIDIFICATION PROCESS** **Fu Wang** (Giesserei Institut, RWTH Aachen) Dexin Ma, Bogner Samuel, Jianping Hong, Andreas Bührig-Polaczek	*ORAL* **INTERACTION OF THE MARTENSITE TRANSFORMATION FRONT WITH THE PLASTIC STRAIN. PHASE-FIELD MODELING.** **Julia Kundin** (University Bayreuth) Evgeny Pogorelov, Heike Emmerich		
11:40	*ORAL* **TRANSMISSION ELECTRON MICROSCOPY STUDY OF GRAPHITE IN CAST IRONS** **Koenraad Theuwissen** (Cirimat-Ensiacet) Lydia Laffont, Jacques Lacaze	*ORAL* **ROLE OF ELASTIC INHOMOGENEITY DURING THE FORMATION OF CUBOIDAL MICROSTRUCTURES IN NI BASE SUPERALLOYS** **Yann Le Bouar** (LEM, CNRS/Onera) Maeva Cottura, Alphonse Finel, Benoit Appolaire	*ORAL* **EFFECT OF PARTICLE SIZE OF STARTING OXIDE POWDERS ON THE PERFORMANCE OF DOPED- LANTHANUM OXYAPATITE FOR SOFC ELECTROLYTE MATERIALS PRODUCED BY MECHANICAL ALLOYING** **Bruno Trindade** (CEMUC, Mechanical Engineering Department, University of Coimbra, Portugal) Márcio Santos, Mafalda Macatrão, Cátia Alves, Fernando Oliveira, Teresa Marcelo, João Mascarenhas	*ORAL* **A-C HYDROGENATED AND NON-HYDROGENATED FILMS DOPED WITH ZR** **Ana Escudeiro** (SEG-CEMUC, Department of Mechanical Engineering, University of Coimbra) Tomas Polcar, Albano Cavaleiro
12:00	*ORAL* **QUANTITATIVE STUDY OF THE PROCESS OF SPACING EQUALIZATION DURING THIN EUTECTIC SOLIDIFICATION** **Sabine Bottin-Rousseau** (INSP UPMC) Silvère Akamatsu, Gabriel Faivre	*ORAL* **COHERENCY LOSS MECHANISM AND ITS INFLUENCE ON MICROSTRUCTURE EVOLUTION** **Pierre-Antoine Geslin** (LEM, Onera/CNRS) Benoît Appolaire, Alphonse Finel	*ORAL* **MECHANOCHEMICAL SYNSESIS OF DOPED APATITE-TYPE LANTHANUM SILICATES** **Tamara Kharlamova** (Tomsk State University) Svetlana Pavlova, Vladislav Sadykov, Marina Chaikina, Tamara Krieger, Olga Lapina, Vassilis Stathopoulos	*ORAL* **THE ROLE OF COMPOSITION, STRUCTURE AND MORPHOLOGY ON THE ELECTRICAL, OPTICAL AND ELECTROCHEMICAL RESPONSES OF ALNXOY FILMS** **Luis Marques** (University of Minho) Joel Borges, Nicolas Martin, Nuno P. Barradas, Eduardo Alves, Dominique Eydi, Thierry Girardeau, Carlos Fonseca, Filipe Vaz
12:20	*ORAL* **SOLIDIFICATION MECHANISMS AND RESULTING MICROSTRUCTURES IN WELDS BETWEEN DISSIMILAR STEELS** **Fanny Mas** (SIMAP Laboratory) Catherine Tassin, François Roch, Patrick Todeschini, Yves Brechet	*ORAL* **INTERCONNECTION BETWEEN PHASE TRANSFORMATIONS AND PLASTIC DEFORMATION IN ZR-BASED ALLOYS** **Margarita Isaenkova** (National Research Nuclear University) Yuriy Perlovich, Olga Krymskaya, Soe San Thu	*ORAL* **FROM PROCESSING TO MODELLING: HOT UNIAXIAL PRESSING OF A NANOSTRUCTURED N-TYPE SI80GE20** **Achraf Kallel** (Atomic and Alternative Energies Comission, LITEN Laboratory) Christophe L. Martin, Guilhem Roux	*ORAL* **TITANIA-LOADED HYBRID SOL-GEL THIN FILMS AS PRETREATMENTS FOR IMPROVING THE BARRIER PROPERTIES AND BIOACTIVITY OF TI6AL4V ALLOY** **Federico García-Galván** (Universidad Carlos III de Madrid) Amir Abdelsamie El-hadad, Antonia Jimenez-Morales, Juan Carlos Galván
12:40	*ORAL* **AN ADVANCED 3-D STOCHASTIC MODEL FOR PREDICTION OF MICROSTRUCTURE EVOLUTION IN SOLIDIFYING ALLOYS** **Laurentiu Nastac** (The University of Alabama)	*ORAL* **NUMERICAL MODELLING OF TRANSFORMATION PLASTICITY AND MECHANICAL-METALLURGICAL INTERACTION DURING PHASE TRANSFORMATION IN STEELS** **Renald Brenner** (LSPM, Laboratoire des Sciences des Procedes et des Materiaux, Universite Paris 13) Takayuki Otsuka, Brigitte Bacroix	*ORAL* **EFFECT OF EXPLOSIVE POWDER'S CONSOLIDATION IN PHASIC COMPOSITION OF BULK 316L STAINLESS STEEL** **Ana Rita Farinha** (CEMUC - Centro de Engenharia Mecânica da Universidade de Coimbra) Ricardo Mendes, María Teresa Vieira	*ORAL* **ELECTRODEPOSITION OF CR/AG NANOCOMPOSITE COATINGS WITH ANTIBACTERIAL PROPERTIES** **Itziar García-Urrutia** (Cidetec) Belén García-Blanco, Eva García-Lecina, José Antonio Díez

TUESDAY 10 SEPTEMBER 2013 / AM2

Symposium	C4II	D1I	D1IV	D1V
Room	Andalucía 7	Andalucía 3	España 4	Andalucía 2
Session Title	Inorganic thin films	Microelectronics and photonics	Neutron and X-ray Diffraction and Imaging for Materials Scienceand Engineering IV	Advanced Electron and Ion Microscopy Methods in Materials Characterization IV
Chairperson	Shukurov A.	D. Blavette	Jon James	Christian Kuebel
11:00	*INVITED / KEYNOTE* **DEVELOPMENT OF HIERARCHICAL NANOSTRUCTURED TIO2 FILMS FOR ENHANCED PHOTOELECTROCHEMICAL WATERAPLITTING** **Yuriy Pihosh** (The University of Tokyo) Kazuma Mawatari, Yoshio Kajita, Msahiro Tosa, Takehiko Kitamori	*INVITED / KEYNOTE* **PROGRESS IN THE STUDY OF SEMICONDUCTOR MATERIALS AND DEVICES BY ATOM PROBE TOMOGRAPHY** **George Smith** (Oxford University, Department of Materials) Paul Bagot, Alfred Cerezo, Baptiste Gault, Michael Mueller, Michael Moody, Samantha Bennett, Rachel Oliver, Colin Humphreys, Fengzai Tang	*ORAL* **STRUCTURE AND KINETICS OF PSEUDO BLOCK-COPOLYMERS AND IONIC LIQUIDS – AN IN-SITU SAXS STUDY** **Johanna Akbarzadeh** (University of Vienna, Faculty of Physics, Dynamics of Condensed Systems) Herwig Peterlik, Anja Stojanovic, Elena Ostas,Wolfgang Binder	*INVITED / KEYNOTE* **LOW-VOLTAGE STEM TOMOGRAPHY ON HYDRATED SAMPLES** **Karine Masenelli-Varlot** (Université de Lyon, Insa-Lyon, MATEIS UMR 5510, France) Annie Malchère, José Ferreira, Hamed Heidari Mezerji, Sara Bals
11:20			*ORAL* **FLUORESCENCE CORRECTION OF CHARACTERISTIC X-RAYS PRODUCED IN (FE,CR)7C3 DURING CHEMICAL MICROANALYSIS.** **Stephen Carpenter** (University of Blumenau, Blumenau, Brasil) Deyse Carpenter, John Pearce	
11:40	*ORAL* **SURFACE MODIFICATION BY TWO-STEP ANODIZATION OF TAOX THIN FILMS** **Sandra Carvalho** (University of Minho) Cristiana Alves, Albano Cavaleiro	*ORAL* **RECONSTRUCTION ISSUES FOR APT IN MICROELECTRONICS** **Sébastien Duguay** (University of Rouen, Groupe de Physique des Matériaux, St. Etienne du Rouvray, France) François Vurpillot, Adeline Grenier, Raphaël Serra, David Cooper, Sylvain Barreau, Huiyuan Wang, Didier Blavette, Jean-Paul Barnes	EMPTY SLOT	*ORAL* **3D RECONSTRUCTION OF A MESOPOROUS MONOLITHIC SILICA STRUCTURE USING SCANNING TRANSMISSION ELECTRON MICROSCOPY (STEM) TOMOGRAPHY** **Daniela Stoeckel** (Justus-Liebig-University Giessen) Christian Kübel, Ulrich Tallarek, Bernd Smarsly
12:00	*ORAL* **DIELECTRIC SPECTROSCOPY OF SB2TE3 THIN FILMS** **Sahin Yakut** (Istanbul University, Science Faculty, Physics Department) Deniz de ger, Kemal Ulutas	*ORAL* **3D EVALUATION OF THE CARBON-DOPED GE2SB2TE5 USING ATOM PROBE TOMOGRAPHY (APT) AND TRANSMISSION ELECTRON MICROSCOPY (TEM)** **Jihyun Lee** (Pohang University of Science and Technology) Dong-Hyeon Jang, Young-Tae Kim, Bong-Ho Lee, Gil-Ho Gu, Sun-Young Lee, Chan-Gyung Park	EMPTY SLOT	*ORAL* **COMPRESSED SENSING ELECTRON TOMOGRAPHY** **Zineb Saghi** (Department of Materials Science and Metallurgy, University of Cambridge) Rowan Leary, Daniel Holland, Paul Midgley
12:20	*ORAL* **CHARACTERISATION OF COPPER FILMS PROCESSED BY EVAPORATION** **Valentin Marchal-Marchant** (UCL/iMMC/IMAP) M. de Streel, A. Schmitz, B. Schmitz, E. Silberberg, S. Pace, P. Harlet, P.J. Jacques	*ORAL* **3D CHEMICAL ANALYSIS OF SI/SIGE BINARY ALLOY SUPERLATTICES BY ATOM PROBE TOMOGRAPHY** **Robert Estivill** (STMicroelectronics, Crolles, France) Adeline Grenier, Matthieu Py, Thibaut de nneulin, Jean-Michel Hartmann, Didier Blavette, Jean-Paul Barnes	EMPTY SLOT	*ORAL* **CHEMICAL SENSITIVE TOMOGRAPHY IN THE NANOSCALE** **Lluís Yedra** (Laboratory of Electron Nanoscopies (LENS)- MIND/IN2UB, Dept. d'Electrónica, Universitat de Barcelona, Barcelona, Spain) Alberto Eljarrat, Raúl Arenal, Moisés Cabó, Alberto López-Ortega, Marta Estrader, Eva Pellicer, Josep Nogués, Sónia Estradé, Francesca Peiró
12:40	*ORAL* **PLASMA-DEPOSITED CARBON-ALN THIN-FILMS: SYNTHESIS, MICROSTRUCTURES, AND THERMAL PROPERTIES** **Yves Scudeller** (University of Nantes, CNRS, Institut des Matériaux Jean Rouxel, France) A. Achnour, B.E Belkerk, K. Ait Aissa, J. Camus, S. Vizireanu, S. Ginestar, G Dinescu, L Lebrizoual, Abdou Djouadi	*ORAL* **CHARACTERIZATION OF CU2ZNSNSE4 THIN-FILM SOLAR CELLS** **Torsten Schwarz** (Max-Planck-Institut Für Eisenforschung) Oana Cojocaru-Mirédin, Pyuck-Pa Choi, Marina Mousel, Alex Redinger, Susanne Siebentritt, Dierk Raabe	EMPTY SLOT	*HIGHLIGHT* **ELECTRON CHANNELING CONTRAST IMAGING UNDER CONTROLLED DIFFRACTION CONDITIONS: A POWERFUL TECHNIQUE TO CHARACTERIZE DEFORMATION STRUCTURES IN THE SEM** **Ivan Gutierrez-Urrutia** (Max-Planck-Institut Fuer Eisenforschung) Dierk Raabe

TUESDAY 10 SEPTEMBER 2013 / AM2

	Symposium	D2I	D2II	D3II	E1III
	Room	Sevilla 1	Andalucía 1	Cartuja	España 2
	Session Title	Nanoindentation I	In-situ Micro- and Nano-Mechanical Characterisation I	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior IV	Fuel Cell Electrodes II
	Chairperson	T. Chudoba			G. Gebel
11:00		*ORAL* **AN APPRAISAL OF CURRENT METHODOLOGIES FOR THE STUDY OF CREEP DURING INDENTATION** **James Dean** (University of Cambridge) Bill Clyne	*HIGHLIGHT* **SLIP MECHANISMS IN BCC SINGLE CRYSTALS: IN-SITU LAUE DIFFRACTION** **Helena Van Swygenhoven** (Paul Scherrer Institut) Cecile Marichal, Steven Van Petegem, Camelia Borca	*INVITED / KEYNOTE* **POLYMER NETWORK SIMULATIONS AT MESOSCOPIC LEVEL** **Georgios Vogiatzis** (National Technical University of Athens) Grigorios Megariotis, Christos Tzoumanekas, Doros Theodorou	*INVITED / KEYNOTE* **THIN FILMS OF MIXED IONIC-ELECTRONIC CONDUCTING MATERIALS FOR SOLID OXIDE FUEL CELLS** **Jose Santiso** (Research Centre for Nanoscience and Nanotechnology, ICN-CSIC) Jaume Roqueta, Roberto Moreno, James Zapata, Mónica Burriel, Andrea Cavallaro, John Kilner
11:20		*ORAL* **NANOINDENTATION CREEP TESTING OF FCC METALS AT ELEVATED TEMPERATURES** **Gaurav Mohanty** (EMPA - Swiss Federal Laboratories for Materials Science and Technology) Krishna Rajan, Johann Michler	*ORAL* **TEMPERATURE DEPENDENT SIZE EFFECTS IN LIF [111] SINGLE CRYSTALS** **Rafael Soler Arnedo** (IMDEA Materials Institute) Jeffrey Wheeler, Jon Mikel Molina-Aldareguía, Chang Hyung-Jun, Javier Segurado, Johann Michler, Javier Llorca		
11:40		*ORAL* **INVESTIGATION OF THE TEMPERATURE DEPENDENCE OF POLYMERIC MATERIALS WITH THE INSTRUMENTED INDENTATION TEST** **Bernd Binder** (Helmut Fischer GmbH Institut Für Elektronik Und Messtechnik) Tanja Haas	*ORAL* **INFLUENCE OF DISLOCATION PILE-UPS ON MECHANICAL PROPERTIES OF MICROCANTILEVERS: NEW INSIGHTS VIA IN SITU MULAUE AND IN SITU SEM BENDING EXPERIMENTS.** **Marlene Kapp** (Erich Schmid Institute of Materials Science, Austrian Academy of Science, Leoben, Austria) Christoph Kirchlechner, Reinhard Pippan, Jean-Sébastien Micha, Olivier Ulrich, Gerhard de hm	*ORAL* **MULTISCALE MODELING OF COMPOSITE STRUCTURE-PROPERTY RELATIONS: APPLICATION TO ELECTRON TRANSPORT IN CARBON NANOTUBE REINFORCED POLYMER NANOCOMPOSITES.** **Sergey Pyrlin** (Group of Computational and Theoretical Physics, Center of Physics and Department of Physics, University of Minho, Campus de Gualtar,Braga, Portugal) Marta Ramos	*ORAL* **INTERACTION BETWEEN IRON-LIGAND COMPLEXES AND METAL ORGANIC FRAMEWORKS ON THE FUEL CELL PERFORMANCE OF NON-NOBLE METAL CATALYSTS** **Adina Morozan** (Institut Charles Gerhardt de Montpellier, UMR 5253 CNRS - Université Montpellier II, Agrégats, Interfaces Et Matériaux Pour L'Energie) Juan Tian, Moulay Tahar Sougrati, Michel Lefèvre, Jean-Pol Dodelet, de borah Jones, Frédéric Jaouen
12:00		*ORAL* **NANOINDENTATION AT ELEVATED TEMPERATURES: DESIGN AND EXPERIMENTS WITH NEW NANOINDENTATION DEVICE** **Jiri Nohava** (CSM Instruments) Gaurav Mohanty, Jeffrey Wheeler, Johann Michler, Philippe Kempé	*ORAL* **EX-SITU AND IN-SITU STUDY OF THE PLASTIC DEFORMATION OF INSB MICROPILLARS UNDER COHERENT X-RAYS** **Ludovic Thilly (**niversity of Poitiers**)** Vincent Jacques, Dina Carbone, Rudy Ghisleni, Christoph Kirchlechner	*ORAL* **EFFECT OF INTERFACES ON THE MELTING OF PEO CONFINED IN TRIBLOCK PS-B-PEO-B-PS COPOLYMERS** **Emmanuel Beaudoin** (Université Paris-Sud 11) Michael Robinet, Trang Phan, Renaud Denoyel, Patrick Davidson, Denis Bertin, Renaud Bouchet	*ORAL* **LA2-XSRXCOO4-D CATHODE MATERIALS FOR FUEL CELLS: TRANSPORT, DIFFUSION AND EXCHANGE PROPERTIES** **Guilhem Dezanneau** (Lab. SPMS, Ecole Centrale Paris) Yang Hu, Vincent Thoréton, Alistar Ottochian, Caroline Pirovano, Rose-Noelle Vannier
12:20		*ORAL* **MECHANICAL TESTING OF THIN FILMS UP TO 1000 °C** **Daniel Leisen** (Karlsruhe Institute of Technology) Manuel Dany, Radoslav Rusanov, Oleg Jakovlev, Tino Fuchs, Chris Eberl, Heinz Riesch-Oppermann, Oliver Kraft	*ORAL* **MEASURING STRAIN AND DEFECTS IN INDIVIDUAL MICROCRYSTALS: SYNCHROTRON MICRODIFFRACTION TECHNIQUES COMBINED WITH IN SITU LOADING** **Simon Langlais** (SIMaP-Grenoble INP) Marc Verdier, Guillaume Beutier, Bruno Gilles, Maxime Dupraz	*ORAL* **MODELING CONSTITUTIVE AND MICRO-SCALE FRICTIONAL BEHAVIOR OF PTFE** **Mads Sonne** (Technical University of de nmark) Jesper Nørregaard, Jesper Hattel	*ORAL* **DEVELOPMENT AND CHARACTERIZATION OF PTNI/PTNISN ALLOYS FOR APPLICATION AS CATALYSTS FOR DIRECT ETHANOL FUEL CELLS** **Deyse Carpenter** (University of Blumenau) Vilson Fusiger
12:40		*ORAL* **MEASUREMENT OF THE YOUNG MODULUS AT WARM TEMPERATURE** **Michel Darrieulat** (Ecole des Mines de Saint-Etienne) Asdin Aoufi, Christophe Desrayaud	*ORAL* **IN-SITU INDENTATION IN THE TRANSMISSION ELECTRON MICROSCOPE OF A DUAL PHASE MG ALLOY REINFORCED WITH GAMMA-MG17AL12** **Harshal Mathur** (Institute of General Materials Properties (WW1), Department of Materials Science and Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany) Mirza Mackovic, Souad Benrhaiem, Dorothea Amberger, Patricia Donnadieu, Erdmann Spiecker, Sandra Korte	EMPTY SLOT	*ORAL* **EFFECT OF THE DOPANT AMOUNT ON THERMAL ANALYSIS AND ELECTRICAL PROPERTIES OF SR1-XLAXTIO3±D AND SR1-(3X/2)LAXTIO3±D (X=0,0.1,0.2,1/3 AND 0.4) SYSTEMS AS ANO DE MATERIALS FOR SOFCS.** **María Gálvez Sánchez** (Universidad de Castilla-La Mancha. Instituto de Investigación de Energías Renovables) Juan Carlos Ruiz Morales, Juan Carlos Pérez Flores, Flaviano García Alvarado, Jesús Canales Vázquez

TUESDAY 10 SEPTEMBER 2013 / PM1

Symposium	A2II	A2III	A3II	B1I
Room	La Pinta	España 1	Giralda	Alamillo
Session Title	Fuctional nanostructures	Multiferroics single phase: fundamentals I	Chemistry	Steels at the micron and the nano-scale
Chairperson	J. Araujo and M.P. Calatayud	S. van Dijken	K. Schulte	D. Misra
15:00	*ORAL* **MAGNETIC FLUIDS WITH HIGH SPECIFIC ABSORPTION RATE** **Ian Baker** (Dartmouth College - Thayer School of Engineering) Katerina Kekalo	*INVITED / KEYNOTE* **DOMAINS IN MAGNETOELECTRIC MULTIFERROICS** **Manfred Fiebig** (Dept. Materials, ETH Zurich)	*INVITED / KEYNOTE* **GRAPHENE DERIVATIVES FOR OPTICAL AND MICROELECTRONIC APPLICATIONS** **Emanuele Treossi** (ISOF- CNR Bologna, Italy) Manuela Melucci, Giulio P. Veronese, Jeffrey M. Mativetsky, Stefano Prezioso, Francesco Perrozzi, Luca Ottaviano, Rita Rizzoli, Paolo Samorì, Vincenzo Palermo	*INVITED / KEYNOTE* **DIRECT INTERROGATION OF METALLIC ALLOYS DURING MELTING AND SOLIDIFICATION** **Amy Clarke (**Los Alamos National Laboratory) Michael Miller, Robert Field, David Alexander, Kester Clarke, Paul Gibbs
15:20	EMPTY SLOT			
15:40	*ORAL* **COLLOIDAL CHARACTERIZATION FOR SILICA IRON OXIDE MAGNETIC NANOPARTICLES MODIFIED FOR GENE DELIVERY** **Titus Sobisch** (LUM) Olga Mykhaylyk, Christian Plank, Dietmar Lerche, Arnold Uhl	*ORAL* **THE STRUCTURAL INSTABILITY IN EUTIO3 IN COMPARISON TO SRTIO3** **Jürgen Köhler** (Max-Planck-Institute for Solid State Research) Robert Dinnebier, Annette Bussmann-Holder	*ORAL* **STUDY OF NICKEL DECORATED GRAPHENE AND ITS INTERACTION WITH HYDROGEN** **Giovanni Bertoni** (Imem-Cnr) Mattia Gaboardi, Daniele Pontiroli, Matteo Aramini, Georgia Vlachopoulou, Giancarlo Salviati, Mauro Riccò	*ORAL* **CARBON PARTITIONING INTO AUSTENITE WITHOUT BAINITE TRANSFORMATION DURING QUENCHING AND PARTITIONING HEAT TREATMENT** **Yuki Toji** (Max-Planck-Institut Für Eisenforschung GmbH) Hiroshi Matsuda, Michael Herbig, Pyuck-Pa Choi, Dierk Raabe
16:00	*ORAL* **DENTAL APPLICATIONS OF SMALL SILVER CLUSTERS: A PRELIMINARY STUDY OF THE ABSORPTION, ANTIMICROBIAL AND MAGNETIC PROPERTIES.** **Berta Rivas** (Conservative de ntistry. Faculty of Medicine and de ntistry. University of Santiago de Compostela.Spain) M. Arturo López-Quintela, Pablo Castelo, Benjamín Martín-Biedma, Purificación Varela-Patiño, José Rivas	*ORAL* **EVIDENCE FOR STRONG MAGNON PHONON COUPLING IN EU1-XSRXTIO3** **Annette Bussmann-Holder** (Max-Planck-Institute for Solid State Research) Jürgen Köhler, Zurab Guguchia, Hugo Keller	*ORAL* **XANTHATES AS A NEW TOOL FOR NANO-CARBONS COVALENT FUNCTIONALIZATION** **Florence Pennetreau** (Université catholique de Louvain) Béatrice Vanhorenbeke, Charles Vriamont, Olivier Riant, Sophie Hermans	*ORAL* **TEM STUDIES OF 100CR6 STEEL AFTER COOLING FROM SEMISOLID RANGE TO BAINITIC TEMPERATURES** **Lukasz Rogal** (Institute of Metallurgy and Materials Science of The Polish Academy of Sciences) Jan Dutkiewicz
16:20	*ORAL* **STRUCTURE DETERMINATION OF BI-DOPED MAGHEMITE MULTIFUNCTIONAL NANOPARTICLES FOR CONTRAST IMAGING** **Maria Angeles Laguna-Marco** (ICMA and Dpto. de Física de La Materia Condensada, CSIC-Universidad de Zaragoza) Cristina Piquer, Roberto Boada, Alejandro Gomez Roca, Antonella Ladecola, Jesus Chaboy	*ORAL* **RAMAN AND INFRARED PHONON FEATURES AROUND THE MAGNETIC TRANSITIONS OF MULTIFERROIC MNWO4** **Roberto Luiz Moreira** (Universida de Federal de Minas Gerais) Ariete Righi, Ricardo Lobo, Renaud Schleck, Anderson Dias	*ORAL* **FACILE SYNTHESIS OF FE2O3-GRAPHENE HYBRID COMPOSITES BY ELECTROCHEMICAL EXFOLIATION AND MICROWAVE-ASSISTED EXPANSION** **Zhenyuan Xia** (Istituto per la Sintesi Organica e la Fotoreattività Consiglio Nazionale delle Ricerche (ISOF-CNR)) Treossi Emanuele, Corticelli Franco, Morandi Vittorio, Bellani Vittorio, Palermo Vincenzo	*ORAL* **MULTISCALE CHARACTERISATION OF THE STRENGTHENING MECHANISMS ACTIVATED IN TWINNING-INDUCED PLASTICITY STEELS** **Pascal J. Jacques** (UCL/iMMC/IMAP) K. Renard, H. Idrissi
16:40	*ORAL* **MICROFLUIDICS, AN EMERGING TECHNOLOGY TO GAIN CONTROL AT THE NANOSCALE:PRODUCTION OF AU-FE3O4 MAGNETIC NANOPARTICLES FOR BIOLOGICAL APPLICATIONS** **Victor Sebastian** (Departamento de Ingenieria Quimica- INA- Ciber BBN. Universidad de Zaragoza) Ane Larrea, Manuel Arruebo, Jesus Santamaria	*ORAL* **HYBRID PARAMAGNON PHONON MODES AT ELEVATED TEMPERATURES IN EUTIO3** **Hugo Keller** (Physik Institut de r Universität Zürich) Annette Bussmann-Holder, Zurab Guguchia, Jürgen Köhler	*ORAL* **MECHANISM OF CUTTING CARBON NANOTUBES BY PLANETARY BALL MILLING** **Marijana Mionic** (Ecole Polytechnique Fédérale de Lausanne (EPFL)) Richard Gaal, Rita Smajda, Arnaud Magrez, Laszlo Forro	*ORAL* **MECHANICAL BEHAVIOUR AND RETAINED AUSTENITE STABILITY OF THERMO-MECHANICALLY PROCESSED LOW-SI TRIP-ASSISTED STEELS WITH AND WITHOUT ADDITIONS OF NB AND TI** **Elena Pereloma** (University of Wollongong) Fayez Alharbi, Azdiar Gazder

TUESDAY 10 SEPTEMBER 2013 / PM1

	B1III	B1IV	B3I	B3II
Symposium				
Room	España 5	Andalucía 4	Andalucía 8	La Niña
Session Title	Titanium Aluminides II	Mechanical behaviour & deformation	Biobased Polymers, Composites and Nanomaterials II	Fire retardant Polymers, Composites and Nanocomposites I
Chairperson	M. Thomas	Marta Serrano	Lars Berglund	Lopez Cuesta J.M.
15:00	*HIGHLIGHT* **THERMAL AND ATHERMAL STRESSES IN TIAL ALLOYS** **Roland Hoppe** (Institute for Materials Research, Helmholtz-Centre Geesthacht, Germany) Fritz Appel	*ORAL* **FRACTURE TOUGHNESS CHARACTERIZATION OF DIFFERENT ODS ALLOYS** **Mikhail Sokolov** (Oak Ridge National Laboratory, TN, USA) Zhangjian Zhou, David Hoelzer	*INVITED / KEYNOTE* **DESIGN OF MULTI-SCALE CELLULOSE BASED AEROGELS FOR IMPROVED THERMAL INSULATION PROPERTIES.** **Yves Grohens** (University of South Brittany) Samia Mahouche Chergui, Bénédicte Lebeau, Yves Scudeller	*INVITED / KEYNOTE* **STRATEGIES FOR IMPROVING THE FIRE RESISTANCE OF FIBRE-REINFORCED COMPOSITES** **Baljinder K. Kandola** (Institute for Materials Research and Innovation, University of Bolton)
15:20	*ORAL* **MICROSTRUCTURE AND DEFORMATION MECHANISMS RELATIONSHIP OF A GAMMA-TIAL INTERMETALLIC ALLOY: AN IN SITU EXPERIMENTAL STUDY** **Rocío Muñoz Moreno** (Institute IMDEA Materials) Carl Boehlert, Elisa María Ruiz Navas, María Teresa Pérez Prado	*ORAL* **ON THE ANISOTROPY OF FERRITIC ODS ALLOYS** **Marta Serrano García** (Ciemat) Andrea García-Junceda Ameigenda, Rebeca Hernandez Pascual, Mercedes Hernandez Mayoral		
15:40	*ORAL* **EFFECT OF CREEP AT CONSTANT TEMPERATURE AND THERMAL CYCLING CREEP ON DAMAGE AND FRACTURE OF TIAL-BASED ALLOY** **Hana Staneková** (Slovak Academy of Sciences, Institute of Materials and Machine Mechanics) Juraj Lapin	*ORAL* **EFFECT OF THE MICROSTRUCTURE OF FE-14CR BASED ODS STEELS ON THEIR PLASTIC BEHAVIOR AT ELEVATED TEMPERATURES.** **Mickaël Dade** (CEA Saclay) Joël Malaplate, Jérôme Garnier, Alexis Deschamps	*ORAL* **COMPATIBILIZATION STRATEGIES FOR ECO-COMPOSITES CONTAINING NATURAL FIBRES** **Lucia Conzatti** (CNR, Institute for Macromolecular Studies (ISMAC)) Francesco Giunco, Enrico Marsano, Philip Hodge, Paola Stagnaro	*HIGHLIGHT* **RECENT DEVELOPMENTS IN PHOSPHORUS BASED FLAME RETARDANTS FOR PLASTICS** **Sabyasachi Gaan** (Empa) Timea Stelzig, Matthias Neisius, Shuyu Liang, Giuseppino Fortunato, Henri Mispreuve, Heribert Perler, Reinold Naescher, Thomas Zich
16:00	*ORAL* **HIGH TEMPERATURE INTERNAL FRICTION IN A TI-46AL-1MO-0.2SI INTERMETALLIC** **Jose San Juan** (Universidad del País Vasco, Dept. Física Materia Condensada) Miguel Castillo-Rodriguez, Pablo Simas, María L. Nó, José A. Jiménez, Oscar A. Ruano	*ORAL* **HIGH TEMPERATURE DEFORMATION BEHAVIOR AND MICROSTRUCTURE EVOLUTION OF FERRITIC ODS STEELS** **Luis Strassberger** (Kit) Jarir Aktaa	*ORAL* **BIO-NANOCOMPOSITES WITH SHAPE MEMORY BEHAVIOR** **Laura Peponi** (Institute of Polymer Science and Technology (ICTP - C.S.I.C.)) Ivan Navarro-Baena, José M. Kenny	*ORAL* **MULTIFUNCTIONAL LDH-BASED POLYMER NANOCOMPOSITE AND ITS PROPERTIES** **Ehsan Naderi Kalali** (IMDEA Materials) Nianjun Kang
16:20	*ORAL* **SURFACE ENGINEERING OF GAMMA-TIAL FOR DRAG REDUCTION AT HIGH TEMPERATURE** **Raluca Pflumm** (DECHEMA-Forschungsinstitut) Michael Schütze	*ORAL* **CORRELATION BETWEEN MICROSTRUCTURE AND MECHANICAL PROPERTIES AT VARIOUS SCALES OF FE-14CR1W ODS STEELS** **Vincent Klosek** (CEA, IRAMIS, Laboratoire Léon Brillouin (CEA - CNRS)) Sheng-Yi Zhong, Yann de Carlan, Vincent Ji, Marie-Hélène Mathon	*ORAL* **COMPOSITE NANOFIBERS OF NATURAL POLYMERS** **Elisa Mele** (Nanophysics, Istituto Italiano di Tecnologia, Genova (Italy)) Ioannis Liakos, George C. Anyfantis, Ilker S. Bayer, José Alejandro Heredia-Guerrero, Roberto Cingolani, Athanassia Athanassiou	*ORAL* **POLYPHOSPHAZENES AS NEW FIRE RETARDANT POLYMERS FOR TEXTILES** **Thomas Mayer-Gall** (Deutsches Textilforschungszentrum Nord-West GGmbH) Klaus Opwis, Jochen Gutmann
16:40	*ORAL* **GAMMA TIAL BY SELECTIVE ELECTRON BEAM MELTING: PROCESS PARAMETERS AND MICROSTRUCTURE** **Jan Schwerdtfeger** (ZMP, Uni Erlangen) Carolin Körner, Robert Singer, Vera Jüchter	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF REDUCED ACTIVATION ODS FERRITIC STEELS PROCESSED BY HIP AND SPS** **Vanessa de Castro** (Universidad Carlos III de Madrid) María Angustias Auger, Teresa Leguey, Angel Muñoz, Miguel Angel Monge, Ramiro Pareja	*ORAL* **NANOCELLULOSE REINFORCED NYLON: A DETAILED STUDY ON POLYMERS MECHANICAL PROPERTIES** **Agnese Attanasio** (Nanophysics Facility, Istituto Italiano Di Tecnologia) Iker Bayer, Athanassia Athanassiou	*ORAL POSTERS*

TUESDAY 10 SEPTEMBER 2013 / PM1

Symposium	B3III	C1I	C1II	C3I
Room	Andalucía 5	España 3	Sevilla 3	Andalucía 6
Session Title	Hybrid Polymer Nanocomposites I	Phase field applied to solidification	Interaction Phase transformations/ mechanics II	Synthesis-Structure-Properties Relationship in Advanced Materials
Chairperson		Michel Rappaz	Y. Le Bouar	Makio Naito
15:00	*INVITED / KEYNOTE* **MULTIFUNCTIONAL INORGANIC/POLYMER COLLOIDAL NANOPARTICLES VIA IN-SITU SURFACE CRYSTALLIZATION** **Rafael Muñoz-Espí** (Max Planck Institute for Polymer Research) Viktor Fischer, Margherita Mari, Katharina Landfester	*ORAL* **A THERMODYNAMIC CONSISTENT MULTI-PHASE-FIELD MODEL FOR NON-EQUILIBRIUM SOLIDIFICATION** **Haifeng Wang** (Institut Für Materialphysik Im Weltraum, de utsches Zentrum Für Luft- Und Raumfahrt (DLR)) D.M. Herlach	*HIGHLIGHT* **INFLUENCE OF DEFORMATION ON PHASE TRANSFORMATION AND PRECIPITATION IN STEELS FOR OIL COUNTRY TUBULAR GOODS** **Ernst Kozeschnik** (Institute of Materials Science and Technology, Vienna University of Technology, Austria) Alexander Timoshenkov, Piotr Warczok, Mikaela Albu, Jürgen Klarner, Christof Sommitsch	*INVITED / KEYNOTE* **TRANSMISSION ELECTRON MICROSCOPY STUDY OF YXGD1-XBA2CU3OY SUPERCONDUCTIVE LAYER CONTAINING BAZRO3 PARTICLES** **Takeharu Kato** (Japan Fine Ceramics Center) Yasuo Takahashi, Ryuji Yoshida, Daisaku Yokoe, Masateru Yoshizumi, Teruo Izumi, Tsukasa Hirayama, Yuh Shiohara
15:20		*ORAL* **SOLIDIFICATION OF AG-AL-CU – A PHASE-FIELD STUDY** **Sebastian Schulz** (Institute for Applied Materials, Karlsruhe Institute of Technology, Karlsruhe, Germany) Abhik Choudhury, Rajdip Mukherjee, Philipp Steinmetz, Britta Nestler	*ORAL* **EFFECT OF STRAIN AND STRAIN RATE ON THE EVOLUTION OF DISPERSOID PARTICLES IN AL-MN-FE-SI ALLOY DURING HOT DE FORMATION** **Thomas Hill** (University of Manchester) Joseph Robson, Nicolas Kamp	
15:40	*ORAL* **MULTIPOD-LIKE POLYSTYRENE/ SILICA CLUSTERS DESIGNED BY SEEDED-GROWTH EMULSION POLYMERIZATION: TOWARDS COLLOIDAL MOLECULES AND MULTIVALENT SILICA COLLOIDS** **Serge Ravaine** (Crpp - Cnrs) Anthony Désert, Jean-Christophe Taveau, Olivier Lambert, Muriel Lansalot, Elodie Bourgeat-Lami, Etienne Duguet, Antoine Thill, Olivier Spalla	*ORAL* **PHASE FIELD SIMULATION OF EUTECTIC TRANSFORMATIONS IN THE PLATINUM-CARBON SYSTEM** **Alexander Monas** (ICAMS, Ruhr-University Bochum, 44780 Bochum, Germany) Oleg Shchyglo, Pieter Bloembergen, Ingo Steinbach	*ORAL* **EFFECTS OF COLD DE FORMATION IN DUPLEX STAINLESS STEELS** **Marco Breda** (DII - University of Padua) Irene Calliari, Luca Pezzato, Istvan Mészáros, Marco Pizzo	*ORAL* **FROM SIMPLE METAL CARBODIIMIDES TO FUNCTIONAL MATERIALS** **Debora Ressnig** (Max Planck Institute of Colloids and Interfaces) Markus Antonietti, Tristan Corbiere
16:00	*ORAL* **SYNTHESIS, MORPHOLOGY AND FUNCTIONAL PROPERTIES OF POROUS POLYMER FILMS CONTAINING IN SITU GROWN PD NANOPARTICLES: INFLUENCE OF THE FILM PROCESSING CONDITIONS AND OF THE METAL IN SITU GENERATION ROUTES** **Eliane Espuche** (IMP - University Lyon 1) Sandra Simon	*ORAL* **PHASE-FIELD INVESTIGATION OF ROD EUTECTIC MORPHOLOGIES UNDER GEOMETRICAL CONFINEMENT** **Melis Serefoglu** (Koc University) R. E. Napolitano, Mathis Plapp	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF THERMOMECHANICALLY PROCESSED 9CR-1MO-NB-V STEEL PLATE** **Emma Piozin** (CEA Saclay) Jean-Christophe Brachet, Anne, Françoise Gourgues-Lorenzon, Sébastien Vincent, André Pineau	*ORAL* **MICROSTRUCTURE STUDY OF PIEZOELECTRIC KNN THICK FILMS AND FIBRES** **Tony Lusiola** (Empa) Francesca Bortolani, Frank Clemens, Qi Zhang, Robert Dorey
16:20	**EMPTY SLOT**	*ORAL* **PHASE FIELD SIMULATION OF MG-AL ALLOY SOLIDIFICATION IN TERMS OF SIMULATION BASED DEGRADING ALLOY DESIGN** **Oleg Shchyglo** (ICAMS, Ruhr-Universitaet Bochum, Germany) Damian Pawlik, Daniel Höche, Ingo Steinbach	*ORAL* **SIMULATION OF CARBO-NITRIDE PRECIPITATION IN THE MULTI-PHASE MICROSTRUCTURE OF LOW-CARBON STEEL** **Walter Mayer** (Institute of Materials Science and Technology, Vienna University of Technology) Ernst Kozeschnik	*ORAL* **STRUCTURAL AND SPECTROSCOPIC INVESTIGATION OF COPPER OXIDES NANOPARTICLES WITH VARIOUS CAPPING AGENTS** **Jerzy Peszke** (A.Chelkowski Institute of Physics, University of Silesia, Katowice, Poland) Anna Nowak, Jacek Szade, Ewa Talik, Alicja Ratuszna
16:40	*ORAL* **BIONANOCOMPOSITES PREPARED BY INTERFACING PROTEINS WITH VANADIUM AND TUNGSTEN OXIDES THROUGH A COMPLEX COACERVATION PROCESS** **Nathalie Steunou** (Institut Lavoisier, UMR CNRS 8180, UVSQ) Imane Baroudi , Corine Simonnet-Jégat, Bruno Fayolle, Florent Carn, Emmanuel Cadot	*ORAL* **PHASE FIELD SIMULATION STUDY OF THE INITIAL GROWTH KINETIC OF ALPHA- AND BETA-TI NUCLEI IN GRAIN REFINED TI-AL-B ALLOYS** **Markus Apel** (Access E.V.) Janin Eiken	*ORAL* **ANALYSIS OF PHASE TRANSFORMATION KINETICS FROM EVOLUTION OF THE PARTICLE SIZE DISTRIBUTION – EXPERIMENTS AND MODELLING** **Bastian Rheingans** (Institute for Materials Science, University of Stuttgart) Eric Mittemeijer	*ORAL* **HYDROTHERMAL FABRICATION OF ZRO2 NANOSTRUCTURES: EFFECT OF THE SYNTHESIS CONDITIONS** **Victor Fuenzalida** (Universidad de Chile) Rodrigo Espinoza, Italo Moglia, Armando Chacón

TUESDAY 10 SEPTEMBER 2013 / PM1

Symposium	**C4I**	**D1I**	**D1III**	**D1V**
Room	**Sevilla 2**	**Andalucía 3**	**España 4**	**Andalucía 2**
Session Title	**Protective Coatings and Thin Films V**	**Fundamentals and applications to material science**	**Tomography: Emerging Contrast Modes**	**Advanced Electron and Ion Microscopy Methods in Materials Characterization V**
Chairperson	**B. Beake**	**G. Smith**	**Frank Mücklich**	**Ivan Gutierrez-Urrutia**
15:00	*INVITED / KEYNOTE* **DESIGN AND SYNTHESIS OF NOVEL OXIDE AND OXINITRIDE THIN FILMS BY MAGNETRON SPUTTERING** **Michael Stueber** (Karlsruhe Institute of Technology (KIT)) Harald Leiste, Sven Ulrich, Hans Seifert	*HIGHLIGHT* **ROLE OF SURFACE STATES, DEFECTS AND LASER EXCITATION IN THE SCREENING OF THE DC FIELD IN NON-METALLIC FIELD EMITTER** **Angela Vella** (Groupe Physique Materiaux, Universite de Rouen) Elena Silaeva, Laurent Arnoldi, Jonathan Houard, Bernanrd Deconihout	*HIGHLIGHT* **TOWARDS 3D X-RAY DIFFRACTION IMAGING OF GRAIN SUB-STRUCTURES BY MEANS OF X-RAY DARK-FIELD MICROSCOPY AND SECTION TOPOGRAPHY** **Wolfgang Ludwig** (MATEIS, INSA Lyon, CNRS, UMR 5510) Andrew King, Henning Friis Poulsen, Anatoly Snigirev	*HIGHLIGHT* **IN-SITU ANNEALING OBSERVATION OF RECRYSTALIZATION PROCESS IN ALUMINIUM ALLOY USING TEM AND SEM ORIENTATION MICROSCOPY** **Magdalena Bieda-Niemiec** (IInstitute of Metallurgy and Materials Science of Polish Academy of Sciences) Jakub Kawalko, Piotr Bobrowski, Francois Brisset, Marek Faryna, Krzysztof Sztwiertnia
15:20		*ORAL* **PHASE FORMATION AND KINETICS ANALYSIS FOR ALUMINI DE MULTI-LAYER SYSTEMS BY ATOM PROBE TOMOGRAPHY** **Hisham Aboulfadl** (Chair of Functional Materials - Saarland University) Norbert Lindow, Daniel Baum, Hans-Christian Hege, Frank Mücklich,	*ORAL* **PTYCHOGRAPHIC NANO X-RAY COMPUTED TOMOGRAPHY** **Bjoern Enders** (Physics Department (E17), Technische Universität München, Garching, Germany) Martin Dierolf, Marco Stockmar, Irene Zanette, Benedict Daurer, Andreas Fehringer, Peter Cloetens	*ORAL* **HIGH RESOLUTION ELECTRON MICROSCOPY FROM NANOSTRUCTURED CHARACTERIZATION TO NANOMATERIALS SYNTHESIS AND REACTIVITY** **Michel Trudeau** (Hydro-Quebec Research Institute) Lisa Rodriguez, René Veillette
15:40	*ORAL* **INFLUENCE OF INCREASING V CONTENT ON THE PROPERTIES OF TI-SI-(V)-N FILMS PREPARED BY DC REACTIVE MAGNETRON SPUTTERING** **Filipe Fernandes** (CEMUC - Department of Mechanical Engineering, University of Coimbra) Altino Loureiro, Tomas Polcar, Albano Cavaleiro	*ORAL* **EFFECT OF HIGH ELECTROSTATIC FIELD ON THE INTERACTION OF A FEMTOSECOND LASER PULSE WITH A SEMICONDUCTOR ATOM-PROBE TIP** **Elena Silaeva** (Material Physics Group, University of Rouen) Angela Vella, Jonathan Houard, Laurent Arnoldi, François Vurpillot, Bernard Deconihout	*ORAL* **FOURIER TRANSFORM HOLOGRAPHY USING AN EXTERNAL MASK AT SEXTANTS: STUDY OF THE LATERAL CONFINEMENT ON MAGNETIC OUT-OF-PLANE STRIPE DOMAINS** **Victor Lopez-Flores** (Synchrotron SOLEIL) Horia Popescu, Marina Tortarolo, Nicolas Jaouen, Franck Fortuna, Renaud de launay, Carlo Spezzani, Maurizio Sacchi	*ORAL* **TEM IN SITU NANOINDENTATION AND MECHANICAL ANALYSIS OF CERAMIC NANOPARTICLES** **Karine Masenelli-Varlot** (Université de Lyon, Insa-Lyon MATEIS, France) Emilie Calvié, Lucile Joly-Pottuz, Julien Réthoré, Inas Issa, Vincent Garnier, Yves Jorand, Annie Malchère, Jérôme Chevalier
16:00	*ORAL* **MAGNETRON SPUTTERING AT GLANCING ANGLES FOR THE DEPOSITION OF POROUS MXSIYOZ THIN FILMS INTENDED FOR COLOR AND ELECTROCHROMIC APPLICATIONS** **Francisco Yubero** (Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla)) Jorge Gil-Rostra, Francisco García-García, Agustín González-Elipe	*ORAL* **USING SPATIAL DISTRIBUTION MAPS TO ESTIMATE APT EFFICIENCY** **Robert Ulfig** (CAMECA Instruments Inc.) Brian Geiser, David Larson, Ty Prosa, Thomas Kelly	*ORAL* **PTYCHOGRAPHIC FRESNEL DIFFRACTION TOMOGRAPHY AT THE NANOSCALE** **Brian Abbey** (ARC Centre of Excellence for Coherent X-Ray Science, Department of Physics, La Trobe University, Melbourne, Australia) Michael Jones, Grant Van Riessen, Corey Putkunz, Eugeniu Balaur, Mac Luu, David Vine, Andrew Peele	*ORAL* **AUTOMATED PHASE DETECTION RESOLUTION USING TEM SPOT DIFFRACTION PATTERNS** **Muriel Veron** (SIMAP Laboratory) Zhen Zhang, Edgar F. Rauch
16:20	*ORAL* **NANOPOROUS GOLD THIN FILMS DEPOSITED BY MAGNETRON SPUTTERING: TAYLORING THE POROSITY** **Rafael Alvarez** (Instituto de Ciencia de Materiales de Sevilla (CSIC-US)) Jose M. García-Martin, Manuel Macias-Montero, Lola Gonzalez-García, Juan C. Gonzalez, Victor Rico, Jan Perlich, Jose Cotrino, Agustin R. Gonzalez-Elipe, Alberto Palmero	*ORAL* **ANTENNA EFFECT IN LASER ASSISTED ATOM PROBE TOMOGRAPHY** **Laurent Arnoldi** (Groupe de Physique des Matériaux , Université et INSA de ROUEN) Angela Vella, Jonathan Houard, Bernard de conihout	*ORAL* **QUANTITATIVE MATERIAL CHARACTERIZATION USING GRATING-BASED PHASE-CONTRAST X-RAY IMAGING** **Marian Willner** (Department of Physics & Institute for Medical Engineering, Technische Universität München, Garching, Germany) Julia Herzen, Martin Bech, Irene Zanette, Alexander Rack, Timm Weitkamp, Franz Pfeiffer	*ORAL* **A NOVEL APPROACH TO HIGH CONTRAST ELECTRON MICROSCOPY OF MACROMOLECULAR BLOCK COPOLYMER ASSEMBLIES AT SUB-NANOMETRIC SCALE** **Ana M Sanchez** (Department of Physics, Warwick University) Mark A Dyson, Joseph P Patterson, Rachel K. O'Reilly, Jeremy Sloan, Neil R. Wilson
16:40	*ORAL* **EFFECT OF BI INCORPORATION ON THE MECHANICAL AND TRIBOLOGICAL PROPERTIES OF SPUTTERED HARD NITRIDES FILMS** **João Oliveira** (SEG-CEMUC, Department of Mechanical Engineering, University of Coimbra) Albano Cavaleiro	*ORAL* **ATOM PROBE TOMOGRAPHY ANALYSIS OF II-VI ON III-VI SEMICONDUCTORS** **Hammouda Benallali** (Im2np) K. Hoummada, M. Descoins, P. Rueda-Fonseca, L. Gerard, E. Bellet-Amalric, S. Tatarenko, K. Kheng, D. Mangelinck	*ORAL* **IMAGING OF A SINGLE DISLOCATION BY MICRO-BEAM LAUE DIFFRACTION AND BRAGG COHERENT DIFFRACTIVE IMAGING** **Felix Hofmann** (Department of Engineering Science, University of Oxford, Oxford, UK) Brian Abbey, Brian F. Usher, Eugeniu B. Balaur, Ruqing Xu, Ross Harder	*ORAL* **STRUCTURE CHARACTERIZATION OF COMPLEX INTERMETALLIC AL77RH15RU8 PHASE USING NOVEL AUTOMATED DIFFRACTION TOMOGRAPHY METHOD** **Shmuel Samuha** (Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel) Enrico Mugnaioli, Benjamin Grushko, Ute Kolb, Louisa Meshi

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Symposium	D2I	D2II	D3II	E1III
Room	Sevilla 1	Andalucía 1	Cartuja	España 2
Session Title	Nanoindentation II	In-situ Micro- and Nano-Mechanical Characterisation II	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior V	Modelling
Chairperson	James Dean			F. Marques
15:00	*ORAL* **MECHANICAL CHARACTERIZATION OF ULTRA-THIN COATINGS** **Thomas Chudoba** (ASMEC Advanced Surface Mechanics GmbH) Kavita Mayekar	*HIGHLIGHT* **STRUCTURE AND DEFORMATION PROCESSES OF NANOCRYSTALLINE METALS CHARACTERIZED BY IN-SITU STRAINING IN COMBINATION WITH ACOM-STEM** **Christian Kuebel** (KIT) Aaron Kobler, Horst Hahn	*INVITED / KEYNOTE* **MULTISCALE SIMULATION OF CARBON NANOTUBE/EPOXY NANOCOMPOSITES** **Alexey Gavrilov** (Lomonosov Moscow State University) Pavel Komarov, Alexei Khokhlov, Pavel Khalatur	*INVITED / KEYNOTE* **STRUCTURE AND TRANSPORT PROPERTIES OF POLYMER ELECTROLYTE MEMBRANES PROBED AT MICROSCOPIC SCALES** **Sandrine Lyonnard** (INAC-SPRAM, Cea GRENOBLE) Quentin berrod, Govind Prajapati, Jean-Marc Zanotti, Jacques Ollivier, Bernhard Frick, Lionel Porcar, Armel Guillermo, Gerard Gebel
15:20	*ORAL* **MICROSTRUCTURAL EVOLUTION AND MECHANICAL PROPERTIES OF BETA TI-AL-MO-FE ALLOY** **Dong-Geun Lee** (Korea Institute of Materials Science) Chenglin Li, Xujun Mi, Yongtai Lee	*ORAL* **IN-SITU OBSERVATION OF THE DEFORMATION OF MMC HONEYCOMBS BY X-RAY COMPUTED TOMOGRAPHY AND CORRELATION WITH EBSD PHASE ANALYSIS** **Harry Berek** (TU Bergakademie Freiberg) Uta Ballaschk, Christian Weigelt, Christos Aneziris		
15:40	*ORAL* **THE EFFECTIVE INDENTER CONCEPT AND ITS EXTENSION INTO THE TIME DOMAIN** **Nick Bierwisch** (Sio) Norbert Schwarzer	*ORAL* **MICROMECHANICAL QUANTIFICATION OF DUCTILE DAMAGE IN DP STEEL** **Johan Hoefnagels** (Eindhoven University of Technology, The Netherlands) Cem Tasan, Marc Geers	EMPTY SLOT	*ORAL* **A CLASSICAL MOLECULAR DYNAMICS APPROACH TO PROTON DIFFUSION FOR BZY** **Alistar Ottochian** (Lab. SPMS, Ecole centrale Paris,CHATENAY-MALABRY, France) Clément Gilles, Guilhem de zaneau, Paolo Raiteri, Julian D. Gale
16:00	*ORAL* **A STUDY OF THE SUBSTRATE EFFECT IN THICK COPPER FILMS ON STEEL SUBSTRATES** **Joe Reed** (Gordon Laboratory, Department of Materials and Metallurgy, University of Cambridge) James Dean, Bill Clyne	*ORAL* **OPTIMIZING OF CROSS-CORRELATION METHODS FOR LOCAL RESIDUAL STRESS MEASUREMENTS IN SLIGHTLY TENSILE DEFORMED TWIP STEELS** **Tom Jäpel** (Max-Planck-Institut Für Eisenforschung GmbH) Stefan Zaefferer, Dierk Raabe	*ORAL* **RUO2-CATALYSED HCL OXIDATION STUDY BY KINETIC MONTE CARLO APPROACH** **Sergey Pogodin** (Institut Català D'Investigació Química) Núria López	*ORAL* **FIB-SEM CHARACTERIZATION AND PORE-SCALE MODEL PREDICTION OF TRANSPORT PROPERTIES OF PEMFC CATALYST LAYERS** **Ned Djilali** (Institute for Integrated Energy Systems, University of Victoria) Rnadhir Singh, Alireza Akhgar, Kyle Lange, Pang-Chieh Sui
16:20	*ORAL* **DETERMINATION OF MECHANICAL PROPERTIES OF LPCVD POLYCRYSTALLINE THIN-FILM SILICON CARBIDE LAYERS BASED ON ELECTRICALLY OPERATED MEMS TESTING DEVICES** **Radoslav Rusanov** (CR/ARY, Robert Bosch GmbH) Juergen Graf, Tino Fuchs, Achim Trautmann, Franziska Rohlfing, Roland Mueller-Fiedler, Heinz Riesch-Oppermann, Oliver Kraft	*ORAL* **MULTIPHASED METALLIC MATERIALS MADE BY SPARK PLASMA SINTERING (SPS): STUDY OF THE MICRO-MECHANISMS OF DEFORMATION BY IN SITU TENSILE TESTS AND X-RAY DIFFRACTION** **Tarik Sadat** (Lspm-Cnrs) David Tingaud, Damien Faurie, Guy Dirras	*ORAL* **TOPOLOGY OF IONIC TRANSPORT IN GLASSES: WATCHING MOVING CALCULATIONS** **Neville Greaves** (University of Cambridge) Zhongfu Zhou	*ORAL* **PHASE STABILITY VERSUS DECOMPOSITION IN COMPLEX PEROVSKITE SOLID SOLUTIONS FROM DFT STUDY** **David Fuks** (Materials Engineering Department, Ben Gurion University of the Negev) Maija Kukla, Yuri Mastrikov, Eugene Kotomin
16:40	*ORAL* **CREEP BEHAVIOR OF MAGNESIUM ALLOYS USING SMALL PUNCH TEST** **Miriam Lorenzo Bañuelos** (University of Burgos) Jesús Manuel Alegre Calderón, Isidoro Iván Cuesta Segura	*ORAL* **MICROMECHANICAL INVESTIGATION OF SOLDER JOINTS IN AUTOMOTIVE MICROELECTRONICS** **Bastian Philippi** (Max-Planck-Institut Für Eisenforschung GmbH) Andreas Schiessl, Angelika Schingale, Gerhard de hm	*ORAL* **MESOSCOPIC STATISTICAL MODELLING OF GRAIN SUBDIVISION DURING SEVERE PLASTIC DEFORMATION OF COMMERCIALLY PURE TITANIUM** **Marc Seefeldt** (KU Leuven, Department of Metallurgy and Materials Engineering (MTM)) Xiaodong Guo	*ORAL* **PROBING WATER TRANSPORT ACROSS PERFLUOROSULFONIC MEMBRANES BY IN SITU AND OPERANDO RAMAN MICROSPECTROSCOPY** **Stefano Deabate** (European Membrane Institute) Patrice Huguet, Arnaud Morin, Gérard Gebel, Yannick Lanteri, Zhé Peng, Anna-Katharina Sutor

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Symposium	A2II	A2III	A3II	B1I
Room	La Pinta	España 1	Giralda	Alamillo
Session Title	Nanocarriers	Multiferroics single phase: fundamentals II	New frontiers	Other advanced steels: Q&P steels
Chairperson	M. Hoffman and P. de la Presa	A. Bussmann-Holder	E. Treassi	A. Clarke
17:30	*INVITED / KEYNOTE* **MAGNETIC NANOPARTICLES AND FORMULATIONS FOR MRNA DE LIVERY** **Olga Mykhaylyk** (Institute of Experimental Oncology and Therapy Research, Klinikum rechts der Isar der Technischen Universität München) Yolanda Sanchez-Antequera, Bartosz Grześkowiak, Dialechti Vlaskou, Mehrije Frerizi, Johannes Geiger, Manish Aneja, Carsten Rudolph, Christian Plank	*INVITED / KEYNOTE* **ELECTROMAGNONS IN SPIN-DRIVEN FERROELECTRICS AND OPTICAL NONRECIPROCITY** **Andres Cano** (European Synchrotron Radiation Facility) Maxim Mostovoy	*INVITED / KEYNOTE* **SINGLE MOLECULE BIOELECTRONICS** **Philip Collins** (University of California, Irvine) Yongki Choi, Gregory Weiss	*HIGHLIGHT* **SCIENTIFIC CHALLENGES IN THE UNDERSTANDING OF Q&P MICROSTRUCTURES** **M.J. Santofimia** (Department of Materials Science and Engineering, de Ift University of Technology) M.G. Mecozzi, L. Zhao, J. Sietsma
17:50				*ORAL* **MICROSTRUCTURAL FEATURES OF INDUSTRIAL QUENCHING AND PARTITIONING STEELS** **Cecilia Föjer** (AM Global R&D) Jan Mahieu, Nicolas Bernier
18:10	*ORAL* **NEURONAL CELLS LOADED WITH PEI-COATED FE3O4 NANOPARTICLES FOR MAGNETICALLY-GUIDED NERVE REGENERATION** **M. Pilar Calatayud** (Instituto de Nanociencia de Aragón (INA) and de partamento de Física de la Materia Condensada Universidad de Zaragoza, Spain) Beatriz Sanz, Cristina Riggio, Vittoria Raffa, TeobaldoE. Torres, M. Ricardo Ibarra, Gerardo F. Goya	*ORAL* **EFFECT OF DIMENSIONAL CONSTRAINTS ON THE CONDUCTION AND MAGNETIC PROPERTIES OF MAGNETITE** **Ivan Bernal** (Instituto de Ciencia de Materiales de Madrid, CSIC) Silvia Gallego	*ORAL* **NEMATIC LIQUID CRYSTALS OF CARBON NANOTUBES AND GRAPHENE** **Camilo Zamora-Ledezma** (Instituto Venezolano de Investigaciones Cientificas (IVIC)) Christophe Blanc, Eric Anglaret, Cecile Zakri, Philippe Poulin,	*ORAL* **IN-SITU EBSD CHARACTERISATION OF MICROSTRUCTURAL CHANGES IN Q&P STEEL DURING MICRO-TENSILE TESTING** **Dorien de Knijf** (Department of Materials Science and Engineering, Ghent University) Roumen Petrov, Cecilia Föjer, Leo Kestens
18:30	*ORAL* **MAGNETIC LIPID NANOPARTICLES AS A MULTIMODAL NANOCARRIERS** **Joao Pedro Araujo** (IFIMUP-IN) Suellen Morales, Celia Sousa, Claudia Nunes, M Paz Fernandez-García, Salette Reis	*ORAL* **COMPETING FERROELECTRIC PHASES AND INCOMMENSURATE MAGNETIC ORDERS IN MULTIFERROIC MN1-XCOXWO4** **José Luis García-Muñoz** (Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Spain) Irene Urcelay-Olabarria, Eric Ressouche, Alexander Mukhin, Vsevolod Yu. Ivanov, Jessica Padilla, Vassil Skumryev	*ORAL* **MONITORING MICRO- AND NANO-SCALE DEFORMATION IN GRAPHENE OXIDE USING ATOMIC FORCE MICROSCOPY AND SYNCHROTRON MICRO FT-IR SPECTROSCOPY** **Congwei Wang** (Queen Mary University of London) Mark Frogley, Gianfelice Cinque, Asa Barber	*ORAL* **LOCAL DEFORMATION BEHAVIOR AND MECHANICAL PROPERTIES OF INDIVIDUAL PHASES IN A QUENCHED AND PARTITIONED STEEL** **Irene de Diego Calderon** (IMDEA Materials Institute, Getafe, Madrid, Spain) Dorien Knejf, Miguel Monclus, Jon Molina-Aldareguia, Cecilia Fojer, Ilchat Sabirov, Roumen Petrov
18:50	*ORAL* **MAGNETIC NANOPARTICLES FOR BIOTOXIN DETECTION: MICROCYSTIN-LR** **Begoña Espiña** (International Nanotechnology Laboratory) Begoña Espiña, Irene Pérez, Marcia Santos, Paulo Freitas	*ORAL* **STUDY OF THE INTRINSIC MAGNETIC PROPERTIES OF THE CO2MNO4 MULTIFERROIC DOPED WITH BISMUTH** **Paulo Noronha Lisboa-Filho** (Universida de Estadual Paulista, MAV – Laboratório de Materiais Avançados) Maria Elenice Dos Santos, Octavio Peña	EMPTY SLOT	*ORAL* **EFFECT OF MN ON Q&P CMNSI STEELS** **Andrea Di Schino** (Centro Sviluppo Materiali) Pablo Rodriguez-Calvillo, Ana Hernadez-Exposito, Jose María Cabrera
19:10	*ORAL* **EFFICIENT ECO-FRIENDLY DYE SORBENTS BASED ON BIOPOLYMER SURFACE FUNCTIONALIZED SUPERPARAMAGNETIC NANOPARTICLES** **Ana Luísa Daniel-Da-Silva** (University of Aveiro) Ana Margarida Salgueiro, Tito Trindade	*ORAL* **LUFE2O4 IS NOT FERROELECTRIC** **Sara Lafuerza Bielsa** (Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC-Universidad de Zaragoza, de partamento de Física de la Materia Condensada, Spain) Joaquín García Ruiz, Javier Blasco Carral, Gloria Subías Peruga, Ekaterina Pomjakushina, Kamizierz Conder	EMPTY SLOT	*ORAL* **MODELS FOR THE PREDICTION OF RETAINED AUSTENITE AFTER QUENCH & PARTITIONING ANNEALING CYCLES: THEORY VS. EXPERIMENT** **Richard Thiessen** (ThyssenKrupp Steel Europe) Cecilia Föjer

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Symposium	B1III	B1IV	B3I	B3II
Room	España 5	Andalucía 4	Andalucía 8	La Niña
Session Title	Thermodynamics and Phase Transformations	Irradiation	Biobased Polymers, Composites and Nanomaterials III	Fire retardant Polymers, Composites and Nanocomposites II
Chairperson	P. Tsakiropoulos	Ignacio Martin Bragado	Laura Peponi	Kandola B.
17:30	*ORAL* **MECHANICAL PROPERTIES AND DEFORMATION BEHAVIOR OF TIAL/ TI3AL LAMELLAR MICROSTRUCTURES: AN ATOMISTIC STUDY** **Mansour Kanani** (Interdisciplinary Centre for Advanced Materials Simulation, Ruhr-Universität Bochum) Rebecca Janisch, Alexander Hartmaier	*ORAL* **TOMOGRAPHIC ATOM PROBE STUDY OF UN- AND IRRADIATED ODS EUROFER STEEL** **Andrey Aleev** (Institute for Theoretical and Experimental Physics) Sergey Rogozhkin, Boris Chalyh, Michael Klimenkov, Timur Kulevoy, Rainer Lindau, Anton Moeslang, Aleksander Nikitin, Pavel Vladimirov, Aleksander Zaluzhnyi	*INVITED / KEYNOTE* **VEGETABLE OIL BASED EPOXY THERMOSETS** **Alice Mija** (University of Nice - Sophia Antipolis) Jean-Mathieu Pin, Nicolas Sbirrazzuoli	*INVITED / KEYNOTE* **FIRE RETARDANCY OF POLYMER NANCOMPOSITES** **De-Yi Wang** (Madrid Institute for Advanced Studies of Materials (IMDEA-Materials))
17:50	*ORAL* **LONG TERM THERMAL AGING OF ALLOY 625, A CANDIDATE MATERIAL FOR TUBE-TYPE RECEIVERS OF CENTRAL-TOWER SOLAR PLANTS** **Eneko Setien** (PSA-Ciemat) Jesus Fernandez, María Jesus Ariza, Monica Alvarez de Lara	*ORAL* **TRANSMISSION ELECTRON MICROSCOPIC STUDY OF NEUTRON IRRADIATED ODS EUROFER97 STEEL** **Murthy Kolluri** (Nuclear Research and Consultancy Group) Frans Berg, Lida Magielsen, Natalia Luzginova		
18:10	*ORAL* **AB INITIO INVESTIGATION OF POINT DEFECTS IN GAMMA1-CU9AL4 AND EFFECT ON ITS STABILITY** **Jaeyoung Kwon** (Université de Lille 1(UMET)) Marie-Noëlle Avettand-Fenoel, Ludovic Thuinet, Alexandre Legris, Rémy Besson	*ORAL* **CHARACTERIZATION OF THE EVOLUTION OF THE NANOSTRUCTURE OF ION IRRADIATED ODS FERRITIC STEELS BY ATOM PROBE TOMOGRAPHY** **Bertrand Radiguet** (Groupe de Physique des Matériaux) Constantinos Hatzoglou, Laurent Chaffron, Yves Serruys, Philippe Pareige, Fabrice Legendre	*ORAL* **MELT-PROCESSING, STRUCTURE AND PROPERTIES OF THERMOPLASTIC STARCH: EFFECT OF STORAGE TIME AND PLASTICIZERS ON THE STRUCTURAL STABILITY** **Hélène Schmitt** (Mines Douai) Adeline GUIDEZ, Prashantha Kalappa, Marie-France Lacrampe, Patricia Krawczak	*HIGHLIGHT* **IMPROVEMENT OF FIRE RETARDANCY OF POLYAMI DE 6 USING HIGH ASPECT RATIO TALCS COMBINED WITH MELAMINE COMPOUNDS** **José Marie Lopez Cuesta** (Pôle Matériaux Polymères Avancés, Centre des Matériaux des Mines D'Alès (C2MA))
18:30	*ORAL* **THE PERITECTOID DECOMPOSITION OF NB2CO7** **Frank Stein** (Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany) Jacques Lacaze	*ORAL* **INVESTIGATION INTO IRRADIATION EFFECTS IN ODS-ALLOYS USING ION IMPLANTATION AND MICROMECHANICAL TESTING.** **Eleanor Grieveson** (Department of Materials, University of Oxford) Steve Roberts	*ORAL* **INFLUENCE OF THE THICKENING AGENT ON MECHANICAL CHARACTERISTICS AND RELEASE PROPERTIES OF ALGINATE CAPSULES** **Laura Sanchez-Gonzalez** (Laboratoire D'Ingénierie des Biomolécules (LIBio). ENSAIA - Université de Lorraine) Ghazi Ben Messaoud, Stéphane Desobry	*ORAL* **PREPARATION OF XNBR-LDH NANOCOMPOSITES AND THEIR THERMAL, FLAME RETARDANT AND MECHANICAL PROPERTIES** **Amit Das** (Leibniz-Institut Für Polymerforschung)
18:50	*ORAL* **INTERMETALLIC PHASE FORMATION FROM NI/TI MULTILAYER THIN FILMS** **Maria Teresa Vieira** (CEMUC, de partamento de Engenharia Mecânica, Universida de de Coimbra, Portugal) Ana Sofia Ramos, André João Cavaleiro, Jerzy Morgiel	*ORAL* **DUAL BEAM IRRADIATION OF SPARK PLASMA SINTERED ODS FECR ALLOYS** **Isabell Schönitz** (HZDR) Frank Bergner, Cornelia Heintze, Thomas Weissgärber, Bernd Kieback, Andrea García-Junceda, Ahmed Shariq	*ORAL* **NANOSCALE BUCKLING DEFORMATION IN LAYERED COPOLYMER MATERIALS** **Michel Perez** (Univ. Lyon - INSA Lyon - MATEIS) Ali Makke, Olivier Lame, Jean-Louis Barrat	*ORAL* **AN EASY-TO-USE APPLICATION FOR PREDICTING THE BEHAVIOUR OF COMPOSITE MATERIALS** **Alessandro Pani** (Università Di Genova) Dario Boote
19:10	*ORAL* **PHASE TRANSFORMATIONS AND MICROSTRUCTURAL CHARACTERIZATION OF RU-NB INTERMETALLIC SHAPE MEMORY ALLOYS** **Laura Dirand** (Departamento de Física Aplicada II)	*ORAL* **THE EFFECT OF PROCESSING CONDITIONS ON THE GAS TRAPPING CAPABILITIES OF OXIDE DISPERSION STRENGTHENED STEELS** **Christopher Burrows** (University of Oxford Department of Materials) Michael Gorley, Paul Bagot, Steve Roberts	*ORAL* **SELF-ASSEMBLED ELECTROACTIVE POLYSACCHARIDE/POLYELECTROLYTE THIN FILMS** **Antti Viinikanoja** (University of Turku, Department of Chemistry) Terhi Huti, Markus Rasanen, Mikko Salomaki, Jukka Lukkari	EMPTY SLOT

TUESDAY 10 SEPTEMBER 2013 / PM2

	Symposium	B3III	B4II	C1I	C1II
	Room	Andalucía 5	Andalucía 2	España 3	Sevilla 3
	Session Title	Hybrid Polymer Nanocomposites II	Properties and Characterization 1	Hot Tearing	Non ferrous alloys
	Chairperson		P. Colombo	Jean Marie Drezet	F. de Geuser
17:30		*INVITED / KEYNOTE* **ANISOTROPIC MAGNETIC NANOCOMPOSITES: FABRICATION AND APPLICATIONS** **Despina Fragouli** (Nanophysics, Istituto Italiano di Tecnologia (IIT), Genova, Italy) Daniela Lorenzo, Athanassia Athanassiou	*INVITED / KEYNOTE* **TOMOGRAPHIC STUDY OF COARSENING IN TITANIUM WITH SUB-MICRON POROSITY** **David Dunand** (Northwestern University) Yu-chen Karen Chen-Wiegart, Eric Maire, Hidemi Kato, Xianghui Xiao, Francesco de Carlo, Jun Wang,	*HIGHLIGHT* **MOLECULAR DYNAMICS SIMULATION OF SEMI-SOLID STATE OF IRON** **Bernard Monasse** (Mines-Paristech - CEMEF) Christophe Pradille, Yvan Chastel	*HIGHLIGHT* **MECHANISMS OF NI(PT) SILICI DE FORMATION IN THIN FILMS** **Khalid Hoummada** (Aix-Marseille université, IM2NP-CNRS) Federico Panciera, Mike Elkousseifi, Dominique Mangelinck, Marion Descoins, Magalie Gregoire, Marc Juhel
17:50				*ORAL* **HIGH TEMPERATURE MECHANICAL BEHAVIOUR OF A NICKEL BASED ALLOY IN RELATION WITH HOT CRACKING SIMULATION DURING WELDING.** **Lionel Bouffier** (SIMAP, Grenoble INP, Saint-Martin d'Hères, FRANCE) Yves Bréchet, Michel Suery, Jean-Michel Carpreau	*ORAL* **REACTIVE DIFFUSION AND STRESSES IN SPHERICAL GEOMETRY - ATOM PROBE TOMOGRAPHY AND COMPUTER SIMULATION** **Zoltan Erdelyi** (Department of Solid State Physics, University of Debrecen, Debrecen, Hungary) Guido Schmitz
18:10		*ORAL* **MAGNETIC NANOCAPSULES BASED ON NATURAL POLYMERS** **Laura de Matteis** (Instituto de Nanociencia de Aragon, Universidad de Zaragoza) Xabier Lasheras, Rodrigo Fernandez-Pacheco, Maite Insausti, Clara Marquina, M. Ricardo Ibarra, Jesus M. de la Fuente	*ORAL* **THERMAL CONDUCTIVITY OF POROUS AND CELLULAR CERAMICS – INFLUENCE OF PORE SIZE, SHAPE AND CONNECTIVITY** **Willi Pabst** (ICT Prague) Eva Gregorová	*ORAL* **INTERPLAY OF GRAIN REFINEMENT, HOT TEARING SUSCEPTIBILITY AND SOLIDIFICATION OF ALUMINUM AND MAGNESIUM ALLOYS** **Comondore Ravindran** (Ryerson University) Francesco D'Elia, Abdallah Elsayed, Sophie Lun Sin	*ORAL* **KINETICS OF THE REVERSE MARTENSITE TRANSFORMATION IN NITI SHAPE MEMORY ALLOYS - DSC AND XRD STUDY** **Nikolay Zotov** (Max Planck Institute for Intelligent Systems) Margaret Koker, Vladimir Marzynkevitsch, Eric Mittemeijer
18:30		*ORAL* **MECHANICAL PROPERTIES OF HYBRID NANO-COMPOSITES BASED ON SEPIOLITE FIBERS ALIGNED BY A MAGNETIC FIELD** **Jéssica Alves-Marins** (Université de Nice-Sophia Antipolis, Laboratorie de Physique de la Matiére Condensée) Alice Mija, Jean-Mathieu Pin, Francoise Giulieri, Bluma Guenther Soares, Nicolas Sbirrazzuoli, Pascal Lancon, Georges Bossis	*ORAL* **ENHANCED HEAT TRANSFER USING OPEN CELLED ALUMINIUM FOAMS** **Faye Senior** (The University of Sheffield) Michael Preuss, Vincent Mathier, Russell Goodall	*ORAL* **EXPERIMENTAL STUDY AND MODELING OF PERCOLATION OF GLOBULAR-EQUIAXED GRAINS** **Christophe Mondoux** (Ecole Polytechnique Fédérale de Lausanne) Julie Fife, Michel Rappaz	*ORAL* **DISCONTINUOUS PRECIPITATION IN SILVER-COPPER ALLOYS** **Shirley Northover** (The Open University) Peter Northover, Alison Wilson
18:50		*ORAL* **LUMINESCENT LATEX PARTICLES LOADED WITH ANIONIC LANTHANI DE COMPLEXES : VERSATILE PLATFORMS FOR MULTICOLOUR OPTICAL CODING** **Elodie Bourgeat-Lami** (Université de Lyon, Laboratoire de Chimie, Catalyse, Polymères et Procédés (C2P2) Lyon) Nicolas Wartenberg, Olivier Raccurt, Daniel Imbert, Marinella Mazzanti	*ORAL* **MESOPOROUS SILICA MATERIALS FOR THERMAL INSULATION** **Yves Scudeller** (University of Nantes-CNRS, Institut des Matériaux Jean Rouxel) Yassine Belmoujahid, Magali Bonne, Donald Schleich, Yves Grohens, Benedicte Lebeau	*ORAL* **EFFECT OF B, C AND ZR ON THE CASTABILITY OF A DIRECTIONALLY SOLIDIFIED NICKELBASE SUPERALLOY IN-100** **Jacek Grodzki** (University of Erlangen, Institute of Science and Technology of Metals) Ralf Rettig, Ernst Affeldt, Robert F. Singer	*ORAL* **PHASE TRANSFORMATIONS IN A TI-6AL-4V + TIB ALLOY CHARACTERISED BY HIGH ENERGY X-RAY DIFFRACTION** **Ludovic Ropars** (EADS France, Innovation Works Dept.) Moukrane de hmas, Sophie Gourdet, David Tricker, Elisabeth Aeby-Gautier
19:10		*ORAL* **FLEXIBLE ONE-DIMENSIONAL PHOTONIC CRYSTALS BASED ON NANOPARTICLE MULTILAYERS FOR ULTRAVIOLET RADIATION PROTECTION PURPOSES** **José Raúl Castro Smirnov** (Instituto de Ciencia de Materiales de Sevilla) Mauricio Ernesto Calvo Roggiani, Hernan Ruy Miguez García	*ORAL* **A NOVEL FOAM APPLICATION: THERMAL ENERGY REUSE** **Erardo Elizondo Luna** (The University of Sheffield) Farzad Barari, Russell Goodall, Robert Woolley	*ORAL* **INVESTIGATION OF CONTRACTION BEHAVIOR OF A LOW ALLOY STEEL DURING AND AFTER SOLIDIFICATION** **Hossein Mehrara** (Materials Science and Engineering Dept., Delft University of Technology) Roumen Petrov, Dmitry Eskin, Laurens Katgerman	*ORAL* **MULTIPASS FORGING OF INCONEL 718 IN THE DELTA-SUPERSOLVUS DOMAIN: ASSESSING AND MODELING MICROSTRUCTURE EVOLUTION** **Meriem Zouari** (Mines Paris Tech, CEMEF - Centre de Mise en Forme des Matériaux) Sébastien Rousselle, Roland Logé, Nathalie Bozzolo

TUESDAY 10 SEPTEMBER 2013 / PM2

Symposium	C4I	D1I	D1III	D2I
Room	Sevilla 2	Andalucía 3	España 4	Sevilla 1
Session Title	Protective Coatings and Thin Films VI	Physical metallurgy	Tomography: Novel Frontiers in Materials Research	Micromechanics
Chairperson	J. Oliveira	R. Ulfig	Andy King	Jon Molina-Aldareguia
17:30	*ORAL* **GEL-GLASS LIQUID CRYSTAL COMPOSITE: ELABORATION OF HIGH PERFORMANCE ELECTRO-OPTICAL FILMS** **Aigi Salundi** (Institute of Physics, University of Tartu) Martin Timusk, Martin Järvekülg, Rünno Lõhmus, Ilmar Kink, Kristjan Saal	*HIGHLIGHT* **COMBINING STRUCTURAL AND CHEMICAL INFORMATION ON THE NM SCALE BY CORRELATIVE TEM AND APT CHARACTERIZATION** **Michael Herbig** (Max-Planck-Institut für Eisenforschung GmbH) Pyuck-Pa Choi, Dierk Raabe	*HIGHLIGHT* **NANO-COMPUTED TOMOGRAPHY (CT) AND NANO-DIFFRACTION CT WITH DEEP SUB-MICROMETRE RESOLUTION TO DESCRIBE LOW ENRICHED NUCLEAR FUELS** **Anne Bonnin** (ESRF, Grenoble , France) Jonathan Wright, Rémi Tucoulou, Peter Cloetens, Hervé Palancher	*ORAL* **ALUMINIUM MICROFIBRES** **Jerome Krebs** (Ecole Polytechnique Federale de Lausanne) Suzanne Verheyden, Andreas Mortensen
17:50	*ORAL* **STUDY OF THE CORROSION PROPERTIES OF COATINGS OBTAINED BY PLASMA ELECTROLYTIC OXIDATION ON MG ALLOYS** **Luca Pezzato** (University of Padua) Katya Brunelli, Manuele Dabalà	*ORAL* **ATOM PROBE CHARACTERIZATION OF SR-MODIFIED ALSI FOUNDRY ALLOYS** **Jenifer Barrirero** (Saarland University) Michael Engstler, Frank Mücklich	*ORAL* **ASSESSING THE MICROSTRUCTURE IN SELECTIVE LASER MELTED NITI** **Bert Müller** (Biomaterials Science Center, University of Basel) Therese Bormann, Felix Beckmann, Hans de yhle, Michael Schinhammer, Michael de Wild, Peter Thalmann	*ORAL* **MECHANICAL BEHAVIOR OF QUASI ONE-DIMENSIONAL NANOSTRUCTURES** **Charlotte Ensslen** (Karlsruhe Institute of Technology) Reiner Mönig, Oliver Kraft
18:10	*ORAL* **CHARACTERIZATION OF MICRO-ARC OXIDES PRODUCED IN DIFFERENT ELECTROLYTES ON AZ31 MAGNESIUM ALLOY** **Massimiliano Bestetti** (Politecnico Di Milano) Anna Da Forno, Simone Umberto Mariani	*ORAL* **INVESTIGATING CATALYTIC NANOPARTICLES BY ATOM PROBE TOMOGRAPHY** **Paul Bagot** (Department of Materials, University of Oxford) Tong Li, Edman Tsang, Michael Moody	*ORAL* **TOWARDS SUSTAINABLE BIOFUELS PRODUCTION: X-RAY PHASE TOMOGRAPHY APPLIED TO BIOMASS CHARACTERIZATION** **Augusta Isaac** (Pontifícia Universida de Católica de Minas Gerais) George Jackson da Rocha, Vinicius Barboza, André Hilger, Ingo Manke	*ORAL* **UNIAXIAL COMPRESSION OF SILICA PILLARS: THE PLASTIC REGIME** **Etienne Barthel** (CNRS / Saint-Gobain) Rémi Lacroix, Guillaume Kermouche, Jérémie Teisseire
18:30	*ORAL* **EFFECTS OF SOME ELECTRICAL PARAMETERS ON THE EFFICIENCY OF THE PLASMA ELECTROLYTIC OXIDATION OF ALUMINIUM ALLOYS** **Julien Martin** (Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour - Parc de Saurupt, Nancy - France) Alexandre Nominé, Irina Shchedrina, Alexandre Gregorievitch Rakoch, Gérard Henrion, Thierry Czerwiec, Thierry Belmonte	*ORAL* **EXPERIMENTAL ARTEFACTS OCCURRING DURING ATOM PROBE TOMOGRAPHY ANALYSIS OF NANO-OXIDE STRENGTHENED STEELS** **Constantinos Hatzoglou** (Groupe de Physique des Matériaux (GPM) UMR CNRS 6634) Bertrand Radiguet, Francois Vurpillot, Philippe Pareige	*ORAL* **MGB2 CHARACTERIZATION BY X-RAY CONE-BEAM MICRO-TOMOGRAPHY** **T. Craciunescu** (National Institute for Lasers, Plasma and Radiation Physics, Plasma Physics, INFLPR, Bucharest-Magurele, Romania) I. Tiseanu, P. Badica, G.V. Aldica, M. Rindfleisch	*ORAL* **PROBING THE MICROSCOPIC STRENGTH OF ALUMINA REINFORCEMENTS** **Václav Pejchal** (Laboratory of Mechanical Metallurgy, Institute of Materials, École Polytechnique Fédérale de Lausanne (EPFL)) Martin Mueller, Goran Zagar, Andreas Rossoll, Cyril Dénéréaz, Raphael Charvet, Willy Dufour, Andreas Mortensen
18:50	*ORAL* **TRANSPARENT LUMINESCENT FILMS BASED ON SPRAY-DEPOSITION OF COLLOIDAL NANOPARTICLES** **Geraldine Dantelle** (CNRS - Laboratoire de Physique de La Matière Condensée, Ecole Polytechnique) Blaise Fleury, Jean-Pierre Boilot, Thierry Gacoin	*ORAL* **PHASE SEPARATION OF THE GAMMA´ PHASE IN A NI-AL-TI MODEL ALLOY** **Florian Vogel** (Helmholtz Zentrum Berlin) Nelia Wanderka, John Banhart	*ORAL* **X-RAY NANO-HOLOTOMOGRAPHY APPLIED TO SOLID OXIDE FUEL CELLS MATERIALS** **Julie Villanova** (Esrf) Peter Cloetens, Heikki Suhonen, Jérôme Laurencin, François Usseglio-Viretta, Gérard de lette, Pierre Bleuet, David Jauffrès, Christophe Louis Martin	*ORAL* **STUDY OF THE MICRO-SCALE DEFORMATION OF LOW-DENSITY THERMALLY BONDED NONWOVENS BY DIGITAL IMAGE ANALYSIS** **Francesco Battocchio** (University of Cambridge - Engineering Department) Michael P. F. Sutcliffe
19:10	*ORAL* **PHOTOCHROMIC SENSING OF DAMAGE IN SMART MATERIALS** **Marinella Levi** (Politecnico Di Milano - Chemistry, Materials and Chemical Engineering Giulio Natta) Barbara Di Credico, Massimo Micocci, Francesca Ostuzzi, Giovanni Postiglione, Stefano Turri	*ORAL* **USING ATOM PROBE TOMOGRAPHY TO OBSERVE NB(C, N) GP ZONE MORPHOLOGY AND ORIENTATION RELATIONSHIPS IN STEEL** **Andrew Breen** (The Australian Centre for Microscopy and Microanalysis, The University of Sydney) Kelvin Xie, Julie Cairney, Michael Moody, Baptiste Gault, Simon Ringer,	*ORAL* **SWELLING OF NEUTRON IRRADIATED BERYLLIUM AFTER POST IRRADIATION ANNEALING** **Claudio Ferrero** (European Synchrotron Radiation Facility, Grenoble, France) Pavel Vladimirov, Vladimir Chakin, Petr Kurinskiy, Anton Moeslang, Romeu Pieritz, Tim Weitkamp	*ORAL* **A NEW APPROACH TO EVALUATE CRYSTALLIZATION AND SPHERULITE MORPHOLOGY OF EVA USING PEAK FORCE QUANTITATIVE NANO-MECHANICAL AFM** **Elena Xuriguera** (Universitat de Barcelona) Jordi Díaz, María Niubó, Mercè Segarra

TUESDAY 10 SEPTEMBER 2013 / PM2

Symposium	**D2II**	**D3II**	**E1III**
Room	**Andalucía 1**	**Cartuja**	**España 2**
Session Title	**In-situ Micro- and Nano-Mechanical Characterisation III**	**Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior VI**	**Solid Ionic Conductors II**
Chairperson			**P. Knauth**
17:30	*ORAL* **INTERNAL STRESS IN FREESTANDING STRUCTURES OF ULTRASENSITIVE NEMS AND MEMS** **Rolf Grieseler** (TU Ilmenau, Chair Materials for Electronics) Steffen Michael, Bernd Hähnlein, Jörg Petzold, Mike Stubenrauch, Peter Schaaf	*ORAL* **EFFECT OF TRAPPING ON HYDROGEN DIFFUSION KINETICS** **Jiri Svoboda** (Institute of Physics of Materials, Academy of Sciences of The Czech Republic) Franz Dieter Fischer, Gregor Mori	*INVITED / KEYNOTE* **MIXED IONIC CONDUCTION IN ELECTROLYTES FOR FUEL CELLS** **Fernando Marques** (University of Aveiro)
17:50	*ORAL* **IN-SITU MECHANICAL INVESTIGATIONS ON NANOCOMPOSITES USING ATOMIC FORCE MICROSCOPY** **Barber Asa** (Queen Mary University of London) Bailey Russell	*ORAL* **DELAMINATION AND BUCKLING OF THIN FILMS FROM AN INTERFACE STEP** **Antoine Ruffini** (P' Institute) Julien Durinck, Jérôme Colin, Christophe Coupeau, Jean Grilhé	
18:10	*ORAL* **REAL-TIME RAMAN SPECTROSCOPY MEASUREMENTS TO STUDY THE UNIAXIAL TENSION OF SEMI-CRYSTALLINE POLYMERS** **Julien Martin** (Université de Lorraine, UMR 7198 CNRS, Institut Jean Lamour – Département Sciences et Ingénierie des Matériaux et de la Métallurgie, Parc de Saurupt, Nancy) Marc Ponçot, Jean-Marie Hiver, Abdesselam Dahoun, Patrice Bourson	*ORAL* **INVESTIGATION OF THE DEFORMATION BEHAVIOR OF BICRYSTALS: MODELING AND EXPERIMENTS** I**driss Tiba** (Department of Material Sciences and Methods-Saarland University) Thiebaud Richeton, Stéphane Berbenni, Horst Vehoff	*HIGHLIGHT* **ION TRANSPORT IN MEMBRANES FOR FUEL CELLS AND BATTERIES** **Michael Marino** (Max Planck Institute for Solid State Research)
18:30	**EMPTY SLOT**	*ORAL* **PHASE FIELD MODELING OF CRACK-CRACK INTERACTION** **Denis Pilipenko** (Bayreuth University) Michael Fleck, Martin Lautenschläger, Heike Emmerich	*ORAL* **DOPED LANTHANUM MOLYBDATES: LOW-TEMPERATURE SYNTHESIS AND CHARACTERIZATION** **Tamara Kharlamova** (Tomsk State University) Svetlana Pavlova Yulia Bespalko, Tamara Krieger, Vladislav Sadykov, Yurii Chesalov, Artem Ulihin, Nikolai Uvarov
18:50	**EMPTY SLOT**	*ORAL* **RELATIONSHIP BETWEEN GRAIN SIZE AND SHAPE IN NORMAL GRAIN GROWTH; A PHASE-FIELD STUDY** **Reza Darvishi Kamachali** (ICAMS, Ruhr-University Bochum, Germany) Ingo Steinbach	*ORAL* **CROSS-LINKED SULFONATED AROMATIC POLYMERS FOR FUEL CELLS APPLICATION** **Maria Luisa Di Vona** (University of Roma Tor Vergata, Dip. Scienze Tecnologie Chimiche)
19:10	**EMPTY SLOT**	**EMPTY SLOT**	**EMPTY SLOT**

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WEDNESDAY 11 SEPTEMBER 2013 / AM2

Symposium	A2III	A3I	A4II	B1III
Room	España 1	Giralda	La Pinta	Alamillo
Session Title	Multiferroics single phase: novel materials	Carbon-containing Composites and Materials I	Nanopowders for Applications in Biology, Medicine, Photonics and Photovoltaics I	Structure, Processing and Mechanical Properties
Chairperson	A. Cano	Juan J. Vilatela	Eva Goldys	D. Morris and S. Milenkovic
11:00	*ORAL* **CRYSTAL CHEMISTRY OF BA2LNFENB4O15 (LN = RARE EARTH) TTBS : OPPORTUNITIES FOR MULTIFUNCTIONNAL MATERIALS** **Michael Josse** (Université Bordeaux 1 / ICMCB-CNRS) Marjorie Albino, Pierre Heijboer, Romain Bodeux, Philippe Veber, Matias Velazquez, Dominique Michaue, U-Chan Chung-Seu, Alain Pignolet, Cathy Elissalde	*ORAL* **REMOVAL OF ANTIBIOTICS FROM WATER USING SEWAGE SLUDGE DERIVED COMPOSITE MATERIALS** **Teresa Bandosz** (Chemistry department, The City College of New York) Mykola Seredych, Pengfei Zhang, Rui Ding	*INVITED / KEYNOTE* **NANOPARTICLE BIOPROBES FOR ADVANCED BIOIMAGING AND BIOSENSING** **Ewa Goldys** (MQ BioFocus Reseach Centre, Macquarie University) Andrei Zvyagin, Dayong Jin, Andrew Edmonds, Mushtaq Sobhan, Wei de ng, Jiangbo Zhao, Yqing Lu	*HIGHLIGHT* **STRUCTURE AND MECHANICAL PROPERTIES OF LONG PERIOD STACKING ORDERED INTERMETALLIC PHASES IN THE MG-AL-GD SYSTEM** **Haruyuki Inui** (Kyoto University) Kyosuke Kishida
11:20	*ORAL* **STUDY OF MULTIFERROIC LUMN1±ZO3±Δ (0.00 ≤ Z ≤ 0.08), BREAKING THE GEOMETRIC MAGNETIC FRUSTRATION BY SELF-DOPING** **Fabio Gabriel Figueiras** (Physics de p. & CICECO, Univ. Aveiro) D. Karpinsky, A. Baghizadeh, P. B. Tavares, Soma Das, J. Agostinho Moreira, A. Kholkin, J. Vieira, V. B. Amaral	*ORAL* **GRAPHITIZED CARBONS OBTAINED THROUGH CATALYSIS DURING THE PYROLYSIS PROCESS.** **Antonio Gutierrez-Pardo** (University of Seville, Spain) Joaquín Ramirez-Rico, Julian Martinez-Fernandez		*ORAL* **ON THE INFLUENCE OF NON-STOICHIOMETRIC COMPOSITION ON FRACTURE TOUGHNESS, HARDNESS AND YOUNG'S MODULUS OF SX-NIAL** **Ralf Webler** (University Erlangen-Nürnberg) Steffen Neumeier, Mathias Göken
11:40	*ORAL* **PHYSICAL PROPERTIES OF NEW MIXED VALENCE LIMN2TEO6 COMPOUND** **Alexander Kurbakov** (Petersburg Nuclear Physics Institute, National Research Centre) Vladimir Nalbandyan, Elena Zvereva, Christine Martin	*ORAL* **DESIGNING AND GUIDING THE SYNTHESIS OF C-BASED NANOSTRUCTURED COMPOUNDS BY FIRST-PRINCIPLES COMPUTER SIMULATIONS** **Gueorgui Gueorguiev** (Linköping University, IFM) Cecilia Goyenola, Sven Stafström, Lars Hultman, Renato dos Santos, Roberto Rivelino, Fernando Mota	*HIGHLIGHT* **UP-CONVERTING NANOPARTICLES IN BIOLOGY AND MEDICINE: PROPERTIES AND CHALLENGES** **Artur Bednarkiewicz** (Wroclaw Reseach Centre EIT+) Dominika Wawrzyńczyk, Marcin Nyk, Katarzyna Prorok, Anna Gnach, Malgorzata Misiak, Bartlomiej Cichy, Marek Samoæ, Wieslaw Strêk	*ORAL* **MECHANICAL BEHAVIOUR OF THE NIAL REINFORCED WITH W FIBERS** **Srdjan Milenkovic (**IMDEA Materials Institute) André Schneider
12:00	*ORAL* **STRUCTURE AND MAGNETIC PROPERTIES OF BA SUBSTITUTED BI2FE4O9 PARTICLES** **Juhong Miao** (Department of Physics, University of Coimbra) Jingzhong Xiao, José Paixao, Manuela Silva	*ORAL* **ADVANCED MESOPOROUS MATERIALS FROM NITRILE FUNCTIONALISED IONIC PRECURSORS** **Jens Peter Paraknowitsch** (Technische Universität Berlin) Sophie Kücken, Xenia Erler, Björn Wienert, Oyunbileg Sukhbat, Daniel Hagemeyer, Arne Thomas	*HIGHLIGHT* **A FEW APPLICATIONS OF NANO-STRUCTURED POROUS SILICON IN THE FIELD OF BIOMEDICINE** **Raúl J. Martín-Palma** (Universidad Autónoma de Madrid)	*ORAL* **STRUCTURE AND PROPERTIES OF REFRACTORY HIGH-ENTROPY ALLOYS** **Soumyadipta Maiti** (ETH Zurich) Walter Steurer
12:20	*ORAL* **ROOM TEMPERATURE MAGNETOELECTRIC COUPLING IN MOLECULAR MULTIFERROIC MATERIALS** **Prashant Jain** (Los Alamos National Laboratory) Vivien Zapf	*INVITED / KEYNOTE* **CARBON NANOTUBES FIBER MICROELECTRODES FOR ENERGY PRODUCTION AND CONVERSION** **Anne-Sophie Michardiere** (Crpp) Sebastien Gounel, Cintia Mateo, Nicolas Mano, Philippe Poulin	*HIGHLIGHT* **CONTROLLING LIGHT-HARVESTING WITH PLASMONS: SPECTROSCOPY OF HYBRID NANOSTRUCTURES** **Sebastian Mackowski** (Institute of Physics, Nicolaus Copernicus University)	*ORAL* **SELF-PROPAGATING SYNTHESIS OF INTERMETALLICS CONTAINING ALUMINUM OR MAGNESIUM** **Elzbieta Godlewska** (AGH University of Science and Technology) Ryszard Mania, Krzysztof Mars, Stefan Szczepanik
12:40	EMPTY SLOT		*HIGHLIGHT* **LINKER-MEDIATED ASSEMBLY OF GOLD NANOPARTICLES INTO MULTIMERIC MOTIFS AND INTERACTIONS OF PROTEINS WITH ZNO.** **Marek Cieplak** (Institute of Physics, Polish Academy of Sciences)	*ORAL* **SYNTHESIS OF ORDERED B2-NIAL BY MECHANICAL ALLOYING** **Arcadio Varona Caballero** (IMDEA Materials Institute) Srdjan Milenkovic Mohammad Ali Jabbari

WEDNESDAY 11 SEPTEMBER 2013 / AM2

Symposium	B3II	B3III	B4I	B4II
Room	La Niña	Andalucía 5	Cartuja	Andalucía 8
Session Title	Fire retardant Polymers, Composites and Nanocomposites III	Hybrid Polymer Nanocomposites III	Multifunctional hybrid materials discovery and characterization	Properties and Characterization 2
Chairperson	Gaan S.		Jin-Chong Tan	J. de Hosson
11:00	*HIGHLIGHT* **SYNERGY BETWEEN COMPOSITION AND STRUCTURE TO PRODUCE HIGHLY EFFICIENT INTUMESCENT FLAME RETARDANT COATING** **Abdelghani Laachachi** (CRP Henri Tudor) Vincent Ball, Kadir Apaydin, Valérie Toniazzo, David Ruch	*INVITED / KEYNOTE* **METALLIC OXO-CLUSTERS-POLY(BUTYL ACRYLATE) AS NEW DYNAMERS FOR THE BUILD UP OF SMART HYBRID MATERIALS WITH EFFICIENT SELF-HEALING PROPERTIES** **Laurence Rozes** (Université Pierre Et Marie Curie, Lab. Chimie de La Matière Condensée de Paris) François Potier, François Ribot, Clément Sanchez, Alain Guinault, Stéphane de lalande	*ORAL* **SYNTHESIS OF MULTIFUNCTIONAL HYBRID MATERIALS BY ASSEMBLING POROUS IRON(III) CARBOXYLATE (MIL-100(FE)) WITH MAGHEMITE NANOPARTICLES FOR BIOMEDICAL APPLICATIONS** **Nathalie Steunou** (Institut Lavoisier, UMR CNRS 8180, UVSQ) Florent Bridoux, Patricia Horcajada, Christian Serre	*INVITED / KEYNOTE* **CERAMIC FOAMS AND LATTICES UNDER COMPRESSION: THE EFFECT OF FOAM MORPHOLOGY AND LOAD DIRECTION** **Alberto Ortona** (Supsi-ICIMSI) Claudio D'Angelo
11:20	*ORAL* **ENHANCED FLAME RETARDANCY OF LDH/POLYOLEFIN NANOCOMPOSTIES** **Burak Kutlu** (Leibniz Institut Für Polymerforschung Dresden E.V.) Nian-Jun Kang, de -Yi Wang, Andreas Leuteritz		*ORAL* **NEW HOMOCHIRAL MOFS FROM AMINO ACIDS** **Michael Sartor** (Institute of Inorganic and Applied Chemistry, University of Hamburg) Frank Hoffmann, Michael Fröba	
11:40	*ORAL* **EFFECT OF PURE AND ALKYLATED MULTI-WALL CARBON NANOTUBES ON THE PHYSICOCHEMICAL PROPERTIES OF IPP** **Ifigenia Grigoriadou** (Aristotle University of Thessaloniki) Maria Neratzaki, Dimitrios Bikiaris	*ORAL* **ROOM-TEMPERATURE SELF-HEALING POLYURETHANE ELASTOMER** **Ibon Odriozola** (IK4-CIDETEC) Alaitz Rekondo, Roberto Martín, Alaitz Ruiz de Luzuriaga, Germán Cabañero	*HIGHLIGHT* **MAGNETOELECTRIC COUPLING IN MULTIFERROIC METAL-ORGANIC-FRAMEWORKS (MOFS)** **Prashant Jain** (Los Alamos National Laboratory)	*ORAL* **DEVELOPMENT AND CHARACTERISATION OF PLAIN AND CARBON STEEL BAR REINFORCED AL-ALLOY FOAMS** **Isabel Duarte** (Department of Mechanical Engineering, University of Aveiro) Mónica Oliveira, Matej Vesenjak, Lovre Krstulovic-Opara
12:00	*ORAL* **PREPARATION AND PROPERTIES OF FLAME RETARDANT ETHYLENE PROPYLENE DIENE RUBBER (EPDM) BY LAYERED DOUBLE HYDROXIDE AS FILLERS** **Debdipta Basu** (Leibniz-Institut Für Polymerforschung Dresden E.V.) Amit Das, de -Yi Wang, Jinu Jacob George, Klaus Werner Stoeckelhuber, Udo Wagenknecht, Gert Heinrich	*ORAL* **SYNTHESIS OF TIO2 CORE-SHELL/ NANOCOMPOSITE CONTAINING HYDROPHOBIC POLYMERS** **Marino Malavolti** (Department of Chemistry Ugo Schiff, University of Florence) Antonella Salvini, Melissa Arcuri, Francesca Sordi, Rosangela Oliva, Cristiana Giordano	*ORAL* **NEW ZR(IV) AND HF(IV) BASED METAL-ORGANIC FRAMEWORKS FUNCTIONALIZED WITH LEWIS BASE SITES: SYNTHESIS, CHARACTERIZATION AND GAS-SORPTION PROPERTIES** **Ioannis Bratsos** (N.C.S.R.) Ioannis Spanopoulos, Georgia Charalambopoulou, Dionisios Vourloumis, Theodoros Steriotis, Pantelis Trikalitis	*ORAL* **MECHANICAL CHARACTERIZATION OF HIGHLY POROUS CERAMICS FOR CATALYST SUPPORTS** **Deborah Staub** (IFP Energies Nouvelles - Rond-point de l'échangeur de Solaize, France) Sylvain Meille, Vincent Le Corre, L. Rouleau, Jerome Chevalier
12:20	*ORAL* **ONLINE CONSOLIDATION OF THERMOPLASTIC COMPOSITES BY ULTRASONIC WAVE PROPAGATION** **Francesca Lionetto** (Department of Engineering for Innovation) Alfonso Maffezzoli	*ORAL* **INCORPORATION OF TITANATE NANOTUBES INTO POLYMER MICROFIBRES USING ELECTROSPINNING** **Ruben Porras** (University of Southampton) Dmitry Bavykin, Jurgita Zekonyte, Frank Walsh, Robert Wood	*ORAL* **FORMATION BEHAVIOUR OF LITHIUM-BASED INORGANIC-ORGANIC FRAMEWORKS** **Hamish Yeung** (Cambridge University) Monica Kosa, Anthony Cheetham	*ORAL* **MECHANICAL CHARACTERISATION OF AUXETIC FIBRE NETWORKS** **Suresh Neelakantan** (University of Cambridge) Wolfram Bosbach, Athina Markaki
12:40	EMPTY SLOT	*ORAL* **GRAPHENE NANOSHEETS AS NUCLEATING AGENT IN IN SITU IPP AND IPP/C8 BASED NANOCOMPOSITES** **Rosario Benavente** (Instituto de Ciencia y Tecnología de Polímeros (ICTP-CSIC), Spain) Marcéo A. Milani, Griselda B. Galland, Raúl Quijada, Ernesto Pérez, María L. Cerrada	*ORAL* **INTRINSIC ELECTRICAL CONDUCTIVITY OF METAL ORGANIC POLYMER CHAINS** **Cristina Gomez-Navarro** (Universidad Autonoma de Madrid) Cristina Hermosa, Jose Soler, Jose Vicente Alvarez, Julio Gomez-Herrero, Felix Zamora	*ORAL* **USE OF INSTRUMENTED INDENTATION TEST TO CHARACTERIZE THE IN-VITRO DEGRADATION OF CAP CEMENTS** **Sylvain Meille** (INSA LYON - MATEIS Laboratory) Philippe Clément, Solène Tadier, Jérôme Chevalier

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Symposium	C1I	C1II	C3I	C3III
Room	Andalucía 3	Sevilla 3	Andalucía 1	Andalucía 4
Session Title	High temperature materials (Oxides, ceramics, glasses)	Phase transformation-general I	Tailored Ma de Functional Materials	Processing of Ceramics and their Mechanical Properties I
Chairperson	J. Peña	D. Blavette	Kazumi Kato	Arturo Domínguez
11:00	*INVITED / KEYNOTE* **IMPROVING BLUE PHOSPHOR BAM:EU THROUGH FLUX-ASSISTED CRYSTALLIZATION** **Gilles Wallez** (LCMCP, UPMC-Chimie ParisTech) Arnold Lacanilao, Laurent Binet, Valérie Buissette, Thierry Le Mercier, Léo Mazerolles, Pierre Dubot, Bertrand Pavageau, Laurent Servant	*HIGHLIGHT* **REVISITING THE RECRYSTALLIZATION KINETICS OF PURE CU: A COMBINED EXPERIMENTAL AND COMPUTATIONAL STUDY** **Eric A. Jägle** (Max-Planck-Institut Für Eisenforschung GmbH) Eric J. Mittemeijer	*INVITED / KEYNOTE* **MECHANOCHEMICAL SYNTHESIS OF NANOCARBONS AND CERAMIC NANOPARTICLES BY A HIGH-ENERGY BALL-MILLING** **Satoshi Ohara** (Osaka University) Zhenquan Tan, Kazuhiro Yamamoto, Nan Qiu, Takeshi Hashishin	*INVITED / KEYNOTE* **WEAR-RESISTANT NANOSTRUCTURED SIC CERAMICS** **Óscar Borrero-López** (Universidad de Extremadura) Esther Ciudad, Estíbaliz Sánchez-González, Ángel Luis Ortiz, Fernando Guiberteau, Mats Nygren
11:20		*ORAL* **MODEL OF FCC-BCC MARTENSITIC TRANSFORMATION BASED ON PITSCH DISTORTION** **Cyril Cayron** (Cea)		
11:40	*ORAL* **OBTAINING OF ANTICORROSION PIGMENT PHOSPHATE** **Kinga Łuczka** (West Pomeranian University of Technology In Szczecin) Barbara Grzmil	*ORAL* **3D TOMOGRAPHY OF TOPOLOGICALLY CLOSE PACKED PHASES IN HIGH REFRACTORY NICKEL-BASE SUPERALLOYS** **Kamil Matuszewski** (Institute of Science and Technology of Metals WTM, Department of Materials Science and Engineering,Univeristy of Erlangen-Nuremberg FAU) Ralf Rettig, Robert Singer	*ORAL* **SYNTHESIS AND CHARACTERIZATION OF COLLOIDAL SOLUTIONS, NANOPARTICLES AND THIN FILMS OF @ZNO AND @SIO2 NANOMATERIALS** **Fabien Grasset** (UMR 6226 CNRS-Université de Rennes 1) Tangi Aubert, Nicolas Nearambourg, Chrystelle Neaime, Stéphane Cordier, Michel Mortier, Pascal Gredin, Noriko Saito, Ohashi Naoki, Hajime Haneda	*ORAL* **MICROSTRUCTURAL DESIGN OF SIC CERAMICS FOR SLIDING WEAR RESISTANT APPLICATIONS UNDER DIESEL FUEL LUBRICATION** **Esther Ciudad** (Universidad de Extremadura) Óscar Borrero-López, Ángel Luis Ortiz, Fernando Guiberteau
12:00	*ORAL* **TRANSITION OF METAL ALKOXIDE JETS INTO SOLID METAL OXIDE FIBERS VERSUS MICROTUBES.** **Kelli Hanschmidt** (University of Tartu, Institute of Physics) Marko Part, Tanel Tätte, Erwan Rauwel, Vadim Kessler	*ORAL* **NUMERICAL SIMULATION OF PHASE TRANSFORMATION KINETICS DURING SOLIDIFICATION AND HEAT TREATMENTS IN NI-BASE SUPERALLOYS** **Luc Rougier** (EPFL) Alain Jacot, Charles-André Gandin, Paolo di Napoli, Damien Ponsen, Virginie Jaquet	*ORAL* **THE FEASIBILITY OF AEROSOL ROUTE IN THE OPTICALLY ACTIVE NANOPARTICLES PROCESSING** **Olivera Milosevic**(Institute of Technical Sciences of Serbian Academy of Sciences and Arts) Lidija Mancic, Maria Eugenia Rabanal, Satoshi Ohara	*ORAL* **COLLOIDAL PROCESSING OF NANO AND MICRO SIC POWDERS** **Santiago de -Bernardi Martin** (INSA de Lyon, MATEIS UMR CNRS) Vincent Garnier, Yves Jorand, Gilbert Fantozzi, Guillaume Bonnefont, Briac Lanfant, Yann Leconte, Thi-Huyen-Tram Pham, Sophie Le Gallet, Frédéric Bernard
12:20	*ORAL* **THE TRANSITORY PHASE IN CEMENTITIOUS MATERIALS: INFLUENCE OF THE AGITATION TIME ON SOME PROPERTIES OF THE RESULTING MATERIAL** **Marta Castellote** (Ietcc-Csic) Angel Castillo, Isabel Martínez, Francisco Rozas	*ORAL* **ON THE PERSISTENCE OF AL4CU9 IN NONEQUILIBRIUM PROCESSES** **Jaeyoung Kwon** (Université de Lille 1(UMET)) Marie-Noëlle Avettand-Fenoel, Ludovic Thuinet, Alexandre Legris, Rémy Besson	*ORAL* **SYNTHESIS AND LUMINESCENCE PROPERTIES OF MULTIFUNCTIONAL AG/Y2O3: EU3+ HYBRID NANOSTRUCTURES WITH ZERO DIMENSION** **Maria Eugenia Rabanal** (Universidad Carlos III) Olivera Milosevic, Luz Gomez-Villalba, Ignacio Barroso	*ORAL* **PRESSURELESS PREPARATION OF SUPERHARD DIAMOND-SILICON CARBIDE CERAMIC COMPOSITES** **Björn Matthey** (Fraunhofer Institute for Ceramic Technologies and Systems IKTS) Mathias Herrmann
12:40	*ORAL* **SINTERED STUDY OF 316L STAINLESS STEEL NANOPOWDERS USING SPARK PLASMA SINTERING PROCESS** **Bassem Mouawad** (Mateis Laboratory) Damien Fabregue, Michel Perez, Martine Blat, Frederic de Labrouille, Christophe Domain, Cedric Pokor	*ORAL* **THE INFLUENCE OF SIZE ON THE COMPOSITION OF COHERENT NANO-PRECIPITATES: THERMODYNAMIC PREDICTIONS VERSUS EXPERIMENTS** **Manon Bonvalet** (Groupe de Physique des Matériaux (GPM) UMR CNRS 6634) Xavier Sauvage, Didier Blavette	*ORAL* **CHARACTERIZATIONS FOR BIOGENIC NANO CRYSTALLINE MAGNETITE IN TEETH OF CHITON WITH X-RAY ANALYSES** **Chiya Numako** (Chiba University)	**EMPTY SLOT**

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Symposium	C4I	C4IV	D1III	D2I
Room	Sevilla 2	Andalucía 7	España 4	Sevilla 1
Session Title	Protective Coatings and Thin Films VII	Laser structuring for biological applications	Neutron & X-ray Imaging: Materials Research	Steels
Chairperson	M. Stueber	A. Lasagni	Andras Borbely	E. Jimenez-Pique
11:00	*ORAL* **ELECTRODEPOSITION OF SN-MN PROTECTIVE COATINGS FROM CITRATE ELECTROLYTES.** **Honorata Kazimierczak** (Institute of Metallurgy and Material Science of Polish Academy of Sciences) Monika Slupska, Piotr Ozga	*HIGHLIGHT* **INITIAL BACTERIAL ADHESION ON STRUCTURED POLYMER SURFACES INSPIRED BY COLLEMBOLAN SKIN** **Denise Langheinrich** (Institute of Manufacturing Technology, Technische Universität Dresden) Ralf Helbig, Carsten Werner, Andrés Lasagni	*INVITED / KEYNOTE* **MATERIAL RESEARCH AND NON-DESTRUCTIVE TESTING USING NEUTRON TOMOGRAPHY METHODS** **Eberhard Lehmann** (Paul Scherrer Institut) Anders Kaestner, Christian Grünzweig, David Mannes, Peter Vontobel, Steven Peetermans	*ORAL* **MECHANICAL BEHAVIOUR OF TWIP STEEL ACROSS THE NÉEL TEMPERATURE** **Javier Gil Sevillano** (CEIT and TECNUN, University of Navarra) Ismael Moreno Gómez
11:20	*ORAL* **DEVELOPMENT OF NEW CONVERSION COATINGS BASED ON ZN PHOSPHATE WITH IMPROVED CORROSION PERFORMANCE** **Lorena Freire** (University of Vigo) Belén Díaz, Mar Mojío, Xosé Ramón Nóvoa, Hercílio Gomes de Melo	*ORAL* **LASER INTERFERENCE PATTERNING ON THE BACTERIAL SCALE - A PERFECT TOOL TO ENGINEER ANTIMICROBIAL MODEL SURFACES** **Michael Hans** (Saarland University, Chair of Functional Materials) Salima Mathews, Marc Solioz, Frank Mücklich		*ORAL* **STUDY OF EQUILIBRIUM SEGREGATION OF MN AND REVERSION OF AUSTENITE IN TEMPERED MEDIUM MANGANESE STEELS AND ITS INFLUENCE ON IMPACT TOUGHNESS** **Margarita Kuzmina** (Max-Planck-Institut Für Eisenforschung GmbH (MPIE)) Dirk Ponge, Dierk Raabe
11:40	*ORAL* **ELECTRODEPOSITION AND CHARACTERIZATION OF ZN-TIO2 DISPERSION COATINGS** **Magali Karina Camargo León** (Department of Electrochemistry and Metal Finishing, Ilmenau University of Technology) Udo Schmidt, Marcus Wilke, Rolf Grieseler, Marcus Hopfeld, Andreas Bund	*ORAL* **LASER PRECISION MICROFABRICATION OF SYNTHETIC AND MODIFIED NATURAL BIOPOLYMERS** **Jurgen Stampfl** (TU Wien, Institute of Materials Science and Technology) Jan Torgersen, Aleksandr Ovsianikov, Xiaohua Qin, Zhiquan Li, Robert Liska	*ORAL* **MICROSTRUCTURE CHARACTERIZATION OF THERMOMECHANICALLY TREATED AL- AND MG-ALLOYS BY HIGH RESOLUTION X-RAY COMPUTED TOMOGRAPHY** **Johann Kastner** (University of Applied Sciences Upper Austria) Bernhard Plank, Guillermo Requena, Gerardo Garcés	*ORAL* **PHASE TRANSFORMATION CONTROLLED ARCHITECTURES IN STEEL ALLOYS** **Qingquan Lai** (SIMaP, Domaine Universitaire de Grenoble) Olivier Bouaziz, Yves Bréchet, Mohamed Gouné, Thomas Pardoen,
12:00	*ORAL* **SELF-HEALING ANTI-CORROSION COATINGS BY ELECTROSPINNING ON ALUMINIUM ALLOYS** **Amin Firouzi** (University of Rome - Tor Vergata) Alessandra Bianco, Giampiero Montesperelli	*ORAL* **LIGHT CURING STRATEGIES FOR LITHOGRAPHY-BASED ADDITIVE MANUFACTURING OF CUSTOMIZED CERAMICS** **Gerald Mitteranskogler** (Christian Doppler Laboratory for Photopolymers In Digital and Restorative de ntistry) Ruth Felzmann, Simon Gruber, Jürgen Stampfl, Jörg Ebert, Wolfgang Wachter, Jürgen Laubersheimer	*ORAL* **IMAGING OF HYDROGEN IN STEELS USING NEUTRONS** **Axel Griesche** (BAM Federal Institute for Materials Research and Testing) Eitan Dabah, Ingo Manke, Nikolay Kardjilov, Thomas Kannengiesser	*ORAL* **TEXTURE AND RESIDUAL STRAIN RELATIONS IN A ROLLED PLATE OF AA7449** **Julia Repper** (Paul Scherrer Institut, Materials Science and Simulation, Switzerland) Patrick Schloth, Weimin Gan, Jean-Marie Drezet, Helena Van Swygenhoven
12:20	*ORAL* **INNOVATIVE ELECTRO-THERMAL ICE PROTECTION SYSTEM FOR WIND TURBINE BLADES** **Rudolf Gradinger** (LKR Leichtmetallkompetenzzentrum Ranshofen GmbH) Joel Voyer, Markus Villinger	*ORAL* **UNCONVENTIONAL NANOLITHOGRAPHY BASED ON SELF-ORGANIZING MICELLES: APPLICATION TOWARD SUPERHYDROPHOBIC SILICON SURFACES** **Paul Ziemann** (Institute of Solid State Physics, Ulm University) Stefan Wiedemann, Alfred Plettl	*ORAL* **CORRELATION BETWEEN THE INTERNAL ARCHITECTURE AND THE THERMO-MECHANICAL BEHAVIOUR OF NEAR-EUTECTIC AND HYPEREUTECTIC AL-SI ALLOYS** **Robert Koos** (Vienna University of Technology, Institute of Materials Science and Technology) Guillermo Requena, Elodie Boller	*ORAL* **ACOUSTIC EMISSION AND MICROSCOPY STUDY OF DEFORMATION PROCESSES IN TRIP/TWIP STEELS: INFLUENCE OF AUSTENITE STABILITY** **Anja Weidner** (TU Bergakademie Freiberg) Alexei Vinogradov, Alexei Lazarev, Mikhail Linderov, Horst Biermann
12:40	EMPTY SLOT	*ORAL* **LASER ASSISTED MICRO- AND NANO STRUCTURING AND NITRIDING OF TI6AL4V-SURFACES FOR MEDICAL APPLICATIONS** **Alexander May** (INM - Leibniz Institut Für Neue Materialien gGmbH) Cagri Kaan Akkan, Mariana Oliveira, Andreas Schneider, Cenk Aktas	*ORAL* **TOMOGRAPHIC IMAGING OF NANO-SEEDED NUCLEATION IN CEMENT PASTES** **Gilberto Artioli** (Dipartimento Di Geoscienze, Università Di Padova, Padova, Italy) Maria Chiara Dalconi, Giorgio Ferrari, Matteo Parisatto, Vincenzo Russo, Luca Valentini, Marco Voltolini	*ORAL* **STUDY OF STAINLESS STEELS WITH LOW NICKEL CONTENT.** **Nuria Candela** (Universidad Nebrija) José Antonio Jiménez, Montserrat Pichel, Gerardo Conejero, Beatriz Achiaga, Rafael Barea

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Symposium	D2IV	D3II	E1II
Room	Andalucía 2	España 5	Macarena
Session Title	Characterization of the Mechanical Aspects of Corrosion and Environmental de gradation I	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior VII	Kesterites – an alternative absorber material in thin film solar cells
Chairperson	Afrooz Barnoush		Susan Schorr and Francesco di Benedetto
11:00	*ORAL* **BENDING TEST OF MICRO PILLARS IN SOLUTION: A NEW APPROACH TO STUDYING THE HYDROGEN EMBRITTLEMENT OF IRON-ALUMINUM INTERMETALLICS** **Mohammad Zamanzade** (Universität des Saarlandes) Jorge Rafael, Horst Vehoff, Afrooz Barnoush	*INVITED / KEYNOTE* **PHASE FIELD MODELING OF LI-INSERTION KINETICS IN SINGLE LIFEPO4-NANO-PARTICLES FOR RECHARGEABLE LI-ION BATTERY APPLICATION** **Michael Fleck** (Materials and Process Simualtion, University of Bayreuth, Germany) Holger Federmann, Evgeny Pogorelov, Heike Emmerich, Stephan Loos, Florian Mertens,	*INVITED / KEYNOTE* **ATOM PROBE STUDY OF CU2ZNSNSE4 THIN-FILMS PREPARED BY CO-EVAPORATION AND POST-DEPOSITION ANNEALING** **Pyuck-Pa Choi** (Max-Planck-Institut Fuer Eisenforschung) Torsten Schwarz, Oana Cojocaru-Mirédin, Marina Mousel, Alex Redinger, Susanne Siebentritt, Dierk Raabe
11:20	*ORAL* **CORROSION RESISTANCE OF DENTAL REPLACEMENTS MEASURED BY NANOINDENTATION METHODS** **Monika Kasiarová** (Institute of Materials Research, Slovak Academy of Sciences) Dagmar Galusková, Du¹an Galusek		
11:40	*ORAL* **DRAWN STEEL SURFACE ANALYSIS IN CONTACT WITH SALINE SOLUTION BY ELECTROCHEMICAL ATOMIC FORCE MICROSCOPY (EC-AFM)** **Alicia Pachón Montaño** (Eduardo Torroja Institute of Construction Science) Javier Sánchez Montero, Esperanza Menéndez Méndez, Mª Carmen Andra de Perdrix, José Fullea García	*ORAL* **MODELLING OF ELECTRO DE DEFORMATION CAUSED BY LITHIUM INTERCALATION** **Efim Borukhovich** (Ruhr-Universität Bochum, ICAMS) Oleg Shchyglo, Ulrich Preiss, Ingo Steinbach	*ORAL* **NEW KESTERITE PVD BASED TECHNOLOGIES: DEVELOPMENT OF A TWO STAGE PROCESS** **Simón López-Marino** (Catalonia Institute for Energy Research (IREC)) Andrew Fairbrother, Moisés Espíndola-Rodríguez, Xavier Fontané, Marcel Placidi, Juan López-García, Víctor Izquierdo-Roca, Alejandro Pérez-Rodríguez, Edgardo Saucedo
12:00	*ORAL* **EFFECT OF HYDROGEN ON STRESS CORROSION CRACKING OF MAGNESIUM ALLOYS FROM MG-Y-RE-ZR** **Maria Sozanska** (Silesian University of Technology)	*ORAL* **DETERMINATION OF THERMODYNAMIC KEY DATA FOR THE ELECTRO DE MATERIALS LI-CU-SN AND LI-CO-O OF ADVANCED LITHIUM ION BATTERIES USING EXPERIMENTAL AND THEORETICAL METHODS** **Torsten Markus** (Forschungszentrum Juelich GmbH) Siangfur Dang, David Henriques, Marco Prill	*ORAL* **CU2ZNSN1-XGEXS4 THIN FILMS GROWN BY FLASH EVAPORATION AND THERMAL TREATMENT** **Raquel Caballero** (Universidad Autónoma de Madrid) José María Cano-Torres, Ivan Victorov, Nair López, José Manuel Merino, Maria Novikova, Ivan Bodnar, Máximo León
12:20	*ORAL* **EFFECT OF ZN CONTENT ON THE MICROSTRUCTURE, MECHANICAL PROPERTIES AND CORROSION BEHAVIOR OF AE-X ZN MAGNESIUM ALLOYS FOR BIOMEDICAL APPLICATIONS** **El-Zahraa El-Baradie** (Head of Non-Ferrous Lab, Central Metallurgical Research& de velopment Institute, CMRDI) Ahmed Nagy Abd-El-Azim, Madiha Shoeib	*ORAL* **LITHIUM PERMEATION OF THE ELECTROCHEMICAL INTERFACE** **Ulrich Preiss** (ICAMS) Efim Borukhovich, Nega Alemayehu, Ingo Steinbach, Fabio LaMantia	*ORAL* **CHARACTERISTICS OF SPRAY-DEPOSITED CU2ZNSNS4 THIN FILMS UNDER INERT ATMOSPHERE AND ITS USE IN PHOTOVOLTAIC DEVICES.** **Moises Espindola** (Institut de Recerca en Energia de Catalunya) Diouldè Sylla, Marcel Placidi, Xavier Fontané, Yudenia Sanchez, Andrew Fairbrother, Simón López, Juan López, Victor Izquierdo, Edgardo Saucedo
12:40	*ORAL* **POTENTIODYNAMIC POLARISATION BEHAVIOUR AND IMPEDANCE SPECTROSCOPY STUDIES OF ZRO2-PARTICLE REINFORCED 16CR-6MN-6NI TRIP-STEEL PROCESSED BY SPS.** **M. Mandel** (TU Bergakademie Freiberg) Lutz Krüger	*ORAL* **THERMODYNAMIC ASPECTS OF COPPER OXIDES AND IRON OXIDES USED AS CONVERSION ELECTRODES FOR LITHIUM ION BATTERIES** **Maren Leppe** (Karlsruhe Institut Of Technology, Institute for Applied Materials - Applied Materials Physics) Damian Cupid, Peter Franke, Alexandra Reif, Hans Seifert	*ORAL* **STRUCTURAL CHARACTERIZATION OF CU2ZNGESE4** **Galina Gurieva** (Helmholtz Zentrum Berlin) Daniel Többens, Susan Schorr

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Symposium	E1III	F1I	G1II
Room	España 2	España 3	Andalucía 6
Session Title	Materials for Fuel Cells	Micro- and Nano-Engineered Materials for Medical Application I	Promoting Materials Science
Chairperson	J. Hertz		Mike Ashby

11:00

INVITED / KEYNOTE

PROTON-CONDUCTING IONOMERS FOR FUEL CELLS

Philippe Knauth (Aix.Marseille University)

INVITED / KEYNOTE

NANOSTRUCTURED SILICON IN NANOMEDICINE

Nicolas Voelcker (University of South Australia)

INVITED / KEYNOTE

THE GERMAN „SCHÜLERLABOR" – A SEMT EDUCATIONAL INNOVATION

Rolf Hempelmann (Saarland University)

11:20

11:40

EMPTY SLOT

ORAL

IN SITU CYTOTOXIC GENERATION BY STIMULI-RESPONSIVE MESOPOROUS SILICA NANOCARRIERS

Alejandro Baeza García (Univ. Complutense de Madrid)
Maria Vallet Regí, Eduardo Guisasola Cal

ORAL

ATTRACTING STUDENTS TO MATERIAL SCIENCE: A REPORT OF THE OUTREACH ACTIVITIES DONE AT UPC BARCELONA

Emilio Jimenez Pique (Universitat Politecnica de Catalunya)
Jessica Calvo, Marta Pegueroles

12:00

HIGHLIGHT

A HIGH-TEMPERATURE MÖSSBAUER STUDY OF IRON-DOPED LA2NIO4+X

Klaus-Dieter Becker (Institute of Physical Chemistry, TU Braunschweig)
Piotr Gaczynski, Armin Feldhoff, Tobias Klande

ORAL

ANTIBODY-FUNCTIONALIZED POROUS SILICON NANOPARTICLES FOR THE VECTORIZATION OF HYDROPHOBIC ANTI-CANCER DRUGS

Frederique Cunin (Icgm - Umr5253)
Emilie Secret, Kevin Smith, Valentina Dubljevic, Eli Moore, Mary-Louise Rogers, Terrance G. John, Peter Macardle, Jean-Olivier Durand, Nicolas H. Voelcker

ORAL

MATERIALS SCIENCE AND ENGINEERING ON INTELLECTUAL FOUNDATIONS?

Panos Tsakiropoulos (The University of Sheffield)

12:20

ORAL

INFLUENCE OF CARBON DIOXIDE ON PROTON EXCHANGE MEMBRANE FUEL CELL PERFORMANCE

Manuel Diaz (INTA-National Institute for Aerospace Technology)
Eduardo Lopez, Fernando Isorna

ORAL

POROUS SILICON NANOPARTICLES FUNCTIONALIZED FOR THE PHOTODYNAMIC THERAPY OF CANCER

Arnaud Chaix (Icgm - Umr5253)
Emilie Secret, Marie Maynadier, Magali Gary-Bobo, Marcel García, Philippe Maillard, Francesco Di Renzo, Michael J. Sailor, Jean-Olivier Durand, Frederique Cunin

ORAL

INTERNATIONAL MATERIALS SCIENCE SEMINARS: A BRIDGE BETWEEN TWO CONTINENTS

Blanca Gonzalez Bermudez (Departamento de Ciencia de Materiales, ETSI Caminos, Universidad Politécnica de Madrid)
Jose Ygnacio Pastor Cañ

12:40

ORAL

OPTIMIZATION OF THE ANODE-ELECTROLYTE INTERFACE IN MICRO-TUBULAR SOFCS BASED ON DOPED CERIA ELECTROLYTES

Miguel Morales (Universitat de Barcelona)
María Elena Xuriguera, Miguel Ángel Laguna-Bercero, Víctor Manuel Orera, Mercè Segarra

ORAL

NEW AUTONOMOUS PH-CONTROLLABLE DRUG DELIVERY SYSTEM BASED ON HYBRID MESOPOROUS SILICA NANOPARTICLES WITH MOLECULAR RECOGNITION PROPERTIES

Christophe Theron (Institut Charles Gerhardt Montpellier , France)
Audrey Gallud, Jie Lu, Magali Gary-bobo, Michel Wong Chi Man, Marcel García, Fuyu Tamanoi, Jeffrey Zink, Carole Carcel

ORAL

EUROPEAN SCHOOL OF MATERIALS: INTERNATIONAL EDUCATION FOR FUTURE LEADERS IN MATERIALS SCIENCE AND ENGINEERING

Flavio Soldera (Department of Materials Science, Saarland University)
Dirk Bähre, Ralf Busch, Frank Mücklich

WEDNESDAY 11 SEPTEMBER 2013 / PM1

Symposium	A2III	A3I	A4II	B3III
Room	España 1	Giralda	La Pinta	Andalucía 5
Session Title	Multiferroic heterostructures: coupling phenomena	Carbon-containing Composites and Materials II	Nanopowders for Applications in Biology, Medicine, Photonics and Photovoltaics II	Hybrid Polymer Nanocomposites IV
Chairperson	M. Fiebig	Miriam Miranda	Stuart Irvine	
15:00	*INVITED / KEYNOTE* **DOMAIN PATTERN TRANSFER IN MULTIFERROIC HETEROSTRUCTURES: A NEW ROUTE TOWARDS ELECTRIC-FIELD CONTROLLED MAGNETISM** **Sebastiaan van Dijken** (Aalto University) Tuomas Lahtinen, Kevin Franke, Arianna Casiraghi, Qihang Qin, Lide Yao	*ORAL* **INTERFACIAL CHARGE TRANSPORT IN NANOTUBE-BASED COMPOSITES** **Philip Collins** (University of California, Irvine) Brad Corso, Tatyana Sheps, Israel Perez	*HIGHLIGHT* **COLLOIDAL GOLD AND SILVER FOR NANOPLASMONIC SENSING AND IMAGING** **Lakshminarayana Polavarapu** (CICbiomaGUNE, San Sebastián, Spain) Luis M. Liz-Marzán	*INVITED / KEYNOTE* **HYBRID POLYURETHANE/POLYHEDRAL OLIGOMERIC SILSESQUIOXANES (POSS) NANOMATERIALS** **Edyta Hebda** (Cracow University of Technology, Department of Chemistry and Technology of Polymers) Malgorzata Jancia, Krzysztof Pielichoiwski, Bogdan Marciniec, Adrian Franczyk
15:20		*ORAL* **HOW TO CONTROL THE GROWTH OF ALIGNED CARBON NANOTUBES ON CARBON SUBSTRATES THROUGH CVD INJECTION PROCESS?** **Martine Mayne-L'Hermite** (CEA Saclay, DSM/RAMIS/SPAM, Laboratoire Francis Perrin) Stéphanie Patel, Youssef Magga, Mathieu Pinault, Dominique Porterat, Sébastien Joulié, Marc Monthioux, Cécile Reynaud	*ORAL* **NANOSCALE HETEROGENEITY IN LUMINESCENT LANTHANIDE - DOPED NANO - OXIDES** **Carmen Tiseanu** (National Institute for Laser, Plasma and Radiation Physics (INFLPR) Bucharest-Magurele, Romania) Daniel Avram, Bogdan Cojocaru, Vasile Parvulescu	
15:40	*ORAL* **FERROELECTRIC/FERROMAGNETIC HETEROSTRUCTURES WITH FIELD-MEDIATED COUPLING FOR NON-VOLATILE CONTROL OF MAGNETIC DOMAINS** **Zhen Huang** (Ceramics Laboratory, EPFL) Igor Stolichnov, Evgeny Mikheev, Nava Setter	*ORAL* **NOVEL HYBRID COMPOSITES BASED ON CONDUCTING POLYMERS AND NANOCARBONS AS ACTUATORS** **Daisy Accardo** (Center for Space Human Robotics@Polito, Istituto Italiano Di Tecnologia) Mariangela Lombardi, Alberto Ansaldo, Maurizio Biso, Davide Ricci, Paolo Ariano, Sergio Bocchini	*ORAL* **CHARACTERIZATION OF CUBIC ZNS QUANTUM DOTS WITH VARIOUS MN2+ IMPURITY IONS DOPING LEVELS BY MULTIFREQUENCY ELECTRON PARAMAGNETIC RESONANCE** **Vasile Sergiu Nistor** (National Institute of Materials Physics) Mariana Stefan, Daniela Ghica, Leona C. Nistor	*ORAL* **INFLUENCE OF ZINC OXIDE NANOPARTICLES ON POLYETHYLENE OXIDE PROPERTIES** **Marija Masonkina** (Riga Technical University, Institute of Silicate Materials) Inna Juhnevica, Sergejs Gaidukovs, Alona Gabrene
16:00	*ORAL* **IN-SITU SQUID STUDIES OF MAGNETOELECTRIC LSMO/PZT HETEROSTRUCTURES** **Philipp Leufke** (Karlsruhe Institute of Technology) Ajay Mishra, Robert Kruk, Wang Di, Horst Hahn	*ORAL* **SUPERHYDROPHOBIC, OLEOPHOBIC AND CONDUCTIVE NANOCOMPOSITES FROM ANTHRAQUINONE DYE STUFF FUNCTIONALIZED MULTI-WALLED CARBON NANOTUBE DISPERSIONS IN PARAFILM ®M** **Ilker Bayer** (Istituto Italiano Di Tecnologia) Adam Steele, Eric Loth	*ORAL* **TRANSPARENT CONDUCTING GRAPHENE SHEETS WITHSTANDING HIGH TEMPERATURE PROCESSES DURING THE FABRICATION OF THIN FILM PHOTOVOLTAIC DEVICES OF THIRD GENERATION** **Giulio Paolo Veronese** (CNR - IMM Bologna Institute) Rita Rizzoli, Marco Allegrezza, Caterina Summonte, Luca Ortolani, Vittorio Morandi	*ORAL* **RHEOLOGICAL PROPERTIES OF ASPHALT BINDER MODIFIED WITH ORGANO-MONTMORILLONITE CLAY, SBS AND SBS/CLAY NANOCOMPOSITES** **Nágila Ricardo** (Federal University of Ceará) Sandra Soares, Jorge Soares, Luiza Tomé, Bruno Amoni
16:20	*ORAL* **MAGNETOELASTIC COUPLING IN STRAINED LA0.7CA0.3MNO3//BATIO3 THIN FILMS** **Federico Mompean** (CSIC Instituto de Ciencias de Materiales de Madrid, Spain) Aurora Alberca, Carmen Munuera, Norbert Nemes, Javier Tornos, Titusz Feher, Brian Kirby, Mike Fitzsimmons, Jacobo Santamaria, Mar Garcia-Hernandez	*INVITED / KEYNOTE* **NANO AND HIERARCHICAL THERMOSET MULTIFUNCTIONAL COMPOSITES CONTAINING VERY HIGH CARBON NANOTUBE LOADINGS** **Tomi Herceg** (Department of Chemical Engineering, Imperial College London) Mohd Shukur Zainol Abidin, Alexander Bismarck, Emile Greenhalgh, Milo Shaffer	*ORAL* **PHASE INSTABILITY OF ELECTROLESS PROCESSED ELECTRODE IN SI-BASED SOLAR CELL** **Areum Kim** (School of Integrative Engineering, Chungang University) Seonjea Lee, Yinhua Cui, Eunmi Choi, Hee Soo Choi, Chang Hyun Kim, Soon Hyeong Kwon, Sung Gyu Pyo	*ORAL* **MULTIFUNCTIONAL ALUMINA MICROPLATELETS FOR BIO-INSPIRED COMPOSITES** **Tobias Niebel** (Complex Materials, Dept. of Materials, ETH Zürich, Switzerland) Florian Heiligtag, Markus Niederberger, André Studart
16:40	*ORAL* **CONDUCTION MECHANISM IN LSMO-FERROELECTRIC-LSMO HETEROSTRUCTURES** **Lucian Pintilie** (National Institute of Materials Physics) Georgia Andra Boni, Ioana Pintilie, Daniele Preziosi, Marin Alexe, Dietrich Hesse		*ORAL* **DIFFUSION OF IONIC LIQUIDS IN NANOSTRUCTURES FOR DYE SOLAR CELLS. SIMULATION AND EXPERIMENTS** **Emilio González** (Universidad de Almería) María Jesús Ariza, José Manuel Romero	*ORAL* **CHARACTERIZATION OF BIOINSPIRED HYBRIDMATERIALS BY MULTI-SCALE ANALYSIS COMBINING IN-SITU X-RAY SCATTERING AND MECHANICAL TENSILE TESTING** **Britta Margarete Seidt** (Max Planck Institute of Colloids and Interfaces, Department of Biomaterials) Felix Hansske, Peter Fratzl, Hans Börner, Wolfgang Wagermaier

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	Symposium	Room	Session Title	Chairperson
	B4I	Cartuja	Thin-film structures for sensors and electronic devices	Bartolomeo Civalleri
	B4II	Andalucía 8	Processing and Applications	A. Ortona
	C1II	Sevilla 3	Precipitation	S. van der Zwaag
	C3I	Andalucía 1	Soft Chemical Processing	Bruno Trindade

15:00

INVITED / KEYNOTE

THE POWER OF EMPTY SPACE: METAL-ORGANIC FRAMEWORKS AS ELECTRONIC MATERIALS

Mark Allendorf (Sandia National Laboratories)
Alec Talin, Jeffery Greathouse, Timothy Lambert, Erik Spoerke, Vitalie Stavila, Bryan Wong

INVITED / KEYNOTE

METALLIC MUSCLES AT WORK

Jeff de Hosson (Un. of Groningen)
Eric de tsi, Patrick Onck

HIGHLIGHT

COMBINING DSC RAMP HEATING AND IN SITU SAXS EXPERIMENTS FOR MONITORING PRECIPITATION PROCESSES

Frederic de Geuser (SIMAP, Grenoble-INP, CNRS)
Christophe Sigli, Thomas Dorin, Alexis Deschamps

INVITED / KEYNOTE

NANO-SIZED SINGLE CRYSTALS AND THEIR POTENTIALS; SHAPE, COMPOSITION, ASSEMBLY, INTERFACE AND FUNCTIONS

Kazumi Kato (National Institute of Advanced Industrial Science and Technology)
Ken-ichi Mimura, Feng Dang, Hiroaki Imai, Satoshi Wada, Minoru Osada, Hajime Haneda, Makoto Kuwabara

15:20

ORAL

IN-SITU SMALL ANGLE SCATTERING REVEALING EARLY PRECIPITATION IN AN AA7XXX ALLOY DURING QUENCH

Patrick Schloth (Ecole Polytechnique Fédérale de Lausanne, Laboratoire de Simulation des Matériaux, Lausanne)
Julia Repper, Julie Fife, Andreas Menzel, Jean-Marie Drezet, Helena Van Swygenhoven

15:40

ORAL

CRYSTALLIZATION OF METAL-ORGANIC FRAMEWORKS ON SURFACES USING MICROFLUIDIC-PEN LITHOGRAPHY

Kyriakos Stylianou (Catalan Institute of Nanotechnology)
Carlos Carbonell, Inhar Imaz, Daniel Maspoch

ORAL

POROUS MATERIALS FROM CAPILLARY SUSPENSIONS: MATERIAL PROCESSING AND STRUCTURE ANALYSIS OF SINTERED PARTS

Jens Dittmann (Karlsruhe Institute of Technology (KIT))
Norbert Willenbacher

ORAL

TAILORING THE MORPHOLOGICAL PARAMETERS OF THE T1 PHASE IN AL-CU-LI ALLOYS: A WAY TO QUANTIFY THE MICROSTRUCTURE-STRENGTH RELATIONSHIP

Thomas Dorin (Constellium, Voreppe Research Centre, Voreppe, France)
Frédéric de Geuser, Williams Lefebvre, Alexis Deschamps

ORAL

FROM BA1-XSRXTIO3 (WITH 0 . X . 1) SYNTHESIS IN SUPERCRITICAL FLUIDS TO ADVANCED NANOSTRUCTURED FERROELECTRIC CERAMICS

Gilles Philippot (CNRS, Université de Bordeaux, ICMCB, Pessac, France)
Kirsten Jensen, Bo Iversen, U-Chan Chung, Claude Estournès, Geoffroy Chevallier, Catherine Elissalde, Cyril Aymonier

16:00

ORAL

MOF HYBRID MATERIALS: STEPWISE LAYER-BY-LAYER GROWTH OF MOF THIN FILMS ON CONFINED SURFACES: MESOPOROUS SILICA FOAM AS A FIRST CASE STUDY

Osama Shekhah (Ampm-Kaust)
Liling Fu, Emmanuel Giannelis, Mohamed Eddaoudi

ORAL

DESIGNING ARCHITECTURED SANDWICH PANELS: MULTI-OBJECTIVE DESIGN

Pierre Leite (Onera/dmsm)
Marc Thomas, Yves Bréchet

ORAL

SHELL-WISE GROWTH OF (NB,TI)(C,N) PRECIPITATES DURING CYCLIC COOLING OF MICROALLOYED STEEL

Tomasz Wojcik (Institute of Materials Science and Technology, Vienna University of Technology)
Karl-Hermann Tacke, Guangmin Xia, Silvia Barella, Carlo Mapelli, Ernst Kozeschnik

ORAL

SYNTHESIS OF POROUS IRON OXIDE NANOSTRUCTURES: SYNTHESIS MECHANISMS AND STRUCTURAL PROPERTIES

Olivier Gerber (Institut de Physique et de Chimie des Matériaux de Strasbourg)
Benoit Pichon, Elodie Barraud, Sébastien Lemonnier, Dominique Begin, Sylvie Begin-Colin

16:20

ORAL

METAL-ORGANIC FRAMEWORK ZIF-8 LOW-K DIELECTRIC FILMS: CHALLENGING THE HEGEMONY OF SILICA-BASED LOW-KS IN MICROELECTRONICS

Salvador Eslava (Imperial College London)
Liping Zhang, Kris Vanstreels, Mikhail Baklanov, Eduardo Saiz

ORAL

EXPERIMENTAL AND NUMERICAL SIMULATIONS OF THE REGENERATION PHASE OF DIESEL PARTICULATE FILTERS

Nada Bousselmi (Centre des Matériaux Mines Paristech)
Michel Boussuge, Sylvain Gailliègue

ORAL

INFLUENCE OF DE EP CRYOGENIC TREATMENT ON THERMAL DE COMPOSITION OF MARTENSITE IN 100CR6 STEEL

Mónica Preciado (University of Burgos)
Massimo Pellizzari

ORAL

SYNTHESIS OF NANOCRYSTALLINE OXIDE ION CONDUCTOR LA2MO2O9 BY POLYOL PROCESSES

Houssem Sellemi (IMMM - Institut des Molécules et des Matériaux du Mans-Département des Oxydes et Fluorures)
Sandrine Coste, Amor Ben Ali, Philippe Lacorre, Leila Semia Smiri

16:40

HIGHLIGHT

MINIATURIZED LAYER-BY-LAYER DEPOSITION OF METAL-ORGANIC FRAMEWORK COATINGS THROUGH DIGITAL MICROFLUIDICS

Rob Ameloot (Center for Surface Chemistry and Catalysis, University of Leuven)
Daan Witters, Steven Vermeir, Robert Puers, Bert Sels, Dirk de Vos, Jeroen Lammertyn

ORAL

THE EFFECTS OF POWDER CHARACTERISTICS ON THE FOAMING BEHAVIOUR AND THE CELL MORPHOLOGY OF ALUMINIUM ALLOY FOAMS

Isabel Duarte (Department of Mechanical Engineering, TEMA, University of Aveiro)
Bruno Pinto-Lopes, Mónica Oliveira, José Maria Ferreira

ORAL

LOW PRECIPITATION OF ALUMINIUM NITRIDE IN MARAGING STEEL:A QUANTITATIVE APPROACH

Guillaume Jeanmaire (Institut Jean Lamour - Université de Lorraine)
Moukrane de hmas, Abdelkrim Redjaïmia, Alexandre de vaux, de nis Béchet, Sylvain Puech, Guillaume Fribourg, Dominique Georget, Michael Gaborit

ORAL

AQUEOUS SYNTHESIS OF AU-PT NANODIMERS TRIGGERED BY PRE-SYNTHESIZED PT NANODENDRITES

Stefanos Mourdikoudis (Departamento de Quimica Fisica, Universidade de Vigo)
Isabel Pastoriza-Santos, Jorge Perez-Juste, Luis M. Liz-Marzan

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Symposium	C3III	C4I	C4IV	D1III
Room	Andalucía 4	Sevilla 2	Andalucía 7	España 4
Session Title	Processing of Ceramics and their Mechanical Properties II	Protective Coatings and Thin Films VIII	Surface structuring using nanosecond-pulsed lasers	Fast & In-situ: Synchrotron-based Tomography II
Chairperson	Arturo Domínguez	J. Kusinski	F. Dreisow	Alexander Rack
15:00	*INVITED / KEYNOTE* **OXIDATION KINETICS AND ITS RELATION TO MECHANICAL PROPERTIES OF ULTRA-HIGH TEMPERATURE CERAMICS** **Eugenio Zapata-Solvas** (Imperial College London) Doni D. Jayaseelan, Peter Brown, William E. Lee	EMPTY SLOT	*ORAL* **PIMP MY SURFACE; USING DIRECT LASER INTERFERENCE FOR HIGH SPEED SURFACE FUNCTIONALIZATION** **Andres Lasagni** (Institute of Manufacturing Technology, Technische Universität Dresden) Teja Roch, Matthias Bieda, Sebastian Eckhardt1, de nise Langheinrich, Jana Berger, Heidi Perez, Dimitri Benke, Andreas Wetzig, Eckhard Beyer	*HIGHLIGHT* **REACTIVE MELTING OF SILICA-SODA-LIME GLASS FROM RAW MATERIALS FOLLOWED BY IN-SITU ULTRAFAST TOMOGRAPHY** **Emmanuelle Gouillart** (Joint Unit CNRS / Saint-Gobain) Marie-Hélène Chopinet, William Woelffel, Michael Toplis, David Bouttes, Elodie Boller, Albufera Vincent, Hugues Talbot, Laurent Najman, Varoquaux Gaël
15:20		*ORAL* **SEGMENTATION CRACKING IN PLASMA SPRAYED THERMAL BARRIER COATINGS** **Alexander Greatholder** (Coatings and Composites Group, Department of Materials Science and Metallurgy, University of Cambridge) Maya Shinozaki, Michael Bennett, Bill Clyne	*ORAL* **AN EXPERIMENTAL STUDY OF NANOSECOND LASER DEEP MACHINING ON 316L IN AIR AND UNDER ARGON** **Leila Guenad** (EDF) Emilie Le guen	*ORAL* **MICRO- AND NANOSCALE X-RAY TOMOGRAPHY WITH HIGH TEMPORAL RESOLUTION FOR THE QUANTITATIVE DESCRIPTION OF FAST STRUCTURAL CHANGES IN MATERIALS.** **Rajmund Mokso** (Swiss Light Source, Paul Scherrer Institut, Switzerland) Federica Marone, Julie Fife, Sarah Irvine, Kevin Mader, Marco Stampanoni
15:40	*ORAL* **SYNTHESIS OF FULLERENE LIKE TUNGSTEN DISULPHIDE NANOPARTICLES VIA GAS-PHASE REDUCTION** **Yan Wen** (University of Exeter) Shaowei Zhang	*ORAL* **INFLUENCE OF THERMAL TREATMENT OF NOVEL NIAL COATINGS PRODUCED BY IN-FLIGHT COMBUSTION SYNTHESIS** **Amalia Marinou** (NCSR de mokritos) Galina Xanthopoulou, George Vekinis, Aggeliki Lekatou, Michalis Vardavoulias	*ORAL* **RAPID SOLIDIFICATION OF METALLIC MULTILAYERS – CORRELATIVE ANALYSIS BY HIGH-RESOLVING IMAGING METHODS AND THERMAL SIMULATIONS** **Peter Leibenguth** (Saarland University, Chair of Functional Materials) Isabella Citlalli Schramm, Frank Mücklich	*ORAL* **HIGH-SPEED IN-SITU TOMOGRAPHY OF LIQUID AND SEMI-LIQUID PROTEIN FOAMS** **Martina Müller** (Chair for X-Ray Microscopy, University Würzburg) Anja Eggert, Jannika Dombrowski, Simon Zabler, Randolf Hanke
16:00	*ORAL* **CHARACTERIZATION OF CERAMICS DEVELOPED BY POWDER METALLURGY PROCESSES USING LIGNITE FLY ASH AND WASTE GLASS CULLET MIXTURES AS THE RAW MATERIALS** **Vayos Karayannis** (Technological Education Institution of West Macedonia - Greece) Christina-Amalia Drossou, Eleni Katsika, Angeliki Moutsatsou	*ORAL* **ROLL-TO-ROLL THIN FILM COATING FOR TECHNICAL APPLICATIONS** **Stanislav Dribinskiy** (Fraunhofer Institute for Process Engineering and Packaging (Fraunhofer IVV))	*ORAL* **LASER SURFACE MICROTEXTURING IN AL2O3-ZRO2 SUBSTRATE** **Jorge Luis Arias** (Centro Tecnológico AIMEN) Mª Angeles Montealegre, Alejandro González	*ORAL* **IN SITU SYNCHROTRON TOMOGRAPHIC QUANTIFICATION OF STRAIN LOCALISATION DURING HOT COMPRESSION OF AL-15WT.%CU ALLOY** **Biao Cai** (University of Manchester) Peter Lee, Shyamprasad Karagadde, Lang Yuan, James Marrow, Thomas Connolley
16:20	*ORAL* **A COMPARATIVE STUDY ON PHOTOCATALYTIC METHYLENE BLUE DEGRADATION OF CONVENTIONALLY SINTERED AND HIPED SOL-GEL DERIVED TIO2 NANOPOWDERS** **Mustafa Erol** (Dokuz Eylul University, Dept. of Metallurgical and Materials Engineering) Onur Ertugrul, Kazim Onel, Erdal Celik	EMPTY SLOT	*ORAL* **REMOTE LASER SCANNING – ALTERNATIVES FOR INCREASING THE WORKING AREA IN THE MATERIAL MICROMACHINING** **Moises Alberto Ortega Delgado** (Fraunhofer IWS) Udo Klotzbach, Eckhard Beyer	*ORAL* **3D-CHARACTERIZATION OF ALCU4.5MG0.3 AND ALCU7 ALLOYS AFTER SOLUTION HEAT TREATMENT AND DURING IN SITU TENSILE TESTS** **Ricardo Fernández Gutiérrez** (Vienna University of Technology - Institute for Materials Science and Technology) Guillermo C. Requena, Bernhard Stauder, Eric Maire, Augusta Isaac, Elodie Boller, Mario Scheel, Ingo Manke
16:40	*ORAL* **MICROSTRUCTURE AND PROPERTIES OF NOVEL AL2O3-TIO2 COATINGS OBTAINED BY SUSPENSION PLASMA SPRAYING** **Emilie Bannier** (Instituto de Tecnología Cerámica) Monica Vicent, Emilio Rayón, Ruth Benavente, Maria Dolores Salvador, Enrique Sánchez	*ORAL* **SURFACE MOLYBENIZING-ALUMINZING OF WROUGHT AND POWDER METALLURGY TI AND TI6AL4V BY HALIDE ACTIVATED PACK CEMENTATION** **Sophia Alexandra Tsipas** (Universidad Carlos III de Madrid) Antonia Jimenez-Morales, Beatriz Martín de Hijas Iglesias, Elena Gordo	*ORAL* **PRODUCTION OF FUNCTIONALLY PATTERNED TRANSPARENT THIN FILM FOR ADVANCED ELECTRODES** **Sebastian Eckhardt** (Fraunhofer IWS Dresden) Jana Berger, Teja Roch, Andrés Lasagni	*ORAL* **COALESCENCE PHENOMENA IN ALUMINIUM-BASED FOAMS** **Francisco Garcia-Moreno** (Helmholtz-Centre Berlin) Marlen Michaelis, Maria Jürgens, Alexander Rack, John Banhart

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	Symposium	Room	Session Title	Chairperson
	D2I	Sevilla 1	Metallic Alloys	J. Gil Sevillano
	D2IV	Andalucía 2	Characterization of the Mechanical Aspects of Corrosion and Environmental de gradation II	Afrooz Barnoush
	D3I	Alamillo	Materials Discovery and High-Throughput Methods: Experiment I	Pio Buenconsejo
	D3II	España 5	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior VIII	

15:00	*ORAL* **DEFORMATION MECHANISMS IN TI-NB-ZR-TA-O ALLOYS** **Cemal Cem Tasan** (Max-Planck-Institut Für Eisenforschung) Hauke Springer, Jiali Zhang, Emeric Plancher, Stefanie Sandloebes, Nader Zaafarani, Dierk Raabe	*ORAL* **ENVIRONMENTAL DE GRADATION OF LOW CARBON STEEL IN SIMULATED GROUND WATERS** **Ahmet Yilmaz** (Yalova University) Seyda Karadirek	*INVITED / KEYNOTE* **DATA DRIVEN APPROACHES TO COMBINATORIAL DISCOVERY OF FUNCTIONAL MATERIALS** **Ichiro Takeuchi** (University of Maryland)	*INVITED / KEYNOTE* **MULTISCALE ATOMISTIC MODELING OF THE STRUCTURE AND ELECTRONIC PROPERTIES OF FUNCTIONAL LAYERS USED IN OLED STACKS** **Alexander Bagaturyants** (Photochemistry Center, Russian Academy of Sciences)
15:20	*ORAL* **ESTABLISHING CORRELATION BETWEEN MICROSTRUCTURE AND ITS PROPERTIES BY 3D CHARACTERIZATION OF EUTECTIC SI IN AL-SI ALLOYS** **Anastasia Kruglova** (Chair for Functional Materials, Saarland University,Saarbrücken, Germany) Gerd Gaiselmann, Ole Stenzel, Volker Schmidt, Michael Roland, Stefan Diebels, Frank Mücklich	EMPTY SLOT		
15:40	*ORAL* **MECHANICAL BEHAVIOR OF HOT PRESSED ZRO2-REINFORCED METASTABLE AUSTENITIC STEELS** **Ralf Eckner** (TU Bergakademie Freiberg, Institute of Materials Engineering) Lutz Krüger, Steffen Wolf, Stefan Martin, Christian Weigelt, J. Raethel	*ORAL* **MECHANICAL PROPERTIES AND CORROSION RESISTANCE OF SEVERAL TITANIUM ALLOYS** **Jennifer Dupuis** (INSA Rennes) Thierry Gloriant, Sylvain Faure, Florence Razan	*ORAL* **CUXPD1-X ALLOY CATALYSIS ACROSS COMPOSITION SPACE** **Andrew Gellman** (Carnegie Mellon University) James Miller, Peter Kondratyuk, Gamze Gumuslu	*ORAL* **A NEW GENERAL MODEL FOR DIFFUSION CONTROLLED GROWTH IN DICTRA.** **Anders Engstrom** (Thermo-Calc Software AB) Ake Jansson, Henrik Larsson, Lars Hoglund
16:00	*ORAL* **OPTIMIZATIONS OF THE CREEP BEHAVIOUR OF A SINGLE CRYSTAL NICKEL-BASED SUPERALLOY AT LOW STRESS HIGH TEMPERATURE** **Narges Tabrizi** (Rolls-Royce UTC, Department of Materials Science & Metallurgy, Cambridge University) Hon Tong Pang, Cathie Rae	*ORAL* **ATOM PROBE TOMOGRAPHY CHARACTERIZATION OF A WHITE ETCHING AREA IN BEARING STEELS** **Michael Moody** (Department of Materials, University of Oxford, United Kingdom) JeeHyun Kang, Ceri Williams, Babak Hosseinkhani, Pedro Rivera D iaz del Castillo, Paul Bagot	*ORAL* **COMBINATORIAL EXPERIMENTS REALIZE FUNCTIONAL MATERIALS DISCOVERED BY FIRST PRINCIPLES MODELING** **Andriy Zakutayev** (National Renewable Energy Laboratory)	*ORAL* **MODELING OF PHASE EQUILIBRIA IN NI-H: BRIDGING THE ATOMISTIC WITH THE CONTINUUM SCALE** **Robert Spatschek** (Max-Planck Institute for Iron Research) Dominique Korbmacher, Johann von Pezold, Claas Hüter, Jörg Neugebauer, Steffen Brinckmann
16:20	*ORAL* **MECHANICAL PROPERTIES AND FRACTURE TOUGHNESS OF ADVANCED METAL-MATRIX LAYERED COMPOSITES** **Sergei Gladkovsky** (Institute of Engineering Science of Ural Branch of Russian Academy of Sciences) Evgeny Borodin, Ivan Kamantsev, Svetlana Kuteneva	*ORAL* **MECHANICAL DE GRADATION OF TUNGSTEN-1 WT% YTTRIUM OXIDE IN OXIDATION AND VACUUM ATMOSPHERES** **Jose Ygnacio Pastor** (Universidad Politecnica de Madrid) Teresa Palacios, Angel Muñoz	*ORAL* **COMBINATORIAL DEVELOPMENT OF FE-DOPED WO3 NANOSTRUCTURES FOR PHOTOELECTROCHEMICAL SOLAR WATER-SPLITTING** **Chinmay Khare** (Institute for Materials, Ruhr-Universität Bochum, Germany) Aliaksandr Stepanovich, Kirill Sliozberg, Pio John Buenconsejo, Wolfgang Schuhmann, Alfred Ludwig	*ORAL* **UNDERLINING THE FORMATION MECHANISM OF CARBONATES DURING THE ADSORPTION OF CO2 AND CO IN LTA ZEOLITES** **Ana Martin-Calvo** (University Pablo de Olavide) Jose B. Parra, Conchi O. Ania, Sofia Calero
16:40	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF TUNGSTEN ALLOYS WITH TIC AND TI ADDITIONS** **Elena Tejado** (Departamento de Ciencia de Materiales-CISDEM, ETSI de Caminos, Canales Y Puertos, Universidad Politécnica de Madrid) Ángel Muñoz, José Ygnacio Pastor	EMPTY SLOT	*ORAL* **HIGH-THROUGHPUT SCREENING OF ZEOLITE-BASED CATALYSTS FOR THE NH3-SCR IN COAL-FIRED POWER PLANTS** **Jochen Lauterbach** (University of South Carolina) Aixa de IValle, Erdem Sasmaz	*ORAL* **THERMODYNAMIC ASSESSMENT OF THE ZRO2–FEO–FE2O3 SYSTEM** **Dmytro Pavlyuchkov** (Technical University of Freiberg, Institute of Materials Science) Olga Fabrichnaya

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Symposium	E1II	E1III	F1I	F2I	G1II
Room	Macarena	España 2	España 3	Andalucía 3	Andalucía 6
Session Title	Structure and microstructure of chalcopyrite type absorber material in thin film solar cells	Fuel Cell Technology	Micro- and Nano-Engineered Materials for Medical Application II	Hierarchical Structures	Teaching Materials
Chairperson	Raquel Caballer and Simón López Merino	P. Jannasch		Richard Weinkamer	Arlindo Silva
15:00	*INVITED / KEYNOTE* **ATOMIC-SCALE STRUCTURE AND CATION DISTRIBUTION IN CU(IN,GA)SE2 AND CU(IN,GA)S2** **Claudia Schnohr** (Institut Für Festkörperphysik, Friedrich-Schiller-Universität Jena) Stefanie Eckner, Helena Kämmer, Tobias Steinbach, Martin Gnauck, Andreas Johannes, Christiane Stephan, Susan Schorr	*INVITED / KEYNOTE* **CAN AUTOMATIC CONTROL IMPROVE PERFORMANCE AND LIFESPAN OF FUEL CELLS?** **Carlos Bordons** (University of Seville)	*ORAL* **NEW DRUG DELIVERY SYSTEM: CARBON NANOTUBES-CISPLATIN** **Karolina Werengowska-Ciecwierz** (N. Copernicus University, Department of Chemistry, Physicochemistry of Carbon Materials Research Group,Torun, Poland) Marek Wisniewski, Artur Terzyk, Natalia Gurtowska, Tomasz Drewa	*INVITED / KEYNOTE* **BIOINSPIRED COMPOSITES WITH EXTREME MECHANICAL GRADIENTS** **Rafael Libanori** (ETH Zürich, Complex Materials) Randall M. Erb, Alain Reiser, Hortense Le Ferrand, Martin J. Süess, Ralph Spolenak, André R. Studart	*HIGHLIGHT* **WHAT IS SUSTAINABLE TECHNOLOGY? – A MATERIALS PERSPECTIVE FOR LEARNING COMPLEXITY IN ENGINEERING** **Didac Ferrer-Balas** (Universitat Politècnica de Catalunya) Mike Ashby, Jennifer Bruce
15:20			*ORAL* **SYNTHESIS AND CHARACTERIZATION OF TA-BASED THIN FILMS FOR BIOMEDICAL APPLICATIONS.** **Angelica Jara** (Escuela de Física, Facultad de Ciencias, Universidad Central de Venezuela, Caracas, Venezuela) Nicole Fréty, Gema González,		*ORAL* **AN INTERNATIONAL DUAL BACHELORS DE GREE PROGRAM IN MATERIALS SCIENCE AND MECHANICAL ENGINEERING** **William Warnes** (Oregon State University) Jamie Kruzic, Clara Pratt, Christian Stehr, David Cann, Brady Gibbons, Ralf Busch, Isabella Gallino, Zachary Evenson, Flavio Soldera
15:40	*ORAL* **SPECTROSCOPIC STUDIES ON CIGS FILMS DEPOSITED BY PASTE COATING** **Ivan Colantoni** (Dipartimento di Fisica Università de gli Studi di Roma Tor Vergata) Ivan Davoli	*ORAL* **STUDY OF THE SYNERGISTIC INTERACTION BETWEEN NICKEL, GOLD AND MOLYBDENUM IN NOVEL MODIFIED NIO/GDC CERMETS, POSSIBLE ANODE MATERIALS FOR CH4 FUELLED SOFCS** **Dimitrios K. Niakolas** (Foundation for Research and Technology, Institute of Chemical Engineering Sciences (FORTH/ICE-HT), Greece) Michalis Athanasiou, Vassilios Dracopoulos, Symeon Bebelis, Stylianos G. Neophytides	*ORAL* **PATENT BLUE VF-DECORATED DENDRONIZED IRON OXIDE NANOPARTICLES FOR SENTINEL NODE DETECTION** **Julien Jouhannaud** (Institut de Physique Et Chimie des Matériaux de Strasbourg (IPCMS)) Antonio Garofalo, de Iphine Felder-Flesch, Franklin Tellier, Patrick Poulet, Jérôme Steibel, Hervé Simon, Christophe Coillot, Carsten Weiss, Geneviève Pourroy	*HIGHLIGHT* **NANOMECHANICAL BEHAVIOR AND FLAW TOLERANCE IN LIMPET TEETH** **Barber Asa** (Queen Mary University of London) Lu Dun	*ORAL* **EDUCATIONAL INNOVATION IN MATERIALS SCIENCE AND ENGINEERING AT UNIVERSITY IN SPAIN** **Mercè Segarra** (Universitat de Barcelona) Núria Salan, Teresa Guraya, Javier Orozco, Luis Cabedo, David Sales, Pablo Lopez-Crespo, Gustavo Olivella
16:00	*ORAL* **MICROSTRUCTURAL EVOLUTION OF ALL WET CIGS FILM WITH IN-SITU RAMAN SPECTROSCOPY** **Hee-Soo Choi** (School of Integrative Engineering, Chungang University) Areum Kim, Seonjea Lee, Eunmi Choi, Yinhua Cui, Chang Hyun Kim, Soon Hyeong Kwon, Sung Gyu Pyo	*ORAL* **DEVELOPMENT OF INNOVATIVE MICROPOROUS LAYERS FOR PEM FUEL CELLS** **Paola Gallo Stampino** (Politecnico Di Milano Dipartimento Di Chimica, Materiali E Ing. Chimica) Saverio Latorrata, Riccardo Balzarotti, Cinzia Cristiani	EMPTY SLOT	*ORAL* **FEMORAL HIP STEM WITH ADJUSTABLE RIGIDITY MADE OF BETA TI ALLOY** **Rubens Caram** (University of Campinas) Eder.S.N. Lopes, Rodrigo.J. Contieri	*ORAL* **RESEARCH-ORIENTED TEACHING FOR BRIDGING DISCIPLINES IN CONVEYING EXPERTISE ON SENSORIAL MATERIALS** **Thomas Behrmann** (BIMAQ, University of Bremen) Dirk Lehmhus, Michael Lawo, Andi Dittrich, Marc Lemmel, Matthias Busse
16:20	*ORAL* **CHEMICAL AND MICROSTRUCTURAL INVESTIGATIONS OF MO/CU(IN,GA)SE2 INTERFACES.** **Sylvie Harel** (Institut des Matériaux Jean Rouxel) Mathieu Tomassini, Eric Gautron, Catherine Guillot de udon, Ludovic Arzel, Nicolas Barreau	*ORAL* **THE EFFECT OF LSM-YSZ INFILTRATED ELECTRODES ON THE PERFORMANCE OF MICROTUBULAR SOLID OXIDE FUEL CELLS** **Miguel A. Laguna-Bercero** (ICMA (CSIC-Universidad de Zaragoza)) Victor M. Orera, A. R. Hanifi, J. Cunningham, T. H. Etsell, P. Sarkar	*ORAL* **DEVELOPMENT OF DENDRONIZED SUPERPARAMAGNETIC IRON OXIDE (SPIO) NANOPARTICLES FOR MAGNETIC RESONANCE IMAGING (MRI) APPLICATIONS** **Antonio Garofalo** (Ipcms)	*ORAL* **MEASUREMENT OF LOCAL MECHANICAL PROPERTIES OF EXTREMELY SOFT GELS AND BIOLOGICAL TISSUES BY NEW NANOINDENTATION DEVICE** **Jiri Nohava** (CSM Instruments, Switzerland) Gilles Weder, Richard Consiglio, André Meister, Philippe Kempé	*ORAL* **LATERAL THINKING AND CREATIVITY IN THE UNIVERSITY CLASSES** **Paloma Fernández** (University Complutense Madrid)
16:40	*ORAL* **IMPROVEMENTS IN SUBMICRON CU(IN,GA)SE2-BASED SOLAR CELLS USING POINT CONTACT INTERLAYER BACK REFLECTOR** **Edouard Leonard** (Institut des Matériaux Jean Rouxel (IMN)) Ludovic Arzel, Nicolas barreau	*ORAL* **ADVANCES IN TUBULAR MICRO SOLID OXIDE FUEL CELLS** **Partha Sarkar** (Alberta Innovates - Technology Futures) Saeid Amiri, Luis Yamarte, Amir Hanifi, Thomas Etsell	*ORAL* **CELLULAR INTERNALIZATION OF A HOLOTRANSFERRIN-MAGHEMITE CONSTRUCT BY THE IRON ACQUISITION PATHWAY** **Hélène Piraux** (Université Paris Diderot - Laboratoire ITODYS) Miryana Hémadi, Nguyêt-Thanh Ha-Duong, Jun Hai, Nawal Serradji, Souad Ammar, Philippe Verbeke, Rémi Losno, Jean Michel El Hage Chahine	*ORAL* **HIERARCHICAL STRUCTURES FORMED BY AMORPHOUS MINERALS** **Marie-Louise Lemloh** (INM – Leibniz Institute for New Materials) Franz Brümmer Brümmer, Joachim Bill Bill, Frédéric Marin Marin, Ingrid M. Weiss	*ORAL* **INTEGRATED LEARNING DURING THE SIXTH SEMESTER OF MATERIALS ENGINEERING DEGREE AT THE UNIVERSITY OF BARCELONA.** **Ana Inés Fernández** (Universitat de Barcelona. Materials Science & Metallurgical Eng) Pere Juarez, Mònica Martínez, Elena Xuriguera, Miguel Morales, Mercè Segarra, Josep M. Chimenos

WEDNESDAY 11 SEPTEMBER 2013 / PM2

Symposium	A1I	A2III	A3I	B4I
Room	España 2	España 1	Giralda	Cartuja
Session Title	Fundamentals and synthesis of surface nanostructures	Ferroic heterostructures for multiferroicity / multiferroic films	Carbon-containing Composites and Materials III	Thermo-mechanical behaviour and structural stability
Chairperson	Yves Bellouard	L. Pintille	Karl Schulte	Jin-Chong Tan
17:30	*INVITED / KEYNOTE* **PHYSICAL PROCESSES INVOLVED IN THE MODIFICATION OF DIELECTRIC MATERIALS BY ULTRASHORT LASERS PULSES.** **Stephane Guizard** (Laboratoire des Solides Irradiés, CNRS-CEA-Polytechnique, France) Alexandros Mouskeftaras, Sergey Klimentov, Ghita Geoffroy, Nikita Fedorov, Guillaume Duchateau	*INVITED / KEYNOTE* **MAGNETIC INTERFACES IN NON-MAGNETIC PEROVSKITE FERROELECTRICS** **M. Tyunina** (University of Oulu) E. Tereshina, A. de jneka, T. Kocourek, M. Jelinek	*ORAL* **PREPARATION, CHARACTERISATION AND PROCESSING OF CARBON BLACK/SU8 NANOCOMPOSITES** **Marijana Mionic** (Ecole Polytechnique Fédérale de Lausanne (EPFL)) Arthur Ganz, Heinrich Hofmann	*HIGHLIGHT* **SUPERSTRONG SUPERCOOLED ZEOLITIC HYBRID FRAMEWORKS AND THEIR VIRTUAL MELTING POINTS** **Neville Greaves** (Department of Materials Science, University of Cambridge) Jin-Chong Tan, Thomas Bennett, Anthony Cheetham, Zhongfu Zhou,
17:50			EMPTY SLOT	*ORAL* **ANISOTROPIC ELASTIC PROPERTIES OF FLEXIBLE METAL-ORGANIC FRAMEWORKS** **François-Xavier Coudert** (Chimie ParisTech & CNRS) Aurélie Ortiz, Anne Boutin, Alain Fuchs
18:10	*ORAL* **FABRICATION OF TAILORED NANOPITS AND NANOBUMPS WITH TEMPORALLY SHAPED ULTRASHORT LASER PULSES IN WIDE AND MODERATE BANDGAP DIELECTRICS** **Javier Hernandez-Rueda** (Instituto de Óptica, CSIC) Nadine Götte, Bastian Zielinski, Michela Soccio, Jan Siegel, Cristian Sarpe, Matthias Wollenhaupt, Tiberio A. Ezquerra, Javier Solís, Thomas Baumert	*ORAL* **STRAINED SRMNO3 THIN FILMS: ENGINEERING MULTIFERROIC PROPERTIES** **Laura Maurel** (Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Spain) José Ángel Pardo, Eric Langenberg, Javier Blasco, Carsten Becher, Ricardo Jiménez, Miguel Algueró, Pablo Ramos, Manfred Fiebig, Pedro Algarabel	*ORAL* **LATEX-BASED CONDUCTIVE MATERIALS OBTAINED BY PHYSICAL BLENDS WITH NANOSIZE MULTILAYERED GRAPHENE (NMG)** **Amelie Noel** (Laboratoire SURF, Ecole des Mines de St. Etienne) Jenny Faucheu, Jean-paul Viricelle, Elodie Bourgeat-Lami	*ORAL* **NEGATIVE LINEAR COMPRESSIBILITY OF A METAL-ORGANIC FRAMEWORK** **Li Wei** (Department of Materials Science and Metallurgy, University of Cambridge) Anthony Cheetham
18:30	*ORAL* **GENESIS OF FEMTOSECOND-INDUCED NANOSTRUCTURES ON SOLID SURFACES** **Juergen Reif** (Brandenburg. Tech. Univ. (BTU) Cottbus) Olga Varlamova	*ORAL* **STRUCTURAL, ELECTRICAL AND MAGNETIC PROPERTIES OF EUMNO3 DOPED MAGNETOELECTRIC THIN FILMS** **Javier Pérez de La Cruz** (INESC-Porto) Yonny Romaguera Barcely, J. Agostinho Moreira, A. Almeida	*ORAL* **NEW FUNCTIONAL CARBON NANOTUBES-BASED MATERIALS FOR INTEGRATING IN COMPOSITES: ELECTRICAL, THERMAL AND FIRE PERFORMANCE** **Jonas Bouchard** (Ensait-Gemtex) Aurélie Cayla, Eric de vaux, Christine Campagne	*ORAL* **TRENDS IN THE MECHANICAL PROPERTIES OF METAL–ORGANIC FRAMEWORKS** **Ines Collings** (University of Oxford) Andrew Goodwin
18:50	*ORAL* **FEMTOSECOND LASER INDUCED PERIODIC SURFACE STRUCTURES ON POLYMERS** **Esther Rebollar** (Instituto de Química Física Rocasolano, CSIC) Javier R. Vázquez de Aldana, Ignacio Martín-Fabiani, Margarita Hernández, Daniel R. Rueda, Tiberio A. Ezquerra, Concepción Domingo, Pablo Moreno, Marta Castillejo	*ORAL* **DEFECT-MEDIATED DOMAIN-WALL DEPINNING OF MULTIFERROIC BIFEO3 POLYCRYSTALLINE THIN FILMS** **Iñigo Bretos** (Instituto de Ciencia de Materiales de Madrid (ICMM) - Consejo Superior de Investigaciones Científicas (CSIC)) Ricardo Jiménez, Carmen Gutiérrez-Lázaro, M. Lourdes Calzada	EMPTY SLOT	*ORAL* **MECHANICAL PROPERTIES OF ELECTROCHEMICALLY SYNTHESISED METAL-ORGANIC FRAMEWORK THIN FILMS** **Ben Van de Voorde** (Centre for Surface Chemistry and Catalysis, Katholieke Universiteit Leuven) Rob Ameloot, Maarten Everaert, Dirk E. De Vo, Jin Chong Tan
19:10	*ORAL* **LASER SURFACE TEXTURATION ON METALS WITH HIGH REPETITION RATE YTTERBIUM LASERS** **Marc Faucon** (ALPhANOV) John Lopez, Rainer Kling	*ORAL* **IMPROVED PROPERTIES OF MULTIFERROIC MULTILAYER COMPOSITE THIN FILMS OF (BI0.5NA0.5)1-XBAXTIO3 AND BIFEO3.** **Ricardo Jiménez** (Materials Science Institute of Madrid(ICMM-CSIC)) Iñigo Bretos Ullívarri, María Lourdes Calzada Coco, Jesús Ricote Santamaría, Ricardo Jiménez Riobóo	*ORAL* **IMPROVEMENT OF THE OXIDATIVE STABILITY OF NANODIAMONDS BY SURFACE PHOSPHORYLATION** **Charlene Presti** (Université Montpellier 2) Johan Alauzun, Danielle Laurencin, P. Hubert Mutin	*ORAL* **ASSESSING THE THERMO- AND PIEZO-MECHANICAL RESPONSIVENESS OF PILLARED-LAYERED SOFT POROUS CRYSTALS** **Sebastian Henke** (University of Cambridge, de pt Materials Science) Anthony K. Cheetham

WEDNESDAY 11 SEPTEMBER 2013 / PM2

Symposium	B4II	C1II	C2III	C3III
Room Name/	Andalucía 8	Sevilla 3	España 4	Andalucía 4
Session Title	Processing and Applications	FeCr-stainless steels	Joining Technologies I	Processing of Ceramics and their Mechanical Properties III
Chairperson	R. Goodall	F.Danoix	Ivan Kaban and Alberto Passerone	Arturo Domínguez
17:30	*ORAL* **PREPARATION AND CHARACTERIZATION OF POROUS AL2TIO5 WITH VARIOUS STARCHES AS PORE-FORMING AGENT** **Hitoshi Nishijima** (University of Tsukuba) Yoshikazu Suzuki	*HIGHLIGHT* **ATOMIC KINETIC MONTE CARLO MODELLING OF SOLUTE DIFFUSION AND SEGREGATION IN DILUTE BCC FE ALLOYS AND CONCENTRATED FCC FENICR ALLOYS UNDER IRRADIATION** **Christophe Domain** (Edf R&D, Département Matériaux et Mécanique des Composants (MMC)) Charlotte Becquart, Jean Baptiste Piochaud	*INVITED / KEYNOTE* **THE APPLICATION OF WELD METAL ENGINEERING IN JOINING OF DISSIMILAR METALLIC SYSTEMS USING LASER FUSION WELDING** **Supriyo Ganguly** (Cranfield Universit) Julian Fairman, Stewart Williams	*INVITED / KEYNOTE* **MICROWAVE SINTERING OF GAMMA ALUMINA WITH A NEW HYBRID HEATING CELL** **Jérémy Croquesel** (Laboratoire SIMaP) Didier Bouvard, Claude.P Carry, Jean-Marc Chaix, Dominique Goeuriot, Sébastien Saunier
17:50	*ORAL* **THE EFFECTS OF PROCESSING ON FLUID CHARACTERISTICS OF REPLICATED ALUMINIUM FOAMS.** **Farzad Barari** (The University of Sheffield) Erardo Elizondo-Luna, Robert Woolley, Russell Goodal	*ORAL* **SIMULATION OF PHASE TRANSFORMATIONS OF FERRITE IN DUPLEX STAINLESS STEELS BY ATOMISTIC KINETIC MONTE CARLO METHOD – COMPARISON TO EXPERIMENT.** **Jonathan Emo** (Groupe de Physique des Matériaux, Université et INSA de Rouen) Cristelle Pareige, Sébastien Saillet, Christophe Domain, Philippe Pareige		
18:10	*ORAL* **INFLUENCE OF POROUS LAYERS ON THE BEHAVIOUR OF YSZ-BASED ELECTROCHEMICAL EXHAUST GAS SENSORS** **Carlos López-Gándara** (FAE - Francisco Albero S.A.U.) Josep M. Fernández-Sanjuán, Xavier G. Capdevila, Francisco M. Ramos, Albert Cirera	*ORAL* **MICROSTRUCTURAL AGEING OF A PRECIPITATION HARDENED MARTENSITIC STAINLESS STEEL.** **Laurent Couturier** (SIMaP, Grenoble-INP - CNRS - UJF) Frédéric de Geuser, Alexis Deschamps	*ORAL* **PRECIPITATION OF THE GRAIN-BOUNDARY BETA-MG17AL12 PHASE DURING THE RESISTANCE SPOT WELDING OF THE AZ MAGNESIUM ALLOYS AND THEIR EFFECTS ON THE WELD MECHANICAL PROPERTIES** **Seyedtirdad Niknejad** (University of Waterloo) Shahrzad Esmaeili, Norman Y. Zhou	*ORAL* **DENSE POLYMER DE RIVED CERAMICS VIA EXTRUSION FORMING** **Lorenz Schlier** (University of Erlangen-Nuremberg, Glass and Ceramics) Nahum Travitzky, Peter Greil
18:30	*ORAL* **INFLUENCE OF DEFORMATION TEMPERATURE AND DAMAGE ON THE CRUSH CHARACTERISTICS OF TRIP-STEEL/ZIRCONIA SQUARE HONEYCOMBS** **David Ehinger** (Institute of Materials Engineering, TU Bergakademie Freiberg) Lutz Krüge, Ulrich Martin, Christian Weigelt, Christos G. Aneziris	*ORAL* **SIGMA PHASE QUANTIFICATION ON DUPLEX STAINLESS STEEL BY LINEAR VOLTAMMETRY – A NON DESTRUCTIVE TESTING –NDT TECHNIQUE** **Haroldo Ponte** (Ufpr) Paulo Zempulski, Luciana Sanches, Alysson Diógenes, Nice Kaminari, Rubens Novicki	*ORAL* **NUMERICAL MODELLING OF ELECTRODE DEGRADATION DURING RESISTANCE SPOT WELDING USING CUCRZR ELECTRODES** **Denis Carron** (Université de Bretagne Sud / LIMATB) Elise Gauthier, Philippe Pilvin, Philippe Rogeon, Cédric Pouvreau, Thomas Léty, François Primaux	*ORAL* **MANUFACTURE AND CHARACTERIZATION OF MAGNÉLI BASED CONDUCTIVE CERAMIC FIBRES** **Vaia Adamaki** (Department of Mechanical Engineering, University of Bath) Frank Clemens, Stephen Pennock, John Taylor, Chris Bowen
18:50	*ORAL* **THE INFLUENCE OF PLASMA TREATMENT ON PP FABRICS MODIFICATION BY ZNO NANORODS** **Jakub Michalski** (Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland) Szymon Jakubiak, Justyna Tomaszewska, Joanna Kalbarczyk, Marian Teodorczyk, Krzysztof Kurzydlowski	*ORAL* **STUDY OF DECOMPOSITION OF FERRITE AND AUSTENITE IN A LEAN DUPLEX STAINLESS STEEL AGED AT INTERMEDIATE TEMPERATURES.** **Jean-Yves Maetz** (INSA de Lyon, MATEIS Laboratory) Sophie Cazottes, Catherine Verdu, Frédéric Danoix, Xavier Kléber	*ORAL* **LASER BASED JOINING OF SILICON CARBIDE** **Marion Herrmann** (Technische Universität Dresden) Wolfgang Lippmann, Antonio Hurtado	*ORAL* **CERAMICS FROM CLAYS AND GALVANIC SLUDGES: PROCESSING, PROPERTIES AND MICROSTRUCTURAL CHARACTERIZATION** **Luis Pérez-Villarejo** (Dept. of Chemical, Environmental and Materials Engineering, Univ. Jaén) Pedro J. Sánchez-Soto
19:10	*ORAL* **COMPLEX METALLIC SUPPORTS FOR H2 SEPARATION MEMBRANES** **Miguel Angel Lagos** (Tecnalia) Iñigo Agote, Ekain Fernandez, Cecilia Agustin, Jose Antonio Calero	*ORAL* **QUANTITATIVE EVALUATION OF PHASE SEPARATION IN FE-CR BASED ALLOYS** **Jing Zhou** (Royal Institute of Technology) Joakim Odqvist, Mattias Thuvander, Peter Hedström	*ORAL* **INFLUENCE OF SUPERFICIAL PRETREATMENTS ON LASER WELDING OF TI6AL4V ALLOY** **Jose Maria Sanchez-Amaya** (University of Cadiz) Margarita Raquel Amaya-Vázquez, Leandro González-Rovira, Javier Botana	*ORAL* **NICKEL PROCESSED BY SPARK PLASMA SINTERING OR COMBINATION OF COLD ISOSTATIC PRESSING AND SPARK PLASMA SINTERING: CHARACTERIZATION AND COMPARISON** **David Tingaud** (Lspm Cnrs Universite Paris 13) Guy-Daniel Dutel, Patrick Langlois, Guy Dirras

WEDNESDAY 11 SEPTEMBER 2013 / PM2

Symposium	C4I	C4IV	D2I	D3I	D3II
Room	Sevilla 2	Andalucía 7	Sevilla 1	Alamillo	España 5
Session Title	Protective Coatings and Thin Films IX	Ultra-short laser surface patterning	Composites	Materials Discovery and High-Throughput Methods: Experiment II	Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior IX
Chairperson	S. Tsipas	J. Stampfl	Ruth Schwaiger	Ichiro Takeuchi	
17:30	EMPTY SLOT	*HIGHLIGHT* **ULTRAFAST LASER PROCESSING OF TRANSPARENT MATERIALS** **Felix Dreisow** (Friedrich Schiller Universität Jena, Institute of Applied Physics) Sören Richter, Felix Zimmermann, Robert Keil, Matthias Heinrich, René Heilmann, Alexander Szameit, Stefan Nolte	*ORAL* **MICROMECHANICS OF MULLITE ENVIRONMENTAL BARRIER COATINGS FOR SIC GAS TURBINES** **Emilio Jimenez Pique** (Universitat Politecnica de Catalunya) Carlos Botero, Luis LLanes, Tushar Kulkarni, Vinod Sarin	*ORAL* **SEARCHING NEW PERMANENT MAGNET PHASES BY HIGH-THROUGHPUT EXPERIMENTS** **Dagmar Goll** (Aalen University, Materials Research Institute, Aalen, Germany) Ralf Loeffler, Roman Karimi, Arne Huber, Gerhard Schneider	*ORAL* **MODELING MULTICOMPONENT PRECIPITATION KINETICS WITH CALPHAD-BASED TOOLS** **Anders Engstrom** (Thermo-Calc Software AB) Ake Jansson , Kaisheng Wu, Paul Mason, Gustaf Sterner, Qing Chen, Johan Bratberg
17:50	*ORAL* **THE TI/TIC COATINGS DEPOSITED BY MEANS OF SUPERSONIC COLD GAS SPRAY TECHNIQUE - MICROSTRUCTURE AND PROPERTIES** **Jan Kusinski** (AGH University of Sciences and Technology)	*ORAL* **SURFACE NANOSTRUCTURING OF PLATINUM THIN FILMS WITH ULTRASHORT PULSES** **Ainara Rodriguez** (CIC MicroGUNE) Maria Carmen Morant-Miñana, Alex Arriola, Santiago M Olaizola	*ORAL* **MECHANICAL PROPERTIES OF A COMPOSITE MATERIAL USED FOR THERMAL INSULATION** **Jose de l Carmen Borges Franco** (Universidad Carlos III de Madrid) Aime Guerrero, Thomas Heckel	*ORAL* **RAPID ALLOY PROTOTYPING: COMPOSITIONAL AND THERMO-MECHANICAL HIGH-THROUGHPUT BULK COMBINATORIAL DESIGN OF STRUCTURAL METALLIC ALLOYS** **Hauke Springer** (Max-Planck Institut für Eisenforschung GmbH) Michael Belde, Dierk Raabe	*ORAL* **SIMULATION STUDY OF STRUCTURAL PHASE TRANSITIONS OF RHO ZEOLITE** **Salvador Rodríguez Gómez Balestra** (University Pablo de Olavide) Juan José Gutierrez Sevillano, Patrick J. Merkling, David Dubbeldam, Sofía Calero Díaz
18:10	*ORAL* **INFLUENCE OF THE COMPOSITION AND THE IMPURITIES CONTENT ON THE OXIDATION BEHAVIOUR OF RUAL THIN FILMS** **Agustina Guitar** (Chair of Functional Materials - Dept. Materials Science & Engineering, Saarland University) Christoph Pauly, Orlando Prat, Frank Mücklich	*ORAL* **APPLICATION OF THE SHAININ'S VARIABLES SEARCH DESIGN IN ULTRA-SHORT PULSE LASER ABLATION OF CEMENTED TUNGSTEN CARBIDE** **Juan Pablo Calderón Urbina** (Institute of Laser and System Technologies (ILAS) - Hamburg University of Technology) Christian Daniel, Claus Emmelmann	*ORAL* **3D DAMAGE CHARACTERISATION DURING SEQUENTIAL TENSILE LOADING OF A MULTIDIRECTIONAL CARBON FIBRE REINFORCED EPOXY LAMINATE** **Marta Rodriguez-Hortala** (Vienna University of Technology) Guillermo Requena, Federico Sket, Jon Molina-Aldareguia, Eric Maire, Luc Salvo, Mario Scheel	*ORAL* **STUDY OF SOLID SOLUTION STRENGTHENING OF NICKEL BY TRANSITION METAL SOLUTES USING DIFFUSION COUPLES AND NANOINDENTATION** **Hamad Ur Rehman** 8WW1 FAU Erlangen) Mathias Göken, Karsten Durst	*ORAL* **ELECTRO-THERMAL MODELING OF LARGE AREA OLEDS** **Marco Barink** (Holst Centre/ TNO) Claudia Goldmann, Herman Nicolai, Alessia Senes, Stephan Harkema, Jack Levell, Herman Schoo
18:30	*ORAL* **PLASMA ASSISTED NITRIDING OF NI-BASED SUPERALLOYS WITH VARIOUS MICROSTRUCTURES: NITRIDING RESPONSE OF GAMMA MATRIX AND GAMMA'/GAMMA' PRECIPITATES** **Jean-Baptiste Dubois** (Institut Pprime - UPR 3346 - CNRS - Université de Poitiers - ENSMA) Sébastien Chollet Luc Pichon, Jonathan Cormier, Patrick Villechaise, Michel Drouet, Alain de clemy, Claude Templier	*ORAL* **SYNTHESIS OF WELL-DISPERSED MAGNETIC NANOCRYSTALS BY LASER PYROLYSIS** **Victor Sebastian** (Departamento de Ingenieria Quimica-INA- Ciber BBN. Universidad de Zaragoza) Gema Martínez, Ana Malumbres, Reyes Mallada, José L. Hueso, Jesus Santamaria	*ORAL* **NUMERICAL AND EXPERIMENTAL INVESTIGATIONS ON THE INFLUENCE OF CREEP PHENOMENA IN CARBON FIBRE REINFORCED PLASTICS (CFRP) IN HIGH AND VERY HIGH CYCLE FATIGUE** **Johannes Marder** (Institute of Plastics Processing (IKV)) Christian Hopmann	EMPTY SLOT	*ORAL* **APPLICABILITY OF TRANSPORT LEVEL CONCEPT TO MODELING OF CHARGE TRANSPORT IN VARIOUS CLASSES OF ORGANIC MATERIALS** **Vladimir Nikitenko** (National Research Nuclear University) Olga Porvatkina, Vladimir Ivannikov, Mikhail Strikhanov
18:50	*ORAL* **PREPARATION AND CHARACTERIZATION OF A NOVEL HYBRID ORGANIC-INORGANIC SOL-GEL COATING MODIFIED BY AN AMINE CROSSLINKER** **Diogenes Carbonell Boix** (Departamento de Ciencia e Ingeniería de Materiales e Ingeniería Química, Universidad Carlos III de Madrid, Leganés, Spain) Kenneth J. Croes, Victoria J. Gelling, Antonia Jiménez-Morales	*ORAL* **ENERGY DEPENDENT PROCESSING OF FIBER REINFORCED PLASTICS WITH ULTRA SHORT LASER PULSES** **Niels Schilling** (Fraunhofer Institute for Material and Beam Technology (IWS)) Andrés Lasagni, Udo Klotzbach	*ORAL* **THE ROLE OF PARTICLES IN DEFORMATION BEHAVIOR OF IN SITU AL-TICP COMPOSITE** **Su-Hyeon Kim** (Korea Institute of Materials Science) Jung-Moo Lee, Young-Hee Cho	*ORAL* **SPEEDING UP THE REACTIVITY OF SOLID RESEARCH BY COMBINATORIAL TECHNOLOGY** **Kenjiro Fujimoto** (Tokyo University of Science) Hiroki Morita, Shigeru Ito	*ORAL* **CNTS/EPOXY NANOCOMPOSITE WITH RANDOM AND ALIGNED MORPHOLOGY: MODELLING OF CNTS ALIGNMENT AND ELECTRICAL PROPERTIES BY FINITE ELEMENT APPROACH** **José M. Kenny** (University of Perugia) Manila Chieruzzi, Maurizio Natali, Andrea Terenzi, Ivan Puri
19:10	*ORAL* **AL-12SI COATINGS BY COLD GAS SPRAY FOR SURFACE PROTECTION AND REPAIR OF LIGHT ALLOYS COMPONENTS** **Juliana Bedoya Escobar** (Thermal Spray Centre (CPT). Universitat de Barcelona) Sergi Dosta Parras, Nuria Cinca Lluis, Javier Fernández Gonzalez, Josep Maria Guilemany Casadamon	*ORAL* **FEMTOSECOND LASER SURFACE NANOSTRUCTURING OF MAGNETRON SPUTTERED THIN FILMS** **Ricardo Serra** (SEG CEMUC, Department of Mechanical Engineering, University of Coimbra) João Oliveira, Victor Oliveira, Albano Cavaleiro,	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES AT HIGH TEMPERATURE OF SIC-MATRIX BY ELECTROPHORETIC DEPOSITION AND POLYMER INFILTRATION AND PYROLYSIS PROCESS** **Teresa de Juan Mangas** (Universidad Politécnica de Madrid) Elena Tejado, Alja Ivekoviè, Saša Novak, Jose Ygnacio Pastor	*ORAL* **COMBINATORIAL DEVELOPMENT OF THIN FILM SHAPE MEMORY MATERIALS** **Pio John Buenconsejo** (Institute for Materials, Ruhr-Universität Bochum) Dennis König, Alan Savan, Sigurd Thienhaus, Alfred Ludwig	EMPTY SLOT

WEDNESDAY 11 SEPTEMBER 2013 / PM2

Symposium	E1II	E2I	F1I	F2I	G1II
Room	Macarena	Andalucía 1	España 3	Andalucía 3	Andalucía 6
Session Title	Emerging materials for thin film solar cell application	Lightweight Materials and Structural Solutions for Transport Applicaations I	Micro- and Nano-Engineered Materials for Medical Application III	Organic bioinspired/ biological materials	Interdisciplinary materials teaching
Chairperson	Ivan Davoli and Andriy Zakutayev	Kayvantash K.		Tobias Kraus	Flavio Soldera
17:30	*ORAL* **COPPER NITRIDES AS A NEW FAMILY OF THIN FILM SOLAR CELL ABSORBERS** **Andriy Zakutayev** (National Renewable Energy Laboratory) Julien Vidal, Minghui Yang, Chrispopher Caskey, Xiuwen Zhang, Angela Fioretti, Vladan Stevanovic, Francis DiSalvo, Stephan Lany, David Ginley	*INVITED / KEYNOTE* **DEVELOPMENT OF FLAX-REINFORCED BIO-COMPOSITES FOR HIGH-STRENGTH AUTOMOTIVE APPLICATIONS** **Christophe Avril** (Mahytec) Pierre-Arnaud Bailly, James Njuguna, Alain de Larminat	*ORAL* **ADSORPTION OF BOVINE SERUM ALBUMIN ON PASSIVE CHROMIUM STUDIED BY AN IN-SITU ATR-FTIR SPECTROSCOPY** **Guohua Zhao** (KTH Royal Institute of Technology) Dan Persson, Ragnhild Aune, Steven Savage, Ali Tabeshian	*HIGHLIGHT* **NOVEL HYBRID INORGANIC-ORGANIC PHENYL-BEARING WOOD COMPOSITES** **Jörg Dörrstein** (Technische Universität München, Fachgebiet Biogene Polymere, Wissenschaftszentrum Straubing) Daniel Van Opdenbosch, Somruedee Klaithong, Tobias Kornprobst, Johann Plank, Sami Hietala, Cordt Zollfrank	*ORAL* **BRINGING SCIENCE, ENGINEERING, AND DESIGN TOGETHER UNDER MATERIALS TEACHING** **Arlindo Silva** (Instituto Superior Técnico, Technical University of Lisbon, Portugal) Philippe Radlovic, Hannah Melia
17:50	*ORAL* **SISN AS AN IDEAL CANDIDATE FOR HOT CARRIER SOLAR CELL ABSORBER ?** **Hugo Levard** (IRDEP (Institut de R&D sur l'Energie Photovoltaïque)) Julien Vidal, Sana Laribi, Jean-François Guillemoles		*ORAL* **SPIDER SILK PARTICLES AS DRUG DE LIVERY VEHICLES** **Elena Doblhofer** (Lehrstuhl Biomaterialien) Claudia Blüm, Martin Neubauer, Andreas Fery, Thomas Scheibel	*ORAL* **PRODUCTION AND CHARACTERIZATION OF SUBMICRO-FIBERS MADE OF RECOMBINANT SPIDER SILK PROTEINS FOR FILTER APPLICATIONS** **Stephan Jokisch** (Lehrstuhl Biomaterialien) Gregor Lang, Anja Lauterbach, Thomas Scheibel	*ORAL* **BRINGING MATERIAL SCIENCE TO LIFE, VISUALLY** **Hannah Melia** (Granta design)
18:10	*ORAL* **MULTIANALYTICAL INVESTIGATION OF NANOPRODUCTS IN THE KURAMITE-STANNITE-KESTERITE SYSTEM** **Francesco Di Benedetto** (Università Di Firenze - Dipartimento Di Scienze de lla Terra) Georg Amthauer, Andrea Caneschi, Francesco d'Acapito, Herbert Dittrich, Alessandro Lavacchi, Giordano Montegrossi, Werner Oberhauser, Luca Pardi, Maurizio Romanelli	*ORAL* **MODELING OF UNCERTAINTIES IN LONG FIBER REINFORCED THERMOPLASTICS** **Carla Beckmann** (Fraunhofer-Institut Für Werkstoffmechanik IWM) Jörg Hohe, Hanna Paul	*ORAL* **PRODUCTION OF OSTEOCONDUCTIVE HAP/PHBV COMPOSITE MATERIALS** **Aslihan Suslu** (Dokuz Eylul University, Metallurgical and Materials Eng. de pt) Aylin Albayrak, Aylin Sendemir Urkmez, Umit Cocen	*ORAL* **SYNTHETIC SPIDER SILK FIBERS WITH ADJUSTABLE MECHANICAL PROPERTIES** **Aniela Heidebrecht** (Lehrstuhl Biomaterialien) Lukas Eisoldt, Johannes Diehl, Andreas Schmidt, Thomas Scheibel	EMPTY SLOT
18:30	EMPTY SLOT	*ORAL* **PROBABILISTIC MODELING OF HYBRID TRANSITION STRUCTURES** **Vitali Bitykov** (University of Bremen / Bime) Frank Jablonski, Reinhold Kienzler	EMPTY SLOT	*ORAL* **FUNCTIONALIZED PLLA BY VEGETABLES LECITHIN USED IN TISSUE ENGINEERING** **Elmira Arab-Tehrany** (Université de Lorraine-ENSAIA) Franck Evina, Jean François Pierson, Franck Cleymand, Stéphane Desobry, Michel Linder	EMPTY SLOT
18:50	*ORAL* **SPUTTERED ANTIMONY DOPED TIN OXIDE: TRANSPARENT CONDUCTOR FILMS FOR ENERGY CONVERSION AND ENERGY SAVINGS** **José Montero** (Ciemat) Cecilia Guillén, José Herrero	*ORAL* **AB INITIO STUDY OF STACKING FAULT ENERGIES IN MG ALLOYS** **Zongrui Pei** (Max-Planck Institute for Iron Research) L.-F. Zhu, Martin Friák, Stefanie Sandlöbes, Bob Svendsen, Jörg Neugebauer, Dierk Raabe	EMPTY SLOT	*ORAL* **SMART HONEYCOMB DEVICES INSPIRED BY ICE PLANT HYDRO-ACTUATED SEED DISPERSAL** **Khashayar Razghandi** (ETH, Institute for Building Materials) Sébastien Turcaud, Luca Bertinetti, Lorenzo Guiducci, markus rüggeberg, John Dunlop, Christoph Neinhuis, Ingo Burgert, Peter Fratzl	EMPTY SLOT
19:10	*ORAL* **NEW COMPLEXES WITH 1,2,3-TRIAZOLE-BASED LIGANDS FOR LIGHT EMISSION AND PHOTOVOLTAIC APPLICATIONS** **Paul Elliott** (University of Huddersfield) Elizabeth Gibson, Pooja Panchmatia, David Cooke, Chistine Welby, Alessandro Sinopoli	*ORAL* **DESIGN OF HIGH-STRENGTH GEAR STEELS FOR USE IN ADVANCED POWER TRANSMISSION FOR LOW-EMISSION AERO-ENGINES** **Aleksej Molokanov** (University of Birmingham) Martin Strangwood, Claire Davis	EMPTY SLOT	*ORAL POSTERS*	EMPTY SLOT

Notes

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THURSDAY 12 SEPTEMBER 2013 / AM2

Symposium	A1I	A1III	A2III	A3I
Room	España 2	Andalucía 8	España 1	Giralda
Session Title	Applications (I). Laser ablation and subsurface nano-structuring	Nanomaterials	Multiferroic polycrystals	Carbon-containing Composites and Materials IV
Chairperson	Stephan Guizard	L. Torsi	M. Josse	Martine Mayne

11:00

INVITED / KEYNOTE

FUSED SILICA STRUCTURAL MODIFICATIONS INDUCED BY FEMTOSECOND LASER EXPOSURE: RECENT FINDINGS AND APPLICATIONS

Yves Bellouard (Mechanical Engineering Dpt, Eindhoven University of Technology)

INVITED / KEYNOTE

NOT A MOLECULE, NOT A POLYMER, NOT A SUBSTRATE... THE MANY FACES OF GRAPHENE AS CHEMICAL PLATFORM

Vincenzo Palermo (Nanochemistry Laboratory, CNR-Institute for Organic Synthesis and Photoreactivity, ISOF, Bologna, Italy)

ORAL

MAGNETOELECTRIC PROPERTIES IN NANOSTRUCTURED TI-DOPED BIFEO3

Amador Caballero (Instituto de Ceramica y Vidrio-CSIC)
Mara Bernardo, Teresa Jardiel, Marco Peiteado, Federico Monpean, Mar Garcia-Hernandez, Miguel Ángel García

ORAL

DISPERSION OF LONG VERTICALLY ALIGNED CARBON NANOTUBES FOR THE PREPARATION OF FIBRES

Nicolas Debski (CEA Saclay)

11:20

ORAL

PHASE FORMATION, MAGNETIC AND DIELECTRIC PROPERTIES OF (BA,BI)(B,NB)O3 (B – MN, NI) CERAMIC SOLID SOLUTIONS

Ekaterina Politova (Karpov Institute of Physical Chemistry)
Galina Kaleva, Sergey Ivanov, Alexander Mosunov, Roland Mathieu, Per Nordblad, Anil Kumar Puri

ORAL

INTERFACIAL ASPECTS OF CARBON MULTI-NANOTUBES FIBER-REINFORCED EPOXY COMPOSITES

Vincent Lutz (IMP INSA Lyon)
Nathalie Godin, Frédéric Lortie, Jannick Duchet-Rumeau, Jean-François Gérard

11:40

ORAL

TOWARDS LARGE AREA PULSED LASER DE POSITION: THE SCANNING MULTICOMPONENT PLD METHOD

German F. de la Fuente (ICMA (CSIC-Universidad de Zaragoza))
Dieter Fischer, Ruth Lahoz, Martin Jansen

INVITED / KEYNOTE

NB-TIO2 NANOTUBES: SYNTHESIS AND APPLICATIONS

Vardan Galstyan (University of Brescia and CNR-IDASC)

ORAL

MECHANOSYNTHESIS AND CHARACTERIZATION OF THE MULTIFERROIC BIMNO3-BIFEO3-PBTIO3 TERNARY SYSTEM AT MORPHOTROPIC PHASE BOUNDARIES

Carmen M. Fernández-Posada (Instituto de Ciencia de Materiales de Madrid. CSIC, Spain)
Harvey Amorín, Covadonga Correas, Teresa Hungría, Miguel Algueró, Alicia Castro

ORAL

IMPROVED CURING OF EPOXY COMPOSITES THROUGH THE ADDITION OF NANOCARBONS

Bartolomé Mas (IMDEA Materials Institute)
Juan P. Fernández-Blázquez, Juan J. Vilatela

12:00

ORAL

FEMTOSECOND LASER RESHAPING AND OPTICAL NEAR-FIELD IDENTIFICATION OF METALLIC NANOPARTICLES EMBEDDED IN DIELECTRIC MATRIX

Moritz Beleites (Centre for Innovation Competence SiLi-Nano, Martin Luther University of Halle-Wittenberg)
Gerhard Seifert

ORAL

MAGNETIC AND STRUCTURAL INVESTIGATIONS IN TBMNO3 MULTIFERROIC POLYCRYSTALS

Ivair Santos (Universidade Estadual de Maringá)
Gustavo Dias, Luiz Cótica

ORAL

INTERFACE CHARACTERISATION OF EPD-DEPOSITED CNT-NANOCOMPOSITES VIA SINGLE FIBRE PUSH OUT

Andrea Battisti (EMPA, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Mechanical Systems Engineering, Dübendorf, Switzerland)
Andreas Brunner, Rudy Ghisleni, Giovanni Pietro Terrasi

12:20

ORAL

OFF-RESONANCE FS-LASER SHAPING OF HETEROGENEOUS DISTRIBUTIONS OF EMBEDDED AG NANOPARTICLE LAYERS

Jose Gonzalo (Instituto de Optica, CSIC)
Giorgio Baraldi, Johann Toudert, Javier Solis, Jan Siegel

ORAL

OXIDE-ON-OXIDE DEPOSITION FOR IMPROVED CHEMORESISTIVE SENSORS. THE CASE OF TIO2-V2O5 AND TIO2-WO3 NANOCRYSTAL SYSTEMS

Mauro Epifani (Consiglio Nazionale de lle Ricerche - Istituto per la Microelettronica E Microsistemi (CNR-IMM))
Elisabetta Comini, Teresa Andreu, Jordi Arbiol, Pietro Siciliano, Guido Faglia, Joan Ramon Morante

ORAL

GRAIN GROWTH ANOMALY AND DIELECTRIC RESPONSE IN TI-RICH STRONTIUM TITANATE CERAMICS

Ana Senos (University of Aveiro)
Luis Amaral, Manuela Fernandes, Martin Harmer, Paula Vilarinho

INVITED / KEYNOTE

HIERARCHICAL FIBRE REINFORCED COMPOSITES WITH CNT AND TRGO MODIFIED MATRIX AND IMPROVED MECHANICAL AND ELECTRICAL PROPERTIES

Karl Schulte (Hamburg University of Technology)
Matthias Mecklenburg, Swetha Chandrasekaran, Evgenij Mannov, Samuel Buschhorn

12:40

ORAL

FEMTOSECOND PULSED LASER DEPOSITION OF METAL NANOPARTICLE FILMS

James G. Lunney (Trinity College Dublin)
Inam Mirza, Gearoid O'Connell, Tony Donnelly

ORAL

NOVEL CARBON NANOTUBE GAS SENSORS FUNCTIONALIZED BY SICN

Aylin Karakuscu (CNR-IDASC & UNIBS SENSOR Lab, Brescia, Italy)
Lung-Hao Hu, Andrea Ponzoni, Rishi Raj, Giorgio Sberveglieri

EMPTY SLOT

THURSDAY 12 SEPTEMBER 2013 / AM2

Symposium	A4I	A4IV	B4I	C1II	C2I
Room	Andalucía 1	Andalucía 6	Cartuja	Sevilla 3	Andalucía 3
Session Title	Nanowires. Growth	Nanorods and nanotubes	Advanced materials characterization for studying structure-property correlations	Phase transformation- geneneral II	Wetting I
Chairperson	J.A.Zapien		Mark Allendorf	A. Finel	B. Straumal

11:00

INVITED / KEYNOTE

0D, 1D AND 2D QUANTUM STRUCTURES IN A SEMICONDUCTOR NANOWIRES: GROWTH, STRUCTURAL MODELING, ATOMIC RESOLUTION DIRECT POLARITY ANALYSES AND OPTICAL PROPERTIES

Jordi Arbiol (Institució Catalana de Recerca i Estudis Avançats (ICREA), 08010 Barcelona, Spain)
María de la Mata, Reza Zamani, Joan R. Morante

INVITED / KEYNOTE

MULTIWALL METAL OXIDE NANOTUBES: SPONTANEOUS FORMATION AND APPLICATIONS

Dmitry Bavykin (University of Southampton)
Rachel White, Frank Walsh

HIGHLIGHT

CHARACTERIZATION OF MOFS BY COMBINED VIBRATIONAL, AND ELECTRONIC SPECTROSCOPIES

Silvia Bordiga (Torino University)
Francesca Bonino, Sachin Chavan, Jenny G. Vitillo, Carlo Lamberti

HIGHLIGHT

EFFECT OF INITIAL MICROSTRUCTURE ON THE DISSOLUTION KINETICS OF ALPHA PHASE IN TA6V TITANIUM ALLOY

Moukrane Dehmas (Institut Jean Lamour)
Richard Katemi, Elisabeth Aeby-Gautier, Benoit Appolaire, Benoit de nand, Sylvain Audion

INVITED / KEYNOTE

CAPILLARITY IN SOLIDS: 1D STRUCTURAL ELEMENTS OF POLYCRYSTALS AND STABILITY OF NANOCRYSTALLINE MATERIALS

Lasar Shvindlerman (Institut Für Metallkunde Und Metallphysik)
Günter Gottstein

11:20

ORAL

TEM ON MOFS/SOFT CRYSTALLINE MATTER

Christian Wiktor (Ruhr-Universität Bochum)
Stuart Turner, Gustaaf van Tendeloo, Roland A. Fischer

ORAL

INVESTIGATION OF SELF-ORGANISED NANOCOLUMNS IN GEMN THIN FILMS

Didier Blavette (Normandie Université)
Rodrigue Lardé, Etienne Talbot, Cristelle Pareige, Isabelle Mouton

11:40

ORAL

TUNGSTEN OXIDE AND TUNGSTEN OXYNITRIDE NANORODS FROM AU-MASKED TUNGSTEN SUBSTRATES

Fang XU (University of Exeter)
Amir FAHMI, Yimin ZHAO, Yongde XIA, Yanqiu ZHU

ORAL

POLYMER-ENCAPSULATION OF SINGLE-WALLED IMOGOLITE-LIKE ALUMINOGERMANATE NANOTUBES BY RAFT-MEDIATED EMULSION POLYMERIZATION

Ana Cenacchi Pereira (Université de Lyon, Laboratoire de Chimie, Catalyse, Polymères et Procédés (C2P2) Lyon)
Elodie Bourgeat-Lami, Muriel Lansalot, Franck D'Agosto, Antoine Thill

ORAL

STRUCTURAL COMPLEXITY IN GROUP 4 MOFS

Matthew Cliffe (University of Oxford)
Andrew Goodwin

ORAL

COUPLING PHASE-FIELD MODEL AND DISLOCATION DENSITY BASED CRYSTAL PLASTICITY MODEL

Pierre-Louis Valdenaire (Onera-CNRS, Laboratoire d'Etude des Microstructures)
Yann Le Bouar, Benoît Appolaire, Alphonse Finel

ORAL

WETTABILITY AND REACTIVITY IN GD/TI SYSTEM

Natalia Sobczak (Foundry Research Institute, Foundry Research Institute, Krakow, Poland)
Rafal Nowak, Ivan Kaban, Grzegorz Bruzda, Bartlomiej Korpala, Norbert Mattern, Jurgen Eckert

12:00

ORAL

FULL-VACUUM FABRICATION OF SUPPORTED ORGANIC@ INORGANIC SEMICONDUCTING NANOWIRES

Ana Borras (Institute of Materials Science of Seville (CSIC-U. Sevilla), Nanotechnology on Surfaces Laboratory)
Manuel Macias-Montero, A. Nicolas Filippin, Zineb Saghi, Francisco J. Aparicio, Angel Barranco, Juan P. Espinos, Agustin R. Gonzalez-Elipe

ORAL

MECHANISMS BETWEEN TUNGSTEN OXIDE AND TUNGSTEN OXYNITRIDE NANOROD CONVERSION

Fang XU (University of Exeter)
Amir FAHMI, Yimin ZHAO, Yongde XIA, Yanqiu ZHU

ORAL

PATTERNED GROWTH OF ZEOLITIC IMIDAZOLATE FRAMEWORKS BY SOLVENT-FREE TRANSFORMATION OF PREPRINTED METAL OXIDE PATTERNS

Ivo Stassen (Katholieke Universiteit Leuven)
Rob Ameloot, Dirk De Vos

ORAL

DISLOCATION-SOLUTE INTERACTIONS STUDIED BY ATOM PROBE TOMOGRAPHY

George Smith (Dept. Materials, Oxford University)
Daniel Hudson, Karen Kruska, Sergio Lozano-Perez, Michael Moody, Ceri Williams, Chris Grovenor

ORAL

WETTING OF CU AND AL BY SN-ZN-XCU ALLOYS (X = 0.5, 1, 1.5 WT.%)

Przemyslaw Fima (Institute of Metallurgy and Materials Science, Polish Academy of Sciences)
Tomasz Gancarz, Janusz Pstrus

12:20

EMPTY SLOT

ORAL

ELECTROCHEMICAL SYNTHESIS OF HEMATITE AND GOETHITE NANOWIRES

Lucas Perez (Universidad Complutense de Madrid)
Angela Llavona, Alicia Prados, Aida Serrano, Miguel Ángel García, Begoña Abad, Victor Velasco, Patricia Crespo, M. Carmen Sánchez

ORAL

ADVANCES IN THE UNDERSTANDING OF THE POLYMORPHISM OF ZEOLITIC IMIDAZOLATE FRAMEWORKS ZIFS

Stefano Leoni (Dresden Technical University)
Igor Baburin

ORAL

REVEALING DEFORMATION MECHANISMS IN MG-ZN-ZR ALLOY ADVANCED BY DEFORMATION PROCESSING

Dmitry Orlov (Ritsumeikan Global Innovation Research Organisation, Ritsumeikan University, Japan)
Alexei Vinogradov, Yuri Estrin

ORAL

TEMPERATURE DEPENDENCE OF SURFACE TENSION AND WETTING BEHAVIOR IN SN-AG/SINGLE-CRYSTAL AL2O3 SYSTEM

Chika Ohira (Joining and Welding Research Institute, Osaka University)
Hidetoshi Fujii, Yoshiaki Morisada

12:40

ORAL

LUMINESCENCE OF BI2O3 NANOWIRES IMPLANTED WITH EU AND ER IONS

Carlos Díaz-Guerra (Universidad Complutense de Madrid)
María Vila, Katharina Lorenz, Javier Piqueras, Eduardo Alves

ORAL

PROPERTIES MODIFICATION OF C AND SIC BASED MATERIALS BY CVD OF METAL OXIDES.

Antonio Gutierrez-Pardo (University of Seville, Spain)
Raquel Fiz, Joaquin Ramirez-Rico, Julian Martinez-Fernandez, Sanjay Mathur

ORAL POSTERS

Authors must opt in, ie. there'll be a sign-up sheet on Weds AM – First come first served 20 max. 90 seconds (max) per poster

ORAL

PHASE FIELD MODELING OF WIDMANSTATTEN STRUCTURES

Benoit Appolaire (Onera/CNRS - LEM)
Maeva COTTURA, Yann LE BOUAR, Alphonse FINEL

ORAL

WETTABILITY BETWEEN IRON MATRIX AND TICN REINFORCEMENT OF CERMETS AT HIGH TEMPERATURE

Paula Alvaredo (Universidad Carlos III de Madrid)
Elena Gordo

THURSDAY 12 SEPTEMBER / AM2

Symposium	C2III	C3II	C3IV	D3I
Room	España 3	Andalucía 4	Andalucía 7	España 5
Session Title	Joining Technologies II	Advanced Processing Methods to maintain Nano-Features from the Powder I	Additive Manufacturing I	Materials Discovery and High-Throughput Methods: Modelling I
Chairperson	Lars Jeurgens	A. Molinari	R. Vilar	Geoffroy Hautier
11:00	*INVITED / KEYNOTE* **INNOVATIVE HIGH-PRODUCTIVE JOINING TECHNOLOGIES FOR MULTI-MATERIAL LIGHT-WEIGHT CAR BODY STRUCTURES** **Thomas Olfermann** (Laboratory for Materials and Joining Technology) Gerson Meschut, Vitalij Janzen	*INVITED / KEYNOTE* **SPARK PLASMA SINTERING OF COMMERCIAL ALUMINA POWDER AND COMPARISON WITH HOT PRESSING** **Claude Estournes** (Cirimat) Anthony Pavia, Charles Manière, Alicia Weibel, Alain Peigney, Lise Durand, Vincent Bley, Pierre Guyot, Guy Antou, Alexandre Maitre	*ORAL* **EFFECT OF THERMOMECHANICAL TREATMENTS ON THE PROPERTIES OF TIAL6V4 FABRICATED BY SELECTIVE LASER MELTING** **Galina Kasperovich** (Institute of Materials Research, German Aerospace Center) Joachim Hausmann	*INVITED / KEYNOTE* **THE HIGH-THROUGHPUT HIGHWAY TO COMPUTATIONAL MATERIALS DESIGN** **Stefano Curtarolo** (Duke Center for Materials Genomics)
11:20			*ORAL* **DIRECT LASER FABRICATION OF TI-5553: MICROSTRUCTURE AND PROPERTIES** **Chunlei Qiu** (Department of Metallurgy and Materials, University of Birmingham) Ravi Swarmy, Arash Hatefi, Moataz Attallah	
11:40	*ORAL* **MANUFACTURING METHODS FOR PRETENSIONED HYBRID LOOP CONNECTIONS** **Oliver Focke** (Faserinstitut Bremen) Anna Lang, Axel S. Herrmann	*ORAL* **DENSIFICATION MECHANISMS IN TIAL ALLOYS PROCESSED BY SPARK PLASMA SINTERING** **Julien Guyon (**LEM3 (Laboratoire d'Etude des Microstructures et de Mecanique des Materiaux), CNRS UMR 7239, Universite de Lorraine,France) Alain Hazotte, Emmanuel Bouzy	*ORAL* **INFLUENCE OF LASER METAL DEPOSITION (LMD) PROCESS PARAMETERS ON THE INTEGRITY OF POLYCRYSTALLINE CM-247 AERO-ENGINE AND POWER GENERATION REPAIRS** **Philip McNutt** (University of Birmingham) Moataz Attallah, Roger Fairclough	*ORAL* **THERMAL CONDUCTIVITY OF GRAPHENE FROM FIRST PRINCIPLES** **Andrea Cepellotti** (Theory and Simulation of Materials, École Polytechnique Fédérale de Lausanne, Switzerland) Nicola Bonini, Nicola Marzari
12:00	*ORAL* **HIGH BRIGHTNESS LASER WELDING OF DISSIMILAR COPPER-ALUMINIUM BATTERY TERMINALS** **Fidel Zubiri** (Asociación Centro de Investigación En Tecnologías de Unión, LORTEK) Jaime Ochoa María del Mar Petite, Fermín Garciandia, Pedro Álvarez	*ORAL* **HIGH VOLTAGE CONSOLIDATION OF SPHERICAL AND FLAKE ZIRCONIUM POWDERS** **Evgeny Grigoryev** (Key Laboratory for Electromagnetic Processing of Novel Materials NRNU MEPhI) Eugene Olevsky, Luba Lebedeva,	*ORAL* **OPTIMIZATION OF ECO-FRIENDLY BINARY BINDER SYSTEM FOR POWDER INJECTION MOLDING** **Carolina Abajo** (Universidad Carlos III Madrid spain) Javier Hidalgo, Antonia Jiménez-Morales, Jose Manuel Torralba	*ORAL* **HIGH-THROUGHPUT DENSITY FUNCTIONAL SCREENING OF THERMOELECTRIC MATERIALS** **Ingo Opahle** (ICAMS, Ruhr-Universität Bochum) Georg K. H. Madsen, Alessandro Parma, Eunan J. McEniry, Ralf Drautz
12:20	*ORAL* **A STUDY ON THE EFFECT OF LASER PROCESSING PARAMETERS ON THE FORMATION OF INTERMETALLIC COMPOUNDS IN IRON-ALUMINIUM DISSIMILAR WELDING** **Sonia Meco** (Welding Engineering and Laser Processing Centre) Supriyo Ganguly, Stewart Williams	*ORAL* **DYNAMIC COMPACTION RESISTANCE SINTERING: EFFECT OF IMPACT ON PHYSICAL PROPERTIES OF COPPER PELLETS** **Philippe Acquier** (French German Research Institute of St Louis) Sebastien Lemonnier, Christina Terner, Nathalie Allain-Bonnasso, Alexis Rusinek, Thierry Grosdidier, Elodie Barraud	*ORAL* **MECHANICAL BEHAVIOR OF DENTAL IMPLANTS MANUFACTURED FROM METALLIC POWDERS BY I-MIM** **Telma Joana Ferreira** (Centro de Engenharia Mecânica Da Universidade de Coimbra) Maria Teresa Vieira	*ORAL* **HIGH-THROUGHPUT STUDY ON THE NATURE OF THE CUBIC PHASE OF ABO3 PEROVSKITES** **Giovanni Pizzi** (Theory and Simulation of Materials, École Polytechnique Fédérale de Lausanne, CH) Andrea Cepellotti, Boris Kozinsky, Marco Fornari, Nicola Marzari
12:40	*ORAL* **INFLUENCE OF LOCAL CHEMISTRY AND HEAT TREATMENT ON THE MICROSTRUCTURAL AND MECHANICAL BEHAVIOUR OF HIGH STRENGTH STEEL BASED LASER WELDS** **Qingdong Yin** (Centre des Matériaux, MINES ParisTech, UMR CNRS 7633) Anne-Françoise Gourgues-Lorenzon, Esteban Busso, Francis Schmit	*ORAL POSTERS* **ALL POSTERS AUTHORS ARE INVITED TO BRIEFLY INTRODUCE THIER WORK**	*ORAL* **SELECTIVE ELECTRON BEAM MELTING FOR THE MANUFACTURING OF TAILOR-MADE REACTORS FOR CHEMICAL ENGINEERING** **Matthias Lodes** (Zentralinstitut für Neue Materialien Und Prozesstechnik) Carolin Körner	*ORAL* **HIGH-THROUGHPUT AB-INITIO SCREENING OF BINARY 3D TRANSITION-METAL SOLID-SOLUTIONS IN OLIVINE PHOSPHATES FOR LI-ION BATTERY CATHODES** **Hamid Reza Hajiyani** (ICAMS, Ruhr-Universität Bochum) Thomas Hammerschmidt, Ralf Drautz

THURSDAY 12 SEPTEMBER 2013 / AM2

Symposium	E1II	E2I	E3I	E3IV
Room	Sevilla 2	España 4	Alamillo	Macarena
Session Title	Electronic properties of thin film solar cells related materials	Lightweight Materials and Structural Solutions for Transport Applicaations II	Materials and Membranes for Efficient Gas Separations	Materials for Nuclear Applications I
Chairperson	Sergiu Levcenco and Sylvie Harel	Von Hehl A.	Wilhelm A. Meulenberg	Fabienne Audubert
11:00	*INVITED / KEYNOTE* **RECOMBINATION ACTIVITY AT THE ATOMIC SCALE: CORRELATIVE ANALYSIS OF GRAIN BOUNDARIES IN MULTICRYSTALLINE SILICON SOLAR CELLS** **Andreas Stoffers** (Max-Planck-Institut Für Eisenforschung) Oana Cojocaru-Mirédin, Otwin Breitenstein, Winfried Seifert, Dierk Raabe	*INVITED / KEYNOTE* **DESIGNING FOR DAMAGE TOLERANCE IN AEROSPACE: A HYBRID MATERIAL TECHNOLOGY** **René Alderliesten** (TU de Ift)	*ORAL* **POLYMERIC MEMBRANES FOR CO2 SEPARATION** **Sergey Shishatskiy** (Helmholtz-Zentrum Geesthacht)	*ORAL* **EFFECTS OF THE NATURE OF THE PRECURSORS ON THE PHYSICO-CHEMICAL PROPERTIES AND STRUCTURE OF UC FUELS** **Alvaro Saravia** (CEA, DEN, DEC, SPUA, LCU, F-13108 Saint Paul Lez Durance Cedex, France) Xavier Deschanels, Stéphanie Szenknect, Olivier Fiquet, Meryl Brothier
11:20			*ORAL* **COMPUTATIONAL STUDY OF ZEOLITIC SEPARATION OF TAIL GASES IN HYDROCARBON SYNTHESIS OF FISCHER-TROPSCH PROCESS** **Julio Perez Carbajo** (Dep. of Physical, Chemical, and Natural Systems, Pablo de Olavide University) Rocio Bueno Perez, Patrick J. Merkling, Sofia Calero	*ORAL* **NEODYMIUM OXALATES STRUCTURE AND MORPHOLOGY: INFLUENCE OF ORGANIC ADDITIVES** **Anne-Lise Vitart** (CEA Marcoule) Murielle Rivenet, Bénédicte Arab-Chapelet, Isabelle Bisel, Stéphane Grandjean, Francis Abraham
11:40	*ORAL* **CHARACTERIZATIONS OF PHOTOVOLTAIC MODULES PERFORMANCES BASED ON THIN FILMS SOLAR CELLS** **Kamel Agroui** (Crtse)	*ORAL* **ADHESION AND DEGRADATION OF FITTED TITANIUM-PEEK INTERFACE WITHIN TITANIUM-CF/PEEK LAMINATES** **Karola Schulze** (German Aerospace Center (DLR)) Joachim Hausmann, Bernhard Wielage	*ORAL* **SINTERING STUDIES ON MULTI-LAYER MEMBRANE SYSTEMS FOR HYDROGEN SEPARATION** **Wendelin Deibert** (Forschungszentrum Juelich GmbH, IEK-1) Mariya Ivanova, Wilhelm A. Meulenberg, Robert Vassen, Hans Peter Buchkremer	*ORAL* **OVERVIEW OF RECENT INVESTIGATIONS ON U1-XAMXO2±D** **Denis Horlait** (CEA, DEN, DTEC/SDTC/LEMA,Bagnols-sur-Cèze Cedex, France) Florent Lebreton, Pascal Roussel, Renaud Belin, Philippe Blanchart, Thibaud de lahaye
12:00	*ORAL* **ON THE IMPROVEMENT OF SERIES CONTACT RESISTANCE AND INTERFACE MODIFICATION IN SOLAR CELL ELECTRODE** **Cui Yinhua** (Chung-Ang University) Pyo Sung Gyu, Kim Areum, Lee Seonjea, Choi Eunmi, Choi Hee Soo, Kim Chang Hyun, Kwon Soon Hyeong	*ORAL* **INFLUENCE OF PRETENSION ON JOINT STRENGTH FOR CARBONFIBRE-TITANIUM-LOOP CONNECTIONS** **Anna Lang** (Faserinstitut Bremen) Axel S. Herrmann	*ORAL* **SURFACE MODIFICATION OF LA0,6SR0,4CO0,2FE0,8O3-D HOLLOW FIBER MEMBRANES FOR OXYGEN SEPARATION** **Marijke Jacobs** (VITO) Bart Michielsen, Hong Chen, Vesna Middelkoop, Frans Snijkers,	*ORAL* **BUCKYPAPERS OF FUNCTIONALIZED NANOTUBES FOR LIQUID-SOLID EXTRACTION** **Jimmy Nicolle** (UMR 5257 - ICSM Site de Marcoule) Julien Cambedouzou Helena Kaper Agnès Grandjean
12:20	*ORAL* **ELECTRODEPOSITION IN THE ENERGY FIELD** **Massimo Innocenti** (Università Di Firenze - Dipartimento di Chimica) Francesco Di Benedetto, Ilaria Bencistà, Serena Cinotti, Lucia Becucci, Silvano Bellandi, Alessandro Lavacchi, Claudio Zafferoni, Francesco Vizza, Maria Luisa Foresti	*ORAL* **FRICTION SPOT JOINING OF ALUMINUM 6181-T4 AND CARBON FIBER REINFORCED POLY(PHENYLENE SULFIDE): EFFECTS OF PROCESS PARAMETERS ON MICROSTRUCTURE AND STRENGTH** **Seyed M. Goushegir** (Helmholtz-Zentrum Geesthacht) João V. Esteves, Sergio Amancio, Jorge F. dos Santos, Leonardo B. Canto, Elias Hage Jr.	*ORAL* **MECHANICAL PROPERTIES OF MIXED CONDUCTING CERAMIC MEMBRANE MATERIALS** **Vasiliki Stournari** (Forschungszentrum Juelich, Institute for Energy and Climate Research- IEK 2) Jürgen Malzbender, Tilmann Beck Beck, Lorenz Singheiser Singheiser	*HIGHLIGHT* **MELTING TEMPERATURE DETERMINATION OF MIXED ACTINIDE OXIDES** **Robert Böhler** (JRC - Institute for Transuranium Elements) Dario Manara, Rudy Konings
12:40	*ORAL* **THEORETICAL STUDY OF AL- AND GA-DOPED ZNO: DIFFERENCES IN ELECTRONIC AND OPTICAL PROPERTIES** **Eduardo Menéndez Proupin** (Grupo de Cálculos Cuánticos, E.T.S.I.Telecomunicación, Universidad Politécnica de Madrid) Pablo Palacios, Perla Wahnón	*ORAL* **EXPERIMENTAL INVESTIGATION OF A DAMAGE TOLERANT 3D-REINFORCED JOINING TECHNOLOGY FOR LIGHTWEIGHT STRUCTURES** **Ana Carolina Nogueira** (Fraunhofer Project Group Functional Lightweight design) Klaus Drechsler, Elke Hombergsmeier	*ORAL* **NITROGEN-DOPED POROUS CARBON MATERIALS FOR CARBON DIOXIDE CAPTURE** **Will Travis** (University College London, Department of Chemistry) Srinivas Gadipelli, Xiao Guo	*ORAL* **EVOLUTION OF PHASE COMPOSITIONS AND CRYSTALLIZATION BEHAVIOR OF DIFFERENT CERAMICS FOR NUCLEAR APPLICATIONS** **Andrey Bukaemskiy** (Juelich Forschungszentrum, IEK-6) Sarah Finkeldei, Yulia Arinicheva, Felix Brandt, Stefan Neumeier, Giuseppe Modolo, Dirk Bosbach

THURSDAY 12 SEPTEMBER 2013 / AM2

Symposium	E4I	F1I	F2I	F3I
Room	Andalucía 2	Sevilla 1	Andalucía 5	La Pinta
Session Title	Thermoelectrics	Micro- and Nano-Engineered Materials for Medical Application IV	Mineralized bioinspired/biological materials	Nanomaterials for Biosensing
Chairperson	Srdjan Simunovic		Yael Politi	Arben MerKoci
11:00	*HIGHLIGHT* **A GLOBAL DESIGN APPROACH FOR THERMOELECTRIC HARVESTING SYSTEM** **Geoffrey Roy** (UCL/iMMC/IMAP) C van der Rest, C Michiels, M Vinel, A Simar, P.J. Jacques	*INVITED / KEYNOTE* **NANO FIBROUS MATERIALS FOR TISSUE ENGINEERING APPLICATIONS** **Hisatoshi Kobayashi** (National Institute for Materials Science)	*INVITED / KEYNOTE* **MOLECULAR AND CELLULAR DESIGN FEATURES IN NACRE** **Ingrid Weiss** (INM - Leibniz Institute for New Materials) Marie-Louise Lemloh, Eva Weber, Andreas Schneider, Matthias Kellermeier, Helmut Cölfen	*INVITED / KEYNOTE* **RECENT DEVELOPMENT ON ELECTROCHEMICAL APPLICATION OF BORON-DOPED DIAMOND ELECTRODES** **Yasuaki Einaga** (Keio University)
11:20	*ORAL* **DEVELOPMENT OF HIGHLY EFFICIENT THERMOELECTRIC MATERIALS FOR AUTOMOTIVE AND MARINE APPLICATIONS** **Miguel Angel Lagos** (Tecnalia) Iñigo Agote, Jonathan Tunbridge, Richard Dixon, Michael Reece, Huanpo Ning, Yaniv Gelbstein, Kevin Simpson, Cedric Rouaud			
11:40	*ORAL* **SELF-POWERED SYSTEM FOR ENVIRONMENTAL MONITORING USING THERMOGENERATORS** **Fernando Martínez Martí** (University of Granada) Berta Molina Farrugia, Miguel Ángel Carvajal Rodríguez, Alberto José Palma López, Raul Muñoz Bernardo, Jesús Banqueri Ozáez	*ORAL* **TRANSVERSAL POROSITY GRADIENT IN ELECTROSPUN BIOPOLYESTER NANOFIBROUS MEMBRANES FOR DIRECTIONAL DRUG DELIVERY** **Nicolas Lavielle** (Empa) Ana-Maria Popa, Matthijs de Geus, Anne Hébraud, Guy Schlatter, Linda Thöny-Meyer, René Rossi	*ORAL* **MAGNETIC NANOPARTICLES FROM BACTERIA: THE PROCESS OF BIOMINERALIZATION** **Mª Luisa Fdez-Gubieda** (Departamento de Electricidad y Electrónica, UPV/EHU) Alicia Muela	*ORAL* **ANODIC STRIPPING VOLTAMMETRY OF GOLD NANOPARTICLES AT BORON-DOPED DIAMOND ELECTRODES FOR APPLICATION IN MELAMINE IMMUNOCHROMATOGRAPHIC STRIP TEST** **Tribidasari A Ivandini** (Keio University, University of Indonesia) Wiyogo P Wicaksono, Yasuaki Einaga
12:00	*ORAL* **EXPERIMENTAL AND THEORETICAL INVESTIGATIONS ON MN4SI7. HOW TO OBTAIN IT AT ROOM TEMPERATURE AND HOW TO IMPROVE ITS THERMOELECTRIC EFFICIENCY?** **Ali Allam** (Aix Marseille University) Pascal Boulet, Marie-Christine Record	*ORAL* **NANO-MECHANICAL BEHAVIOR OF BACTERIAL NANO-CELLULOSE (BNC) FOR REGENERATIVE VASCULAR TREATMENTS** **Juan Pavón** (Birck Nanotechnology Center, Purdue University, West Lafayette, IN 47907) de vendra Verma, Milad Alucozai, Ravindra Kempahia, Jean Paul Allain, Vikas Tomar	*ORAL* **CHARACTERISTICS OF BONE MATERIAL DURING FRACTURE HEALING IN SMALL ANIMAL MODELS** **Rebecca Hoerth** (Max Planck Institute of Colloids and Interfaces) Marta Aido, Daniel Baum, Hans-Christian Hege, Britta Seidt, Bettina Willie, Georg Duda, Peter Fratzl, Wolfgang Wagermaier	*HIGHLIGHT* **BIO-FUNCTIONALISED NANOPARTICLES AS DIAGNOSTIC TOOLS** **Philip Howes** (Imperial College London) Molly Stevens
12:20	EMPTY SLOT	EMPTY SLOT	*ORAL* **BIOCALCITE CRYSTAL ARCHITECTURES – FROM NANOSCALE PRIMARY PARTICLES TO FUNCTIONALIZED CM-SIZED MULTIPLEX COMPOSITE CRYSTALS** **Wolfgang Schmahl** (LMU München) Erika Griesshaber, Klemens Kelm, Andreas Ziegler, Bernd Maier	*ORAL* **SPINTRONICS MAGNETORESISTIVE PLATFORM FOR STRATIFICATION AND DECISION-MAKING ON TREATMENT OF LUNG CANCER PATIENTS** **Verónica Martins** (INL-International Iberian Nanotechnology Laboratory) Rodrigo Valiente, Marta Prado, Sofia Martins, Tomás Dias, Filipe Cardoso, Susana Cardoso, Paulo Freitas
12:40	*ORAL* **INFLUENCE OF THE CHARACTERISTICS OF GRAPHENE MATERIALS ON THEIR PERFORMANCE AS POSITIVE ELECTRODES IN VANADIUM REDOX FLOW BATTERIES** **Patricia Alvarez** (Incar-Csic) Zoraida González, Cristina Botas, Clara Blanco, Ricardo Santamaría, Marcos Granda, Rosa Menendez	*ORAL* **CELLULLOSE NANOWHISKERS AS NANOSTRUCTURED COATINGS OF BIOACTIVE GLASS SCAFFOLDS** **Nere Garmendia** (FideNa, 31006 Pamplona, SPAIN) Uxua Pérez de Larraya, Juncal Estella, Wei Li, Aldo R. Boccaccini	*ORAL* **OSTEOCYTE LACUNO-CANALICULAR NETWORKS IN RELATIONSHIP TO THEIR FORMATION AND FUNCTION IN BONE** **Felix Repp** (Max Planck Institute of Colloids and Interfaces, Department of Biomaterials) Philip Kollmannsberger, Michael Kerschnitzki, Andreas Roschger, Paul Roschger, Gerorg Duda, Wolfgang Wagermaier, Peter Fratzl, Richard Weinkamer	*HIGHLIGHT* **DNA-BASED NATURE-INSPIRED NANOSWITCHES FOR DIAGNOSTIC APPLICATIONS** **Francesco Ricci** (University of Rome Tor Vergata) *13:00 EXTRA SESSION - HIGHLIGHT* **GROWTH OF FLUORESCENT NANOPARTICLES FOR BIOANALYSIS** **Valeri Pavlov** (CIC BiomaGUNE) Laura Saa, Gaizka Garrai

THURSDAY 12 SEPTEMBER 2013 / PM1

Symposium	A1I	A1III	A2III	A3I
Room	España 2	Andalucía 8	España 1	Giralda
Session Title	Applications (II): Photonics	Organic- and bio-electronic	Strain-mediated magnetoelectricity: films	Carbon-containing Composites and Materials V
Chairperson	Javier Solis	G. Sberveglieri	M.Tyunina	Eric Anglaret
15:00	*ORAL* **TWO-PULSE INVESTIGATION OF THE FEMTOSECOND LASER ABLATION DYNAMICS OF CO/ZNS TARGETS** **Ignacio Lopez-Quintas** (Instituto de Química Física Rocasolano, CSIC, Madrid, Spain) Vincent Loriot, Jesús González Izquierdo, Rebeca de Nalda, Luis Bañares, Marta Castillejo, Margarita Martín	EMPTY SLOT	*INVITED / KEYNOTE* **INTERFACE-COUPLING AND PHASE-SEPARATION: KEYS TO LARGE MAGNETOELECTRIC COUPLING IN MULTIFERROICS** **Josep Fontcuberta** (Institut de Ciència de Materials de Barcelona (ICMAB-CSIC)) Ignasi Fina, Nico Dix, Xavier Martí, J.M. Rebled, Florencio Sánchez, Francesca Peiró, Brahim Dkhil, O. O'Flynn, G. Balakrishnan	*ORAL* **LASER SURFACE ACTIVATION AS A SYSTEMATIC TOOL TO IMPROVE THE ADHESIVE BEHAVIOUR OF AERONAUTICAL CFRP** **Marta Botana Galvin** (TITANIA Ensayos Y Proyectos Industriales) José María Sánchez Amaya, Fernando Serrano Collante, Leandro González Rovira
15:20	*ORAL* **FORMATION OF POLYCRYSTALLINE TIO2 ON RBTIOPO4 SINGLE CRYSTALS BY ULTRAFAST LASER ABLATION AND THERMAL ANNEALING** **Pablo Moreno** (Universidad de Salamanca) Javier Rodríguez Vázquez de Aldana, Joan Carvajal, G Raj Kumar, Maria Cinta Pujol, X Mateos, J Massons, RM Sole, Isabel Gallardo, Luis Roso, Francesc Díaz	*ORAL* **INTEGRATION OF FUNCTIONAL BIOLOGICAL INTERLAYER IN OFET DEVICES** **Luisa Torsi** (Dipartimento di Chimica - Università degli Studi di Bari "A. Moro" – Bari (Italy)) Maria Magliulo, Kyriaki Manoli, Eleonora Macchia, Francesco Giordano, Antonia Mallardi, Gerardo Palazzo		*ORAL* **METAL MATRIX COMPOSITES REINFORCED BY CARBON NANOTUBES** **Sónia Simões** (CEMUC, Faculdade de Engenharia da Universidade do Porto (FEUP) , Portugal) Marcos A. L. Reis, Filomena Viana, Manuel F. Vieira
15:40	*INVITED / KEYNOTE* **FLUORESCENCE IMAGING OF ULTRAFAST LASER INSCRIBED MICRO-LASERS** **Daniel Jaque** (Universidad Autonoma de Madrid)	*ORAL* **BIOPHOTONIC SENSING CELLS (BI-CELLS) FOR LABEL-FREE BIOSENSING** **Miguel Holgado** (ETSII-Universidad Politécnica de Madrid) María Fé Laguna, Rafael Casquel, Francisco Javier Sanza, Álvaro Lavín, Ana López, María José Bañuls, Carlos Angulo Barrios, Victor Canalejas, Rosa Puchades	*ORAL* **LOW-TEMPERATURE NANOSCALE INVESTIGATION ON LA0.7CA0.3MNO3/ BATIO3 THIN FILMS.** **Carmen Munuera** (Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC)) Aurora Alberca, Federico J. Mompean, Norbert M. Nemes, Javier Tornos, Jon Azpeitia, Carlos León, Jacobo Santamaría, Mar García-Hernández	EMPTY SLOT
16:00		*ORAL* **A SUPERHYDROPHOBIC, SELF-CLEANING, POLYTHIOPHENE BASED SOLAR SENSOR.** **Athanasios Milionis** (Nanophysics, Istituto Italiano di Tecnologia, Genova, Italy) Evie L. Papadopoulou, Roberto Giannuzzi, Ilker S. Bayer, Athanassia Athanassiou	*ORAL* **3D CHEMICAL NANOCHARACTERIZATION: EELS TOMOGRAPHY OF BFO/ CFO SELF ASSEMBLED STRUCTURES** **Lluís Yedra** (Laboratory of Electron Nanoscopies (LENS)- MIND/IN2UB, Dept. d'Electrónica, Universitat de Barcelona, Spain) Alberto Eljarrat, José Mauel Rebled, Nico Dix, Florencio Sanchez, Josep Fontcuberta, Sònia Estradé, Francesca Peiró	*ORAL* **STRUCTURAL AND CHEMICAL CHARACTERISTICS OF CU-CNTS IN AN AL/CU-CNT COMPOSITE PROCESSED USING ULTRASONIC CAVITATION** **Alberto Miranda** (Brunel Centre for Advanced Solidification Technology, Brunel University) Noe Alba-Baena, Brian Mckay, Dmitry Eskin, S.H. Ko, Je-Sik Shin
16:20	*ORAL* **3D LASER NANOSTRUCTURING OF YAG LASER CRYSTALS** **Airan Rodenas** (Heriot Watt University) Debaditya Choudhury, Wah-Tung Lau, Daniel Jaque, Min Gu, Sajeev John, Ajoy Kar,	EMPTY SLOT	*ORAL* **PREVENTING TI DIFFUSION INTO COFE2O4 THIN FILMS: STO//MAO AND MAO// STO BUFFER STRATEGIES** **José Manuel Rebled Corsellas** (Institut de Ciència de Materials de Barcelona-CSIC) Michael Foerster, Sònia Estradé, Qinyuan Bin, Franco Rigato, C. K. Kanamadi, Florencio Sánchez, Francesca Peiró, Josep Fontcuberta	*INVITED / KEYNOTE* **CARBON NANOPARTICLE REINFORCED LIGHT WEIGHT METAL COMPOSITES** **Qianqian Li** (ZMP, University of Erlangen-Nuremberg) Robert Singer
16:40	*ORAL* **NOVEL LASER MATERIALS PROCESSING FOR FUNCTIONAL PHOTONIC DEVICES** **Gin Jose** (University of Leeds) Tarun Kakkar, Matthew Murray, Paul Steenson, Toney Fernandez, Animesh Jha	*ORAL* **BIOSENSING COMPARISON BETWEEN DIFFERENT GEOMETRIES BASED ON VERTICAL SUBMICRON-STRUCTURES MADE OF SU-8 RESIST** **Francisco Javier Sanza** (Centro Láser- Universidad Politécnica de Madrid) María Fé Laguna, Rafael Casquel, Ana López, Miguel Holgado	*ORAL* **GROWTH OF TEXTURED NIFE2O4 THIN FILMS VIA CHEMICAL SOLUTION DEPOSITION TO IMPROVE THE MAGNETOSTRICTION PROPERTIES IN PBZR0.52TI0.48O3/NIFE2O4 MULTIFERROIC LAMINATED COMPOSITES** **Justin Schwartz** (North Carolina State University) Nazanin Bassiri-Gharb, Safoura Seifikar	

THURSDAY 12 SEPTEMBER 2013 / PM1

Symposium	A4I	A4II	A4IV	B4I	C2I
Room	Andalucía 1	La Pinta	Andalucía 6	Cartuja	Andalucía 3
Session Title	Nanowires. Optical characterization	Nanopowders for Applications in Biology, Medicine, Photonics and Photovoltaics III	Nanochemistry	Computational studies and simulations	Wetting II
Chairperson	G. Salviati	Stuart Irvine		Bartolomeo Civalleri	N. Sobczak
15:00	*INVITED / KEYNOTE* **SEMICONDUCTOR-NANOROD PLASMONIC NANOLASERS** **Shangjr Gwo** (National Tsing Hua University)	*INVITED / KEYNOTE* **COLLOIDAL PHOTONIC CRYSTAL THIN FILM LIGHT CAPTURE STRUCTURES FOR ADVANCED PHOTOVOLTAICS** **Martyn Pemble** (Tyndall National Institute University College Cork) Maria Bardosova, Syara Kassim, Joe McGrath, Sibu Padmanabhan	*INVITED / KEYNOTE* **SIMULTANEOUS SYNTHESES OF POLYOXOMETALATES AND METAL NANOPARTICLES FROM MOLECULAR PRECURSORS: NEW APPROACHES TO REDOX-ACTIVE METAL-OXIDE MICROREACTORS AND FUNCTIONAL NANOMATERIALS** **Scott Mitchell** (University of Zaragoza) Jesus M. de la Fuente	*INVITED / KEYNOTE* **ADSORPTION AND DYNAMICS OF GUEST MOLECULES IN HYBRID POROUS MATERIALS: A COMPUTATIONAL EXPLORATION** **Guillaume Maurin** (ICGM UMR 5253 CNRS UM2 UM1 CNRS, Université Montpelier 2)	*HIGHLIGHT* **TAILORED SUBSTRATE FOR TUNABLE REACTIVE WETTING** **Qingquan Lai** (Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences) Lei Zhang, Nicolas Eustathopoulos
15:20					*ORAL* **NANOSCALE DYNAMIC WETTING AND SPREADING OF TI MOLTEN ALLOY ON 6H-SIC** **Shun-Ichiro Tanaka** (IMRAM, Tohoku University) Chihiro Iwamoto
15:40	*ORAL* **MORPHOLOGICAL AND OPTICAL PROPERTIES OF NANOCOLUMNAR INN FILMS GROWN BY RF SPUTTERING** **Fernando B. Naranjo** (GRIFO, University of Alcalá, Alcalá de Henares (Spain)) Laura Monteagudo-Lerma, Arántzazu Núñez-Cascajero, Miguel González-Herráez, Sirona Valdueza-Felip, Eva Monroy, Jordi Ibáñez, Luis Artús	*ORAL* **PERIODICAL STRUCTURES TO IMPROVE LIGHT HARVESTING IN DYE SOLAR CELL** **Carmen López-López** (Instituto de Ciencia de Materiales de Sevilla (ICMSE)) Silvia Colodrero, Hernán Míguez	*ORAL* **SMART FUNCTIONAL NANOMATERIALS SYNTHESIS FROM MOLECULAR ENGINEERING** **Stephane Daniele** (Ircelyon) Shashank Mishra	*ORAL* **BIO-COMPATIBLE METAL-ORGANIC FRAMEWORKS AS POTENTIAL DRUG-CARRIERS** **David Fairen-Jimenez** (Universidad Nacional de San Luis CONICET) Maria C. Bernini, Marcelo Pasinetti, Antonio J. Ramirez-Pastor, Randall Q. Snurr	*ORAL* **CAPILLARITY IN INFILTRATION** **Alain Léger** (École Polytechnique Fédérale de Lausanne (EPFL)) José Miguel Molina Jordà, Ludger Weber, Andreas Mortensen
16:00	*ORAL* **WHISPERING GALLERY MODES IN INDIUM OXIDE MICROWIRES WITH DIFFERENT CROSS SECTIONAL SHAPE** **Javier Bartolome** (Universidad Complutense de Madrid) Ana Cremades, Javier Piqueras	*ORAL* **URCHIN-INSPIRED ARCHITECTURES FOR SOLAR CELLS** **Laetitia Philippe** (Swiss Federal Laboratories for Materials Science and Technology (EMPA)) Jamil Elias, Ivo Utke, Johann Michler, Mikhael Bechelany	*ORAL* **HYDROXIDE NANOCRYSTALS AS BUILDING BLOCKS FOR MESOPOROUS INDIUM TIN OXIDE LAYERS** **Jiri Rathousky** (J. Heyrovský Institute of Physical Chemistry, Prague, Czech Republic) Dina Fattakhova-Rohlfing Yujing Liu, Goran Stefanic, Oliver Hayden, Thomas Bein	*ORAL* **COMPUTATIONAL SURVEY OF DENSE HYBRID FRAMEWORK MATERIALS** **Monica Kosa (**Bar Ilan University, Department of Chemistry)	*ORAL* **WETTABILITY STUDY OF LIQUID PROMOTERS FOR IMPROVED LIQUID PHASE SINTERING PROCESS OF STEELS** **Elena Bernardo** (Universidad Carlos III de Madrid) Raquel Oro, Mónica Campos, José Manuel Torralba
16:20	*INVITED / KEYNOTE* **CHEMICAL SYNTHESIS AND FUNCTIONALIZATION OF INORGANIC NANOWIRES AND NANO-HETEROSTRUCTURES** **Sanjay Mathur** (Institute of Inorganic Chemistry, University of Cologne) Hao Shen Thomas Fischer, Robin von Hagen, Ralf Müller, Jun PanJun Pan	*ORAL* **TEM STUDY OF INGAN NANOWALL NETWORK GROWTH ON SI(111) FOR PV APPLICATIONS.** **José M. Mánuel** (Department of Material Science, Metallurgical Engineering and Inorganic Chemistry. UCA) Francisco M. Morales, Juan J. Jiménez, Rafael García, Paul E. D. Soto, Praveen Kumar, Víctor J. Gómez, Naaved H. Alvi, Richard Nötzel	*ORAL* **FROM COLLOIDAL CHEMISTRY TO FUNCTIONAL @ZNO AND @SIO2 NANOMATERIALS** **Fabien Grasset** (UMR 6226 CNRS-Université de Rennes 1) Tangi Aubert, Nicolas Nerambourg, Chrystelle Neaime, Stéphane Cordier, Michel Mortier, Noriko Saito, Ohashi Naoki, Hajime Haneda	*ORAL* **COMPUTATIONAL VIEW OF SELECTIVE GATE-DRIVEN DIFFUSION OF CO2 OVER N2 IN MFU-4** **German Sastre (**Instituto de Tecnologia Quimica UPV-CSIC)	*ORAL* **EFFECT OF OXYGEN PARTIAL PRESSURE ON SURFACE TENSION OF LIQUID COPPER** **Majid Abbasi** (Department of Materials Science and Engineering, Korea University) Yunkyum Kim, Joongkil Choe, Minsoo Shin, Joonho Lee
16:40		*ORAL* **THE CONCEPT OF NOVEL EFFICIENT LUMINESCENT SILICON NITRIDE MATERIALS FOR SOLAR CELLS: CHALLENGES AND PERSPECTIVES** **Joanna K. Bendyna** (Eindhoven University of Technology)	*ORAL* **DESIGN OF IRON OXIDE NANOSTRUCTURES FOR ENERGY AND BIOMEDICAL APPLICATIONS** **Sylvie Begin** (Ipcms) Sylvie Begin, Aurelie Walter, Olivier Gerber, Yu Liu, Dominique Begin, Benoit Pichon	*HIGHLIGHT* **HYBRID IMPROPER FERROELECTRICITY IN A MULTIFERROIC AND MAGNETOELECTRIC METAL-ORGANIC FRAMEWORK** **Alessandro Stroppa** (CNR-SPIN, UOS L'Aquila, Italy) Paolo Barone, Prashant Jain, Juan Manuel Perez-Mato, Silvia Picozzi	*ORAL* **MISCIBILITY BETWEEN OLD AND NEW BINDERS FOR ROAD APPLICATIONS** **Layella Ziyani** (Ifsttar) Vincent Gaudefroy, Valéry Ferber, Ferhat Hammoum

THURSDAY 12 SEPTEMBER 2013 / PM1

Symposium	C2III	C3II	C3IV	D3I
Room	España 3	Andalucía 4	Andalucía 7	España 5
Session Title	Joining Technologies III	Advanced Processing Methods to maintain Nano-Features from the Powder II	Additive Manufacturing II	Materials Discovery and High-Throughput Methods: Modelling II
Chairperson	Jolanta Janczak-Rusch	C. Estournés	M. Desmulliez	Giovanni Pizzi
15:00	*HIGHLIGHT* **EVALUATION OF DIFFERENT BRAZE ALLOYS FOR TRANSIENT LIQUID PHASE BONDING OF CM 247 (CC/DS) AND RENÉ 80 – SIMULATION AND EXPERIMENTAL APPROACH** **Britta Laux** (Siemens AG Energy Sector E F PR GT EN MT 2 4) Sebastian Piegert	*INVITED / KEYNOTE* **FABRICATION OF HIGH STRENGTH NANOCRYSTALLINE ZRO2-SPINEL COMPOSITE USING SPARK-PLASMA-SINTERING (SPS) TECHNIQUE** **Koji Morita** (Advanced Ceramics Group, National Institute for Materials Science (NIMS)) Byung-Nam Kim, Hidehiro Yoshida, Keijiro Hiraga, Yoshio W Sakka,	*ORAL* **DESIGN RULES FOR ADDITIVE MANUFACTURING OF TITANIUM CELLULAR STRUCTURES BY ELECTRON BEAM MELTING** **Mathieu Suard** (SIMaP Laboratory) Benjamin Vayre, Pierre Lhuissier, Rémy Dendievel, Frederic Vignat, Jean-Jacques Blandin, François Villeneuve	*ORAL* **DATA MINING HIGH THROUGHPUT DENSITY FUNCTIONAL THEORY CALCULATIONS** **Georg Madsen** (ICAMS, Ruhr-Universität Bochum) Ingo Opahle, Marco Dorigo, Ralf Drautz
15:20	*ORAL* **JOINING OF CU, NI AND TI USING NOVEL AU-GE-(SB, SN) HIGH-TEMPERATURE SOLDER ALLOYS** **Nico Weyrich** (EMPA - Swiss Federal Laboratories for Materials Science and Technology) Shan Jin, Liliana Duarte, Christian Leinenbach		*ORAL* **ANALYSIS OF THE IMPORTANCE OF THE PARAMETER SHIELDING GAS AND ELECTRODE ANGLE IN A GAS TUNGSTEN ARC WELDING (GTAW) PROCESS FOR TUNGSTEN CARBIDE (WC) MMC CLADDING** **Stephan Herbst** (Cranfield University Welding Research and Laser Processing Centre) Stewart Williams, Supriyo Ganguly	*ORAL* **ADMIRAL FRAMEWORK- ADVANCED DATA-MINING FOR IMPROVED RESEARCH AND LEARNING** **Igor Popov** (Trinity College Dublin) Stefano Sanvito
15:40	*ORAL* **JOINING OF ZRB2 CERAMICS TO TI6AL4V BY NI-BASED INTERLAYERS** **Fabrizio Valenza** (National Research Council - Institute for Energetics and Interphases (CNR-IENI)) Cristina Artini, Alberto Passerone, Paolo Cirillo, Maria Luigia Muolo	*ORAL* **SYNTHESIS OF NANOSTRUCTURED ZINC OXIDE BY MEANS OF FAST/ SPS** **Benjamin Bohne** (Friedrich-Schiller-University Jena) Jesus Gonzalez, Olivier Guillon	*ORAL* **NEW DEVELOPMENTS IN MICRO HOT EMBOSSING OF STAINLESS STEEL/ POLYMER MIXTURES** **Elsa W. Sequeiros** (CEMUC, Department of Metallurgical and Materials Engineering, University of Porto, Portugal) M. T. Vieira	*ORAL* **FINDING LOW HOLE EFFECTIVE MASSES P-TYPE TRANSPARENT CONDUCTING OXIDES THROUGH HIGH-THROUGHPUT COMPUTING** **Geoffroy Hautier** (Université Catholique de Louvain) Miglio Anna, Ceder Gerbrand, Rignanese Gian-Marco, Gonze Xavier
16:00	*ORAL* **DIFFUSION BRAZING OF SINGLE CRYSTALLINE NICKEL BASE SUPERALLOYS WITH GERMANIUM CONTAINING BRAZE ALLOY** **Thomas Lorenz** (Department of Materials Science and Engineering, Institute WTM, University of Erlangen - Nürnberg) Robert Singer	*ORAL* **ER3+:YAG TRANSPARENT CERAMICS BY COMBINATION OF SPARK PLASMA SINTERING (SPS) AND HOT ISOSTATIC PRESSING (HIP) FOR LASERS APPLICATIONS** **Aurélien Katz** (Isl) Elodie Barraud, Sébastien Lemonnier, Anne Leriche, Sophie D'Astorg	*ORAL* **ADDITIVE MANUFACTURING OF SINGLE PHASE IRON ALUMINIDE BY LASER CLADDING USING ELEMENTAL POWDER MIXTURES** **Benjamin Bax** (Saarland University) Frank Mücklich	EMPTY SLOT
16:20	*ORAL* **IN SITU REACTION-ASSISTED DIFFUSION BONDING USING LAYERED THIN FILMS/FOILS** **André João Cavaleiro** (CEMUC, Departamento de Engenharia Mecânica, Faculdade de Ciências e Tecnologia, Universidade de Coimbra, Portugal) Ana Sofia Ramos, Maria Teresa Vieira, Francisco Braz Fernandes	*ORAL* **COUPLING OF SLIP CASTING ANS SPARK PLASMA SINTERING TO PRODUCE POLYCRYSTALLINE Y2O3:EU3+ CERAMICS OF SUB-MICRON GRAIN SIZE** **Damien Bregiroux** (Université Pierre Et Marie - LCMCP - Paris) Radenka Krsmanovic, Zeljka Antic, Bruno Viana, Miroslav Dramicanin	*ORAL* **DESING OF TITANIUM-ALUMINA AQUEOUS SUSPENSIONS FOR PROCESSING BY PRESSURE SLIP CASTING** **Roberto García** (Universidad Carlos III de Madrid (UC3M)) Begoña Ferrari, Antonio Javier Sánchez, Cécile Pagnoux	*ORAL* **RATIONALIZING AND SCREENING HIGH THROUGHPUT DFT CALCULATIONS USING SYSTEMATIC TIGHT BINDING MODELS** **Alessandro Parma** (Icams) Eunan McEniry, Ingo Opahle, Georg Madsen, Ralf Drautz
16:40	*ORAL* **LIGHTWEIGHT ALLOYS BONDED WITH COMMERCIAL NI/AL NANOLAYERS** **Sónia Simões** (CEMUC, Faculdade de Engenharia da Universidade do Porto (FEUP), Portugal)) Filomena Viana, Manuel F. Vieira	*ORAL* **FAST FIRING AND SPARK PLASMA SINTERING OF NANOSTRUCTURED PB(FE1/2NB1/2)O3 CERAMICS** **Jose Eiras** (Universidade Federal de São Carlos) William Nascimento	EMPTY SLOT	*ORAL* **AB INITIO DATA MINING OF HYDROGEN SOLUTION ENTHALPIES: SYSTEMATIC TRENDS FOR A COMPLETE SET OF HOST METALS** **Ugur Aydin** (Max-Planck-Institut Für Eisenforschung GmbH) Tilmann Hickel, Jörg Neugebauer

THURSDAY 12 SEPTEMBER 2013 / PM1

	Symposium	Room	Session Title	Chairperson
	E1II	Sevilla 2	Materials for CSP plants and solar fuels	Christos Agrafiotis
	E2I	España 4	Lightweight Materials and Structural Solutions for Transport Applicaations III	Von Hehl A.
	E3I	Alamillo	Materials for Applications in Energy Devices	Dmitry Naumenko
	E3IV	Macarena	Materials for Nuclear Applications II	Stefan Neumeier
15:00	*INVITED / KEYNOTE* **THERMOCHEMICAL CONVERSION OF SUNLIGHT TO LIQUID FUELS VIA CERIA REDOX CYCLES** **Jonathan Scheffe** (Department of Mechanical and Process Engineering, ETH Zurich) Philipp Furler, Aldo Steinfeld	*INVITED / KEYNOTE* **LOAD TRANSFER WITH PIN-BASED FORM-FIT TECHNOLOGY IN STEEL-ALUMINIUM HYBRID CASTINGS** **Rudolf Gradinger** (LKR Leichtmetallkompetenzzentrum Ranshofen GmbH) Stephan Ucsnik, Almedin Becirovic, Andreas Waldhör	*ORAL* **CONTROLLED SYNTHESIS OF N-DOPED TIO2 BY BIOMIMETIC MINERALIZATION PATHWAY FOR GREEN ENERGY DEVICES** **Peter Schaaf (**TU Ilmenau) Dong Wang, Yong Yan	*ORAL* **STRUCTURE INVESTIGATION OF METASTUDTITE, UO4*2H2O** **Sabrina Labs** (Institute of Energy and Climate Research - IEK-6) Monika Hartl, Andreas Neumann, Luke Daemen, Hilde Curtius, Dirk Bosbach
15:20			*ORAL* **ROLE OF CERAMIC MATRIX FUNCTIONALITY IN COMPOSITE ELECTROLYTES** **Fernando Marques** (University of Aveiro) Ana Rondão, Sónia Patrício, Filipe Figueiredo	*ORAL* **ATOMISTIC SIMULATION OF THORIUM OXIDE, AN ALTERNATIVE NUCLEAR FUEL** **David Cooke** (University of Huddersfield) Paul Martin, Robert Cywinski
15:40	*ORAL* **SOLAR MIRROR DEGRADATION UNDER ACCELERATED AGEING MONITORING BY COLORIMETRIC MEASUREMENT OF PROTECTIVE BACK LAYER** **Olivier Raccurt** (Cea Ines, Solar Technologies Department, Thermal Systems Laboratory) Christine Delord, Céline Bouquet, Raphaël Couturier	*ORAL* **EPOXY COMPOSITES WITH ENHANCED THERMAL CONDUCTIVITY OBTAINED BY THE FIELD-AIDED FILLER ORIENTATION** **Grzegorz Kmita** (ABB Corporate Research Center, Krakow, Poland) Andrzej Rybak, Czeslaw Kapusta, Karolina Gaska	*ORAL* **PHASE-FIELD BASED MULTI-PHYSICS SIMULATIONS FOR NEW BATTERY SYSTEMS** **Heike Emmerich** (University of Bayreuth) Holger Federmann, Henning Hörstermann, Michael Fleck	*ORAL* **SYNTHESIS AND CHARACTERIZATION OF YTTRIA-DOPED THORIA ELECTROLYTE FOR OXYGEN SENSORS IN LIQUID SODIUM** **Marie Gabard** (CEA, DEN, DTN/STPA/LIPC Cadarache) Laurent Brissonneau, Nicolas Clavier, Nicolas Dacheux, Marlu César Steil, Jacques Fouletier
16:00	*ORAL* **DEVELOPMENT OF STANDARDIZED TESTS FOR ALUMINIUM REFLECTORS** **Johannes Wette** (German Aerospace Center (DLR)) Florian Sutter, Aránzazu Fernández-García	*ORAL* **STEEL-CERAMIC-COMPOSITES: SOME BASIC CONSIDERATIONS ON PARTICLE SELECTION CRITERIA** **Gregor Arth** (Montanuniversitaet Leoben) Christian Bernhard, Andrej Samoilov, Ludovic Samek	*ORAL* **EFFECT OF AMONIA SPECIES ON COPPER BEARING STEELS** **Václav Šefl** (Institute of Chemical Technology In Prague) Jaroslav Bystriansky	*HIGHLIGHT* **MONITORING THE MICROSTRUCTURE OF THO2 SINTERED PELLETS THROUGH THE COMBINATION OF HT-ESEM OBSERVATIONS AND DILATOMETRY** **Nicolas Clavier** (ICSM - UMR 5257 CEA/CNRS/UM2/ENSCM) Renaud Podor, Johann Ravaux, Nicolas Dacheux
16:20	*ORAL* **DEVELOPMENT OF NEW SELECTIVE ABSORBERS FOR HIGH TEMPERATURE SOLAR HARVESTING APPLICATIONS: FROM OPTICAL SIMULATIONS TO REAL OPERATION** **Ramon Escobar Galindo** (Instituto de Ciencia de Materiales de Madrid,(ICMM-CSIC) Madrid (Spain)) Eva Cespedes, Jose Angel Sanchez Garcia, Jose Maria Albella, Carlos Prieto	*ORAL* **TENSILE DUCTILITY OF LAMINATED COMPOSITES : ROLE OF STRAIN-RATE HARDENING** **Andreas Mortensen** (Ecole Polytechnique Fédérale de Lausanne (EPFL)) Arda Cetin, Cécile Bernardi, Amael Cohades	*ORAL* **EFFECT OF SO2 ADDITIONS ON THE OXIDATION BEHAVIOUR OF NICKEL BASE SUPERALLOYS** **A. Jalowicka** (Institute for Energy and Climate Research, IEK-2 Forschungszentrum Jülich GmbH) W. Nowak, D.Naumenko, L. Singheiser, W.J. Quadakkers	*ORAL* **FROM LOW-TEMPERATURE PRECURSORS TO (U,CE)O2 SINTERED OXIDES : HOW TO CONTROL THE MICROSTRUCTURE ?** **Julien Martinez** (Icsm/lime) Nicolas Clavier, Fabienne Audubert, Nicolas Dacheux, Nicolas Vigier
16:40	*ORAL* **FUEL PRODUCTION BY REDUCTION OF CO2 USING CONCENTRATED SUNLIGHT – A MATERIAL STUDY** **Friedemann Call** (Institute of Solar Research, German Aerospace Center (DLR)) Martin Roeb, Christian Sattler, Martin Schmücker, Hélène Bru, Daniel Curulla-Ferre, Robert Pitz-Paal	*ORAL* **INVESTIGATION OF PLASTICITY AFTER HOT DEFORMATION OF THE MMCP WITH ALUMINUM MATRIX.** **Jerzy Myalski** (Silesian University Of Technology, Faculty Of Materials Engineering and Metallurgy) Jakub Wieczorek, Adam Plachta	EMPTY SLOT	*ORAL* **ROLE OF MICROSTRUCTURE ON FLUORITE-TYPE (AN,LN)O2 MIXED OXIDES DISSOLUTION** **Nicolas Dacheux** (Icsm - Umr 5257 Cea/cnrs/um2/enscm) Laurent Claparede, Denis Horlait, Adel Mesbah, Florent Tocino, Nicolas Clavier, Stéphanie Szenknect

THURSDAY 12 SEPTEMBER 2013 / PM1

Symposium	E4I	F1I	F1II	F2I
Room	Andalucía 2	Sevilla 1	Andalucía 5	Sevilla 3
Session Title	Fuel Cells and hydrogen storage I	Micro- and Nano-Engineered Materials for Medical Application V	Bioinspired and Functional Materials for Tissue Engineering I	Self-healing and Self-organization
Chairperson	Tom Zawodzinski		A. R. Boccaccini	Mischa Zelzer

15:00

ORAL

A COHESIVE ZONE MODEL TO SIMULATE FATIGUE CRACK PROPAGATION IN A MARTENSITIC STAINLESS STEEL AT HIGH HYDROGEN PRESSURE

Giovambattista Bilotta (Pprime Institute, ISAE-ENSMA)
Clara Moriconi, Gilbert Henaff, Mandana Arzaghi, Damien Halm, Tom Zawodzinski

ORAL

LIGHT-RESPONSIVE MESOPOROUS SILICA NANOCARRIERS FOR ANTITUMORAL THERAPY

Alejandro Baeza García (Univ. Complutense de Madrid)
Maria Vallet Regí, Montserrat Colilla Nieto, Marina Martínez Carmona

INVITED / KEYNOTE

HYDROGELS MADE OF RECOMBINANT SPIDER SILK PROTEINS FOR CELL CULTURE STUDIES

Kristin Schacht (Lehrstuhl Biomaterialien, Universität Bayreuth)
Aldo Leal-Egana, Carolin Mauerer, Jasmin Wickinghoff, Stefan Geimer, Thomas Scheibel, A. R. Boccaccini

INVITED / KEYNOTE

RECENT ADVANCES IN CHARACTERIZATION, QUANTIFICATION AND UNDERSTANDING THE SELF-HEALING MECHANISM OF SUPRAMOLECULAR RUBBERS AND METALLOPOLYMERS

Ranjita Bose (Technical University of Delft)
Stefan Bode, Martin Hager, Santiago Garcia, Ulrich Schubert, Sybrand van der Zwaag, Mischa Zelzer

15:20

ORAL

CHEMICAL STORAGE OF HYDROGEN IN IRON OXIDE WITH A REVERSIBLE REDOX REACTION MECHANISM

Jürgen Gluch (Institute for Materials Science, TU Dresden, 01062 Dresden, Germany)
Lars Röntzsch, Gunnar Walther, Thomas Weissgärber, Ehrenfried Zschech, Bernd Kieback

ORAL

ZWITTERIONIC MESOPOROUS BIOCERAMICS TO TREAT BONE IMPLANT INFECTIONS

Montserrat Colilla (Universidad Complutense de Madrid (UCM), Spain)
Marina Martínez-Carmona, María Vallet-Regí

15:40

EMPTY SLOT

ORAL

DUAL-TARGETED MESOPOROUS NANOCARRIERS FOR BONE METASTASIS TREATMENT

Montserrat Colilla (Universidad Complutense de Madrid, Spain)
Marina Martínez-Carmona, Alejandro Baeza, María Vallet-Regí

ORAL

COLLAGEN-BASED MICROSPHERES FOR VECTORIZATION AND DIFFERENTIATION OF MESENCHYMAL STEM CELLS: A POTENTIAL STRATEGY FOR CARTILAGE ENGINEERING

Emmanuel Belamie (Équipe «Matériaux Avancés pour la Catalyse et la Santé», ICGM UMR 5253 Montpellier, France)
Marc Mathieu, Silvine Benth, Sylvain Vigier, Christian Jorgensen, Danièle Noël

HIGHLIGHT

STRUCTURAL AND CHEMICAL MECHANISMS OF MOLECULAR SELF-REPAIR IN MUSSEL BYSSAL THREADS

Matthew Harrington (Max Planck Institute of Colloids and Interfaces, Dept. of Biomaterials)
Clemens Schmitt, Stefanie Krauss, Yael Politi, Hartmut Metzger, Peter Fratzl

16:00

ORAL

COMPACTS OF MG-NI ALLOY BASED HYDROGEN STORAGE MATERIALS: EVOLUTION THROUGHOUT CYCLIC HYDROGENATION

Carsten Pohlmann (Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM), Branch Lab Dresden)
Lars Röntzsch, Bernd Kieback

ORAL POSTER PRESENTATIONS

16:10 *ORAL POSTER PRESENTATIONS*

FIGHTING NOSOCOMIAL INFECTIONS WITH FUNCTIONAL LASER DESIGN OF METALLIC CONTACT SURFACES

Michael Hans (Saarland University, Chair of Functional Materials)
Juan Carlos Támara, Andreas Hegetschweiler, Frank Mücklich

ORAL

IN VITRO CHARACTERIZATION OF NANOLIPOSOMES/CHITOSAN BLEND SCAFFOLDS FOR TISSUE ENGINEERING

Hongyuan Zhang (Institut Jean Lamour)
Gabriel Dostert, Elmira Arab-Tehrany, Patrick Menu, Emilie Velot, Franck Cleymand

ORAL

MICRO-FABRICATION OF BIO-INSPIRED SURFACES FOR ADHESION IN DRY AND WET CONDITIONS

Gabriele Nanni (Istituto Italiano Di Tecnologia)
Despina Fragouli, Ilker Bayer, Elisa Mele, Athanassia Athanassiou

16:20

EMPTY SLOT

16:20 *ORAL POSTER PRESENTATIONS*

MULTI-SCALE CHARACTERIZATION OF PLLA/LECITHIN BLEND FILMS USED IN TISSUE ENGINEERING

Elmira Arab-Tehrany (Université de Lorraine-ENSAIA)
Marc Ponçot, Cyril Kahn, Michel Linder, Franck Cleymand

16:30 *ORAL POSTER PRESENTATIONS*

EVALUATION OF ANTIBACTERIAL ACTIVITY OF ZRO2 AND TIO2 NANOTUBULAR LAYERS INTENDED FOR BIOMEDICAL COATINGS

Agata Roguska (Faculty of Materials Science and Engineering, Warsaw University of Technology)
Anna Belcarz, Tomasz Piersiak, Marcin Pisarek, Grazyna Ginalska, Malgorzata Lewandowska, Krzysztof J. Kurzydlowski

HIGHLIGHT

EVALUATION OF CROSS-LINKED ALGINATE - GELATINE MATRICES FOR BIOFABRICATION

Aldo R. Boccaccini (University of Erlangen-Nuremberg)
R Detsch, T Zehnder, D Heusinger, S Rath, A Arkudas, B Sarker

ORAL

DESIGN OF NANOCAPSULES WITH A SUPRAMOLECULAR SHELL: IMPLEMENTING THE SYNTHESIS PROCESS AND HIGHLIGHTING THE FINE STRUCTURE OF THE SHELL

Johan Lejeune (IMP INSA Lyon)
Nathalie Sintes, Daniel Portinha, Frédéric Lortie

16:40

ORAL

THE CONCEPT OF NOVEL METAL-INTERCALATED-CARBON COMPOUNDS FOR HYDROGEN STORAGE: CHALLENGES AND PERSPECTIVES

Joanna K. Bendyna, (Eindhoven University of Technology)

EMPTY SLOT

ORAL

PLLA AND PCL POROUS SCAFFOLDS FOR TISSUE ENGINERING: MECHANICAL PROPERTIES

Esperanza Díaz, (Universidad Del País Vasco (UPV/EHU))
Itsaso Ibañez, Igor Puerto, Iban Sandonis

ORAL

THE ROLE OF SACRIFICIAL BONDS IN THE MECHANICAL BEHAVIOR OF BIOLOGICAL MATERIALS

Markus Hartmann (Institute of Physics, Montanuniversität Leoben)
Soran Nabavi

THURSDAY 12 SEPTEMBER 2013 / PM2

Symposium	A1I	A1III	A2III	A3I
Room	España 2	Andalucía 8	España 1	Giralda
Session Title	Control via spatial and temporal shaping	Optics related	Strain mediated magnetoelectricity: bulk composites	Carbon-containing Composites and Materials VI
Chairperson	Daniel Jaque	G. de Chavarri	J. Fontcuberta	Andrea Battisti
17:30	*INVITED / KEYNOTE* **FEMTOSECOND LASER MATERIAL PROCESSING WITH NONDIFFRACTING LIGHT** **Francois Courvoisier** (FEMTO-ST Institute, University of Franche-Comte) Amaury Mathis, Jinggui Zhang, Luc Froehly, Luca Furfaro, Maxime Jacquot, Remo Giust, Pierre-Ambroise Lacourt, John M. Dudley,	*INVITED / KEYNOTE* **POROUS METAL OXIDE LAYERS INTEGRATED IN PHOTONIC STRUCTURES AS BASE MATERIALS FOR OPTICAL SENSING** **Mauricio Calvo** (Instituto de Ciencia de Materiales de Sevilla) Nuria Hidalgo, Hernan Miguez	*ORAL* **MAGNETOELECTRIC PROPERTIES OF BISCO3-PBTIO3/NIFE2O4 CERAMIC COMPOSITES: MACROSCOPIC VERSUS MICROSCOPIC RESPONSES** **Harvey Amorín** (Instituto de Ciencia de Materiales de Madrid. CSIC, Cantoblanco, Spain) Rubén del Campo, Pablo Ramos, Inmaculada Martínez, Eladio Vila, Mickael Dollé, Yonny Romaguera, Javier Pérez de la Cruz, Alicia Castro, Miguel Algueró	*ORAL* **MICROSTRUCTURAL REFINEMENT AND MECHANICAL PROPERTIES IMPROVEMENT IN MWNT/NI BULK COMPOSITES** **Sebastian Suarez** (Universitaet Des Saarlandes - Functional Materials) Federico Lasserre, Frank Mücklich
17:50			*ORAL* **SYNTHESIS AND FUNCTIONAL CHARACTERIZATION OF MNFE2O4-PZTN MAGNETOELECTRIC COMPOSITES** **Cristina-Elena CIOMAGA** (Faculty of Physics, Al. I.Cuza University) Mirela Airimioaei, Carmen Galassi, Liliana Mitoseriu	*ORAL* **ALUMINIUM-CARBON NANOTUBES COMPOSITES CONTAINING METAL FIBRES: A TRADE-OFF BETWEEN STRENGTH AND TOUGHNESS** **Pavese Matteo** (Politecnico Di Torino) Silvia Marchisio, Fabio Alessandro Deorsola, Sara Biamino, Paolo Fino, Claudio Badini
18:10	*ORAL* **TIME-RESOLVED DYNAMICS OF ULTRAFAST BESSEL AND GAUSSIAN BEAM PROPAGATION AND ENERGY DEPOSITION IN TRANSPARENT MATERIALS** **Praveen Kumar Velpula** (Laboratoire Hubert Curien, Université Jean MONNET, Université de Lyon) Manoj Kumar Bhuyan, Cyril Mauclair, Jean-Philippe Colombier, Razvan Stoian	*ORAL* **SILK FIBROIN AS FUNCTIONAL MATERIAL FOR BIO-PHOTONIC APPLICATIONS** **Susanna Cavallini** (Istituto per lo Studio dei Materiali Nanostrutturati (ISMN - BO) CNR) Stefano Toffanin, Marco Natali, Sunghwam Kim, Valentina Benfenati, Roberto Zamboni, David Kaplan, Fiorenzo Omenetto, Michele Muccini	*ORAL* **FERROELECTRIC / FERROMAGNETIC CORE-SHELL NANOTUBES : TEMPLATE-ASSISTED SOL GEL SYNTHESIS.** **David Sallagoity** (ICMCB-CNRS UPR 9048) Romain Berthelot, Jérôme Majimel, Nicolas Penin, Catherine Elissalde, Mario Maglione, Vlad Antohe, Luc Piraux	*INVITED / KEYNOTE* **THE INFLUENCE OF CARBON NANOSTRUCTURES ON THE SINTERING OF ZRO2** **Miriam Miranda** (Centre for Advanced Structural Ceramics, Department of Materials, Imperial College London) Na Ni, Ben Milsom, Michael J. Reece, Eduardo Saiz
18:30	*ORAL* **FEMTOSECOND LASER MATERIALS PROCESSING USING A DIGITAL MICROMIRROR DEVICE** **Robert Eason** (University of Southampton) Ben Mills, Matthias Feinaugle, Collin Sones, James Grant-Jacob	*ORAL* **OPTOFLUIDIC SENSORS BASED ON NANOPOROUS BRAGG MICROCAVITIES** **Manuel Oliva-Ramirez** (Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla)) Lola Gonzalez-Garcia, Julián Parra. Barranco, Francisco Yubero, Angel Barranco, Agustín González-Elipe	*ORAL* **OPTIMIZATION OF THE MAGNETOELECTRIC RESPONSE OF POLY(VINYLIDENE FLUORIDE)/VITROVAC LAMINATES** **Jon Gutiérrez** (BCMaterials and Departamento de Electricidad y Electrónica, Universidad del País Vasco,Bilbao, España) Marco P. Silva , Silvia Reis, Sofia Lehmann, Andoni Lasheras, Pedro Martins, Senen Lanceros-Mendez, Jose Manuel Barandiarán	
18:50	*ORAL* **CONTROL OF ULTRAFAST LASER-INDUCED NANOPATTERNS IN BULK SILICA GLASS** **Razvan Stoian** (Laboratoire Hubert Curien, UMR 5516 CNRS, Université de Lyon, Université Jean Monnet, St. Etienne, France) Konstantin Mishchik, Cyril Mauclair, Jean-Philippe Colombier, Marian Zamfirescu, Guanghua Cheng	*ORAL* **INTEGRATION OF GOLD NANOPARTICLES IN PHOTONIC CRYSTALS: NEW BASE MATERIALS FOR OPTICAL SENSING BASED ON THE EFFECT OF THE INTERPLAY BETWEEN PLASMONIC AND OPTICAL CAVITY RESONANCES** **Alberto Jiménez-Solano** (Instituto de Ciencia de Materiales de Sevilla, CSIC - US) Carmen López-López, Olalla Sánchez-Sobrado, José Miguel Luque, Mauricio E. Calvo, Cristina Fernández-López, Ana Sánchez-Iglesias, Luis M. Liz-Marzán, Hernán Míguez	*ORAL* **PVDF-TREF POLYMER BASED THIN FILM COMPOSITES WITH VERY HIGH MAGNETOELECTRIC COEFFICIENT** **Thomas Strunskus** (Chair for Multicomponent Materials, University of Kiel) Amit Kulkarni, Andre Piorra, Robert Jahns, Iulian Teliban, Kerstin Meurisch, Hanna Lewitz, Eckhard Quandt, Reinhard Knöchel, Franz Faupel	*ORAL* **INFLUENCE OF HOT-MELT EXTRUSION AND DESORPTION OF PARACETAMOL ON THE POROUS STRUCTURE OF THE CARBON NANOTUBES AND ACTIVATED CARBONS** **Marek Winiewski** (N. Copernicus University, Department of Chemistry, Physicochemistry of Carbon Materials Research Group) Agnieszka Bielicka, Artur Terzyk, Piotr Gauden, Sylwester Furmaniak, Karolina Werengowska-Cieæwierz
19:10	*ORAL* **TRANSITION BETWEEN CHAOTIC AND ORDERED NANOGRATINGS – AN INDICATION OF CHAOS** **Nathaniel Groothoff** (Eindhoven University of Technology) Audrey Champion, Yves Bellouard, Peter Kazansky	*ORAL* **DEVELOPMENT OF A SLEEP APNEA SYNDROME SENSOR USING OPTICAL FIBERS** **Seiko Mitachi** (Tokyo University of Technology)	EMPTY SLOT	*ORAL* **GRAPHENE AND CARBON NANOTUBE (GNT)-REINFORCED ALUMINA NANOCOMPOSITES** **Bahareh Yazdani** (University of Exeter) Yanqiu Zhu

THURSDAY 12 SEPTEMBER 2013 / PM2

Symposium	A4I	A4IV	B4I	C2I
Room	Andalucía 1	Andalucía 6	Cartuja	Andalucía 3
Session Title	Nanowires. Optical and electrical properties	Optical Materials ans Photocatalysts	Reactivity, sorption and separation	Wetting III
Chairperson	C. Díaz-Guerra		Monica Kosa	F. Hodaj
17:30	*INVITED / KEYNOTE* **SELF ASSEMBLED II-VI NANOWIRES AND NANORIBBONS FOR LASING AND SENSING APPLICATIONS.** **Juan Antonio Zapien** (City University of Hong Kong)	*INVITED / KEYNOTE* **IMPACT OF CRYSTAL STRUCTURE, SURFACE CHEMISTRY AND GRAIN SIZE ON RADIATIVE RECOMBINATION IN OXIDE MATRICES DOPED WITH RARE-EARTH IONS** **Sergey Yatsunenko** (Institute of Physics Polish Academy of Sciences, Warsaw, Poland) Jaroslaw Kaszewski, Urszual Narkiewicz, Marek Godlewski	*ORAL* **COMBINED X-RAY DIFFRACTION AND ABSORPTION STUDY ON A SERIES OF ISOSTRUCTURAL METAL-ORGANIC FRAMEWORKS UPON SOLVENT REMOVAL** **Diego Gianolio** (Diamond Light Source Ltd., Harwell Science & Innovation Campus, UK) Jenny G. Vitillo, Bartolomeo Civalleri, Silvia Bordiga, Karl Petter Lillerud, Unni Olsbye, Loredana Valenzano, Carlo Lamberti	*ORAL* **PREPARATION OF CARBON FIBER REINFORCED ALUMINUM MATRIX COMPOSITE UNDER K2TIF6 CONTAINING MOLTEN SALT MIXTURES** **Peter Baumli** (University of Miskolc, Dept. of Nanotechnology/Bay Zoltan Applied Research Nonprofit Ltd) Koppany Levente Juhasz, Andrea Simon, Zoltan Gacsi, Alexander Karantzalis, Angeliki Lekatou, George Kaptay
17:50			*ORAL* **PD/AU@ZIF: CATALYST FOR LIQUID PHASE AEROBIC ALCOHOL OXIDATION** **Christoph Rösler** (Ruhr-University Bochum, Chair of Inorganic Chemistry II) Daniel Esken, Christian Wiktor, Roland Fischer, Hirokazu Kobayashi, Hiroshi Kitagawa	*ORAL* **WO3/TIO2 HETEROSTRUCTURES TAILORED BY ORIENTED ATTACHMENT MECHANISM: INSIGHTS FROM THEIR PHOTOCATALYTIC PROPERTIES** **Isabela Castro** (Universidade Federal de São Carlos) Waldir Avansi, Caue Ribeiro
18:10	*ORAL* **SURFACE TREATMENTS OF ZNO NANOWIRES AND NANORODS – EFFECT ON THE OPTICAL PROPERTIES** **Aleksandra B. Djurisic** (University of Hong Kong) Xinyi Chen, Yu Hang Leung, Fangzhou Liu, Mu Yao Guo, Alan Man Ching Ng, Wai Kin Chan	*ORAL* **STRUCTURAL AND PHOTOPHYSICAL CHARACTERIZATION OF NEW HYBRID NANOSTRUCTURED BIOCOMPOSITES** **Tamara Posati** (Laboratory MIST E-R) Stefano Toffanin, Susanna Cavallini, Valentina Benfenati, Anna Sagnella, Wouter Koopman, Marco Natali, Morena Nocchetti, Giampiero Ruani, Roberto Zamboni, Michele Muccini	*ORAL* **ENHANCED CO2 ADSORPTION CAPACITY OF AMINE-FUNCTIONALIZED MIL-100 METAL-ORGANIC FRAMEWORKS** **Carlos Palomino Cabello** (University of Balearic Islands) Carlos Otero Areán, Gemma Turnes Palomino	*ORAL* **NANOGRAINED ZNO: GRAIN BOUNDARIES WETTED BY THE AMORPHOUS FERROMAGNETIC LAYERS** **Boris Straumal** (Max-Planck-Institute for Intelligent Systems) Andrei Mazilkin, Svetlana Protasova, Petr Straumal, Eberhard Goering, Gisela Schütz, Brigitte Baretzky
18:30	*ORAL* **ZINC OXIDE NANOSTRUCTURES GROWN ON METAL SUBSTRATES AS LI-ION BATTERY ANODE** **Marco Laurenti** (Istituto Italiano Di Tecnologia, Centre for Space Human Robotics) Nadia Garino, Samuele Porro, Marco Fontana, Claudio Gerbaldi,	*ORAL* **SYNTHESIS OF ZINC OXIDE NANOPOWDERS WITH TUNABLE SIZE, SURFACE HYDROXYLATION AND SURFACE MODIFICATION** **Christine Bressy** (MAPIEM-Université de Toulon) Van Giang Ngo, Sylvie Villain, Fabio Ziarelli, Christine Leroux, André Margaillan	*HIGHLIGHT* **SORPTION PROPERTIES OF SC-BASED MOFS AT GPA PRESSURES** **Stephen Moggach** (The University of Edinburgh) Alexander Graham, Scott McKellar, John Mowat, Paul Wright, Jorge Sotelo	*ORAL* **CONTRIBUTION OF TILT BOUNDARIES TO THE TOTAL GRAIN BOUNDARY ENERGY OF THE POLYCRYSTAL** **Alexander Straumal** (Ruhr-Universität Bochum) P Protsenko, Alekey Rodin, Yuriy Kucheev, A Gusak, V Murashov
18:50	*ORAL* **STUDY OF STRUCTURAL AND LIGHT-EMISSION PROPERTIES OF MONOCRYSTALLINE POROUS ZNO NANOBELTS FROM HYBRID ORGANIC-INORGANIC PRECURSORS.** **Filippo Fabbri** (IMEM-CNR Institute, Parma (Italy)) Lucia Nasi, Davide Calestani, Tullo Besagni, Patrizia Ferro, Paolo Fedeli, Francesca Licci, Roberto Mosca, Ginacarlo Salviati	*ORAL* **INTERFACED ANATASE-RUTILE NANOCOMPOSITES BY THERMOHYDROLYSIS.** **Alexandre Pichavant** (ENSTA ParisTech, Unité Chimie et Procédés) Elise Provost, Marie-Hélène Berger, Walter Furst, Jean-Francois Hochepied	*ORAL* **STERIC CONTROL AT THE ACTIVE SITE IN ORGANOCATALYSIS BY PHOSPHINE METAL-ORGANIC FRAMEWORKS** **Xiaoying Xu** (ETH Zürich) Stephan M. Rummelt, Flavien L. Morel, Michael Wörle, Marco Ranocchiari, Jeroen A. van Bokhoven	*INVITED / KEYNOTE* **MEASURING WETTING AT THE NANOSCALE** **Kislon Voïtchovsky** (The Supramolecular Nano-Materials and Interfaces Laboratory – SuNMIL, Ecole Polytechnique Fédérale de Lausanne – EPFL, Lausanne)
19:10	*ORAL* **PIEZOELECTRIC BEHAVIOR OF ULTRALONG ZNO NANOWIRE ARRAYS SYNTHESIZED BY A TEMPLATE- ASSISTED APPROACH** **Carminna Ottone** (Center for Space Human Robotics, Istituto Italiano Di Tecnologia (IIT)) Vivian Farías, Marco Fontana, Angelica Chiodoni, Stefano Stassi, Giancarlo Canavese, Valentina Cauda	*ORAL* **BIOMIMETIC SYNTHESIS OF METAL-TIO2 NANOCOMPOSITES FOR PHOTODEGRADATION OF ORGANIC POLLUTANTS** **Peter Schaaf** (TU Ilmenau) Dong Wang, Yong Yan	*ORAL* **FIRST-PRINCIPLES STUDY OF METAL-ORGANIC FRAMEWORK MATERIALS FOR SELECTIVE MOLECULAR SEPARATION: THE ROLE OF HOST-GUEST INTERACTION** **Rodion Belosludov** (Institute for Materials Research, Tohoku University) Hiroshi Mizuseki, Yoshiyuki Kawazoe	

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Symposium	C2III	C3IV	D3I	E1II	E2I
Room	España 3	Andalucía 7	España 5	Sevilla 2	España 4
Session Title	Joining Technologies IV	Additive Manufacturing III	Materials Discovery and High-Throughput Methods: Modelling III	Materials for thermochemical energy storage	Lightweight Materials and Structural Solutions for Transport Applicaations IV
Chairperson	George Kaptay	N. Travitzky	James Rondinelli	Martin SchMücker	Lehmhus D.
17:30	*HIGHLIGHT* **X-RAY IMAGING AND COMPOSITION MAPPING OF COATED/ IMPREGNATED COMPOSITE MATERIALS** **Ion Tiseanu** (National Institute for Lasers, Plasma and Radiation Physics) Konstantina Mergia, Teddy Craciunescu, Crisitian Ruset, Cosmin Dobrea, Adrian Sima, Mihail Lungu	*ORAL* **ON THE ROLE OF OUT-OF-EQUILIBRIUM MICROSTRUCTURES IN TI-6AL-4V AND IN STAINLESS STEEL 316L PROCESSED BY SELECTIVE LASER MELTING IN DETERMINING THEIR MECHANICAL PROPERTIES** **Anne Mertens** (Université de Liège, MMS Unit) Sylvie Reginster, Hakan Paydas, Thierry Dormal, Olivier Lemaire, Jacqueline Lecomte-Beckers	*ORAL* **AB INITIO POINT DEFECTS FROM 0K UP TO THE MELTING POINT: DISCOVERY OF LARGE NON-ARRHENIUS EFFECTS** **Albert Glensk** (Max-Planck-Institut Für Eisenforschung) Blazej Grabowski, Tilmann Hickel, Joerg Neugebauer	*ORAL* **ADVANCED RETICULATED CERAMICS IN CONCENTRATED SOLAR POWER APPLICATIONS: FROM VOLUMETRIC RECEIVERS AND MULTIFUNCTIONAL SOLAR FUELS PRODUCTION REACTORS TO THERMOCHEMICAL SOLAR HEAT STORAGE** **Christos Agrafiotis** (Deutsches Zentrum Für Luft- Und Raumfahrt (DLR)) Martin Roeb, Christian Sattler	*INVITED / KEYNOTE* **COMPOSITES MODIFIED WITH TERFENOL-D PARTICLES FOR STRESS DETECTION** **Peter Wierach** (DLR) Markus Kubicka, Thorsten Mahrholz, Alexandra Kühn, Michael Sinapius
17:50	*ORAL* **DETERMINATION OF THE COLD CRACK SUSCEPTIBILITY OF HIGH STRENGTH STEELS** **Ralf Ossenbrink** (Brandenburg University of Technology Cottbus, Department of Joining and Welding Technology) Ossama Dreibati, Vesselin Michailov	*ORAL* **THREE DIMENSIONAL PRINTING OF SISIC LATTICE TRUSS STRUCTURES** **Lorenz Schlier**(University of Erlangen-Nuremberg, Glass and Ceramics) Zongweng Fu, Nahum Travitzky, Peter Greil	*ORAL* **DFT INVESTIGATION OF ALLOYING AND TEMPERATURE EFFECTS IN SCREW DISLOCATION CORES** **Lorenz Romaner** (Materials Center Leoben, Austria) Hong Li, Claudia Draxl, Reinhard Pippan	*ORAL* **MODIFICATION OF FINE-GRAINED POWDER TO FACILITATE A MOVING REACTION BED FOR THERMOCHEMICAL ENERGY STORAGE** **Christian Rosskopf** (German Aerospace Center (DLR)) Marc Linder, Antje Wörner	
18:10	*ORAL* **BRAZEABILITY OF ALUMINIUM 6061 MATRIX COMPOSITE REINFORCED WITH CARBON NANOTUBES WITH IMPROVED THERMAL STABILITY** **Joanna Lipecka** (Warsaw University of Technology, Faculty of Materials Science and Engineering) Jolanta Janczak-Rusch, Marc Leparoux, Malgorzata Lewandowska	*ORAL* **SELF-ENCAPSULATED HOLLOW MICROSTRUCTURE FORMED BY ELECTRIC-FIELD-ASSITED CAPILLARITY** **Marc Desmulliez** (Heriot-Watt University) Weixing Yu	EMPTY SLOT	*ORAL* **PHASE CHANGE MATERIALS BASED ON MOLTEN SALTS AND NANOPARTICLES FOR THERMAL ENERGY STORAGE.** **Manila Chieruzzi** (University of Perugia) Gian Filippo Cerritelli, Adio Miliozzi, José Maria Kenny	*ORAL* **CONDITION MONITORING OF ALUMINIUM CASTINGS THROUGH EMBEDDED PIEZORESISTIVE THIN FILM SENSORS** **Christoph Pille** (Fraunhofer Institute for Manufacturing and Advanced Materials (IFAM)) Hermann Pleteit, Matthias Busse
18:30	*ORAL* **TENSILE SHEAR STRENGTH OF IN718 WELDED JOINT** **Ho-Sung Lee** (Korea Aerospace Research Institute) Woo Hyun Cho, Jong-Hoon Yoon, Joon-Tae Yoo, Ji-Ung Choi	EMPTY SLOT	*ORAL* **KAPPA-CARBIDE PRECIPITATES IN AUSTENITIC STEELS: AB INITIO STUDY OF STRUCTURAL, MAGNETIC AND INTERFACE PROPERTIES** **Poulumi Dey** (Max-Planck-Institut Für Eisenforschung GmbH) Roman Nazarov, Martin Friak, Tilmann Hickel, Jörg Neugebauer	*ORAL* **TRANSITION METAL OXIDES FOR HIGH TEMPERATURE THERMOCHEMICAL ENERGY STORAGE** **Tina Block** (DLR (German Aerospace Centre), Institute of Materials Research) Martin Schmücker	*ORAL* **COMPONENT STATUS-DRIVEN MAINTENANCE BY GENTELLIGENT COMPONENTS** **Maximilian Winkens** (Institute of Production Systems and Logistics, Leibniz University of Hanover) Jan Busch, Peter Nyhuis
18:50	*ORAL* **EFFECT OF INTERMETALLIC PHASES ON MECHANICAL PROPERTIES OF AL-CU INTERFACES** **Alice Lassnig** (Physics of Nanostructured Materials, University of Vienna) Golta Khatibi, Michael Zehetbauer	*ORAL* **LOW EXPANSION INVAR ALLOY FOR I-PIM CARBON AND OXYGEN CONTENT CONTROLLING BY SINTERING ATMOSPHERE** **Javier Hidalgo** (Universidad Carlos III de Madrid) Antonia Jiménez-Morales, Thierry Barriere, Jean Claud Gelin, José Manuel Torralba	*ORAL* **LOCAL AND GLOBAL ORDERING IN MANGANESE-RICH STEELS** **Jörg Von Appen** (Institute of Inorganic Chemistry, RWTH Aachen University) Sarah Lintzen, Richard Dronskowski	*ORAL* **THERMOCHEMICAL HEAT STORAGE BASED ON THE REVERSIBLE REACTION OF MN2O3/MN3O4** **Michael Wokon** (German Aerospace Center (DLR)) Tina Block, Thomas Bauer, Marc Linder, Martin Schmücker, Antje Wörner	*ORAL* **AUTONOMOUS WIRELESS APPLICATIONS POWERED BY THERMOELECTRIC ENERGY HARVESTING IN AIRCRAFT** **Thomas Becker** (1EADS Innovation Works, Sensors, Electronics & Systems Integration, Munich, Germany) Alexandros Elefsiniotis , Karthik Thangaraj, Patryk Kowalewski, Carol Featherston, Jonathan Lees, Rhys Pullin, Ulrich Schmid
19:10	*ORAL* **SOLDERABILITY AND WETTABILITY OF LEAD-FREE SOLDERS** **József Hlinka** (Budapest University of Technology and Economics, Faculty of Transportation Engineering, Department of Automobiles and Vehicle Manufacturing) Zoltán Weltsch	EMPTY SLOT	*ORAL* **TOPOLOGICALLY CLOSE-PACKED PHASES IN SUPERALLOYS – PREDICTIONS FROM STRUCTURE MAPS AND HIGH-THROUGHOUT AB-INITIO CALCULATIONS** **Thomas Hammerschmidt** (ICAMS, Ruhr-Universität Bochum) Jörg Kossmann, Ralf Drautz	*ORAL* **MANGANESE OXIDE BASED THERMOCHEMICAL HEAT STORAGE FOR CSP: INFLUENCE OF SYNTHESIS PARAMETERS ON THE MATERIALS CYCLABILITY** **Alfonso J. Carrillo** (IMDEA Energy Institute, Thermochemical Processes Unit) Sandra Alvarez, David P. Serrano, Manuel Romero, Jose Gonzalez-Aguilar, Patricia Pizarro, Juan M. Coronado	*ORAL* **SELF-HEALING MULTIFUNCTIONAL COMPOSITES** **Ugo Lafont** (Material Innovation Institute) Henk van Zeijl, Sybrand van der Zwaag

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SYMPOSIUM: F1I / ROOM: SEVILLA 1

16:50	17:00	17:10	17:30
ORAL POSTER, **STUDY OF THE THERMAL BEHAVIOR AND THE BIOCOMPATIBILITY OF POLY(3-HYDROXY BUTYRATE) AND ITS NANOCOMPOSITES WITH ORGANO-MODIFIED MONTMORILLONITE** **Elpiniki Panayotidou** (Department of Industrial Design Engineering, TEI of Western Macedonia, 50100 Kozani, Greece) Ioannis Zuburtikudis, Apostolos Baklavaridis, Anthi Kroustalli, Despoina Deligianni, Dimitris Achilias	*ORAL POSTER*, **PROCESSING AND CHARACTERIZATION OF NOVEL MELT INJECTED PLDA/MG COMPOSITES** **Rosario Benavente** (Instituto de Ciencia y Tecnología de Polímeros (ICTP-CSIC), Spain) Sandra C. Cifuentes, Tim Osswald, Felix A. López, José L. González-Carrasco	*ORAL POSTER*, **PEG-BASED NANOCOMPOSITES FOR DRUG DELIVERY APPLICATION: INTERCALATION PROCEDURE AND THERMAL CHARACTERIZATION** **Paola Gallo Stampino** (Politecnico Di Milano Dip. Di Chimica Materiali E Ing Chimica) Elisabetta Finocchio, Cinzia Cristiani, Giovanni Dotelli, Luca Zampori, Federico Zorzi	*ORAL POSTER*, **EVALUATION OF THE ANTIBACTERIAL AND BIOCOMPATIBILITY PROPERTIES OF THE POLYPROPYLENE SURGICAL MESHES COVERED BY SILVER AND/OR DIAMOND-LIKE CARBON IN RATS** **Tussi Junior Roberto** (Departamento de Cirurgia, Universidade Federal de São Paulo) Elisa Mantovani Cazalini, José Elias Matieli, Marcos Massi, Ana Maria Alvim Liberatore, Priscila Larcher Longo, Argemiro Soares da Silva Sobrinho, Choyu Otani, Melissa Yoshida Masuda, Ivan Hong Jun Koh

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Symposium	E3I	E3IV	E4I
Room	Alamillo	Macarena	Andalucía 2
Session Title	Materials Protective Coatings for High Temperature Applications	Materials for Nuclear Applications III	Fuel Cells and hydrogen storage II
Chairperson	Christoph Leyens	Dario Manara	Tom Zawodzinski
17:30	*ORAL* **EFFECT OF MCRALY-BONDCOAT PROCESSING ON THE LIFETIME OF APS-TBC SYSTEMS** **Dmitry Naumenko** (Forschungszentrum Jülich GmbH) Wojciech Nowak, Francesco Mor, Daniel Mack, Robert Vassen, Lorenz Singheiser, Willem J. Quadakkers	*ORAL* **MECHANICAL PROPERTIES AND DISSOLUTION BEHAVIOUR OF MONAZITE- AND PYROCHLORE-TYPE CERAMICS FOR THE IMMOBILIZATION OF MINOR ACTINIDES** **Stefan Neumeier** (Forschungszentrum Jülich GmbH) Sarah Finkeldei, Yulia Arinicheva, Andrey Bukaemskiy, Felix Brandt, Giuseppe Modolo, Dirk Bosbach	*HIGHLIGHT* **HYDROGEN STORAGE TANKS BASED ON COMPLEX HYDRIDES: DESIGN, TESTING AND LATEST DEVELOPMENTS** **Jose M. Bellosta Von Colbe** (Helmholtz-Zentrum Geesthacht, Centre for Materials and Coastal Research) Julian Jepsen, Stefan Börries, Oliver Metz, Nina Busch, Tobias Werner, Thomas Bücherl, P. Klaus Pranzas, Thomas Klassen, Martin Dornheim

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Symposium	E3I	E3IV	E4I
Room	Alamillo	Macarena	Andalucía 2
Session Title	Materials Protective Coatings for High Temperature Applications	Materials for Nuclear Applications III	Lithium ion batteries I
Chairperson	Christoph Leyens	Dario Manara	Orlando Rios
17:50	*ORAL* **HIGH TEMPERATURE CYCLIC OXIDATION OF POROUS COATINGS ONTO NICKEL BASED SUPERALLOYS AND THEIR POST-OXIDATION BEHAVIOR AT AMBIENT TEMPERATURE IN WATER CONTAINING ENVIRONMENTS** **Maxime Brossard** (University of La Rochelle) Baptiste Bouchaud, Gilles Bonnet, Fernando Pedraza	*ORAL* **EVOLUTION OF MESOPOROUS SILICA IN WATER USING IN-SITU SMALL ANGLE X-RAY SCATTERING** **Julien Cambedouzou** (ICSM UMR 5257 CEA/CNRS/UM2/ENSCM) Benoît Gouze, Sandra Maynadié, Diane Rébiscoul	*ORAL* **MESOSCOPIC MODELING OF 3-D ELECTRODE ARCHITECTURES FOR LI-ION BATTERIES** **Partha Mukherjee** (Texas A&M University) Sreekanth Pannala, Michael Martin, Jeff Dietiker, Srikanth Allu, John Turner, Devesh Ranjan
18:10	*ORAL* **MICROSTRUCTURE AND OXIDE FORMATION OF MCRALY COATINGS ON STEEL SUBSTRATES DEPOSITED BY LASER CLADDING** **Maria Jose Tobar Vidal** (Universidad de La Coruña) Jose Manuel Amado, Armando Yáñez, Juan Candel, Vicente Amigo	*ORAL* **MODEL MATERIALS FOR IRRADIATED FUELS: STUDY OF LOCAL MECHANICAL BEHAVIOR USING NANOINDENTATION AND MICROSTRUCTURAL ANALYSIS** **Nathalie Payraudeau - Le Roux** (Laboratoire MATEIS, INSA de Lyon) Sylvain Meille, Cyril Langlois, Isabelle Aubrun, Dominique Pêcheur, Jean-Marie Gatt	*ORAL* **COUPLED MULTI-PHYSICS MODEL FOR LI-ION BATTERY CELLS DURING IMPACT** **Srdjan Simunovic** (Oak Ridge National Laboratory) Srikanth Allu, Sreekanth Pannala, Sergiy Kalnaus, Wael Elwasif, John Turner
18:30	*ORAL* **OXIDATION OF YTTRIUM-DOPED CR2ALC-MAX-PHASE COATINGS IN THE TEMPERATURE RANGE BETWEEN 700-1200°C** **Olena Berger** (Technische Universität Dresden, Institute of Materials Science) Christoph Leyens, Stefan Heinze, Moritz to Baben, Jochen Schneider	*ORAL* **IN SITU TEM STUDIES OF HELIUM BUBBLE EVOLUTION IN 4H-SIC UNDER AU IRRADIATION** **Marie-France Beaufort** (Institut Pprime - CNRS - Université de Poitiers) Maxime Vallet, Erwan Oliviero, Christopher J Pawley, Steve E. Donnelly, Jean-françois Barbot	*ORAL* **DETERMINATION OF THE HEAT GENERATION AND DISSIPATION OF 40 AH LITHIUM ION POUCH CELLS BY ELECTROCHEMICAL-CALORIMETRIC STUDIES** **Carlos Ziebert** (Karlsruhe Institute of Technology, Institute for Applied Materials – Applied Materials Physics) Hans J. Seifert
18:50	*ORAL* **PROTECTIVE COATING FOR ADVANCED TITANIUM ALLOYS** **Elzbieta Godlewska** (AGH University of Science and Technology) Marzena Mitoraj, Krzysztof Mars, Katarzyna Leszczynska	*ORAL* **STUDY OF MICROSTRUCTURAL EVOLUTION UNDER IRRADIATION OF THE 6061-T6 ALUMINUM ALLOY** **Camille Flament** (CEA Saclay, DEN/DMN/SRMA) Alexis Deschamps, Joël Ribis, Jérôme Garnier,	*ORAL* **STUDY OF FUNDAMENTAL ASPECTS OF WETTING AND IMPREGNATION PHENOMENA: APPLICATION FOR LI-ION BATTERIES** **Elodie Lacassagne** (Ingénierie Des Matériaux Polymères IMP@UCBL1) Samer Al Akhrass, Philippe Cassagnau, Céline Lavaud
19:10	EMPTY SLOT	*HIGHLIGHT* **SANS STUDY OF HIGHLY IRRADIATED RPV STEELS** **Mikhail Sokolov** (Oak Ridge National Laboratory) Randy Nanstad, Michael Miller, Ken Littrell	*ORAL* **COMPUTATIONAL FRAMEWORK FOR MODELING THERMAL RESPONSE OF LITHIUM-ION BATTERIES UNDER ABUSIVE CONDITIONS** **Srikanth Allu** (Oak Ridge National Laboratory) Sreekanth Pannala, Srdjan Simunovic, Sergiy Kalnaus, Wael Elwasif, John Turner

THURSDAY 12 SEPTEMBER 2013 / PM2

Symposium	F1II	F2I	F3I
Room	Andalucía 5	Sevilla 3	La Pinta
Session Title	Bioinspired and Functional Materials for Tissue Engineering II	Measurement of biological / bioinspired materials	Silicon photonics biosensors
Chairperson	J. Mano	Ingrid Weiss	Laura M. Lechuga
17:30	*HIGHLIGHT* **BIOINSPIRED SUPERHYDROPHOBIC PATTERNED CHIPS FOR THE COMBINATORIAL BIOMATERIALS DESIGN IN TISSUE ENGINEERING** **João F. Mano** (ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal) Mariana B. Oliveira	*INVITED / KEYNOTE* **MULTI-METHOD IMAGING AND QUANTIFICATION OF MATERIAL PROPERTIES DURING BONE MINERALIZATION AND HEALING** **Wolfgang Wagermaier** (Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Potsdam, Germany) Michael Kerschnitzki, Rebecca Hoerth, Philip Kollmannsberger, Daniel Baum, Hans-Christian Hege, Bettina Willie, Georg N. Duda, Richard Weinkamer, Peter Fratzl	*HIGHLIGHT* **INTEGRATED OR SELF-PROPELLED (BIO)SENSORS: LAB-IN-A-TUBE OR NANOMOTORS** **Samuel Sánchez** (Institute for Integrative Nanosciences, IFW Dresden)
17:50	**EMPTY SLOT**		*ORAL* **POROUS SILICON FOR THE CONSTRUCTION OF BIOSENSORS AND FOR BIOMEDICAL APPLICATIONS** **Frederique Cunin** (Icgm - Umr5253)
18:10	*ORAL* **APATITE COATINGS ON MCM-41 NANOSPHERES** **Antonio J. Salinas** (Universidad Complutense de Madrid and CIBER-BBN) Okan Mersinlioglu, Blanca González, María Vallet-Regí	*ORAL* **SPIDER SILK PROTEINS STUDIED BY SAS AND CD** **Imke Greving** (Helmholtz Gesellschaft Geesthacht, Germany) Ann Terry, Boulet-Audet Maxime, Grillo Isabelle, Vollrath Fritz, Dicko Cedric	*HIGHLIGHT* **HIGH-PLEX AUTO-ANTIBODY DIAGNOSTICS USING SILICON PHOTONICS RING RESONATORS** **Cary Gunn** (Genalyte Inc.)
18:30	*ORAL* **MIMICKING TRABECULAR BONE TISSUE WITH HYDROXYAPATITE/GELATIN ROBOCASTED SCAFFOLDS** **Yassine Maazouz** (Biomaterials, Biomechanics and Tissue Engineering Group) Edgar Montufar, Maria-Pau Ginebra	*ORAL* **SEMI-QUANTITATIVE CONTACT-FREE ASSESSMENT OF THE BIOMECHANICS OF TISSUE-LIKE MULTICELLULAR AGGREGATES** **Andreas Undisz** (Friedrich Schiller University) Markus Rettenmayr	*ORAL* **CHARACTERIZATION OF THE PERFORMANCE OF OPTICAL LABEL-FREE BIOSENSORS.** **Rafael Casquel** (ETSII-Universidad Politécnica de Madrid) Álvaro Lavín, Francisco Javier Sanza, María Fé Laguna, Ana López, Miguel Holgado
18:50	*ORAL* **BIOACTIVE GLASS COATINGS DEPOSITED VIA HVSFS FOR ORTHOPAEDIC APPLICATIONS** **Valeria Cannillo** (University of Modena and Reggio Emilia) D. Bellucci, G. Bolelli, R. Gadow, A. Killinger, L. Lusvarghi, P. Mueller, A. Sola, N. Stiegler	*ORAL* **MESOPOROUS SILICA STRUCTURE IN THE CENTRAL FILAMENT OF AN ANCHOR SPICULE OF THE MARINE SPONGE MONORHAPHIS CHUNI** **Igor Zlotnikov** (Department of Biomaterials, Max Planck Institute of Colloids and Interfaces, Potsdam, Germany) Peter Werner, Horst Blumtritt, Yannicke Dauphin, Emil Zolotoyabko, Peter Fratzl	*HIGHLIGHT* **RECENT ADVANCES IN SILICON WIRE BIOSENSOR ARRAYS** **Pavel Cheben** (National Research Council of Canada)
19:10	*ORAL* **3D MODELING OF BIOMIMETIC AL/AL2O3 NANOPOROUS COATINGS FOR BONE IMPLANT APPLICATIONS** **Marina Martinez Mirón** (Leibniz Institut for New Materials)	*ORAL* **ADVANCES IN THE CHARACTERIZATION OF BIOLOGICAL MATERIALS WITH SINGLE, MULTICHANNEL AND MULTI-DETECTOR EDS SYSTEMS** **Jana Berlin** (Bruker Nano GmbH) Anton T. Kearsley, Gavin R. Broad, Tobias Salge, Ralf Terborg, Birgit Hansen, Andi Käppel, Meiken Falke	*19:10 ORAL* **MULTIPLEXED MACH-ZEHNDER SILICON INTERFEROMETERS FOR HIGHLY SENSITIVE BIOSENSING** **Daphné Duval** (CIN2 (CSIC and CIBER BBN)) Daniel Grajales, Stefania Dante, Carlos Domínguez, Laura M. Lechuga *19:30 ORAL* **USING DUAL POLARIZATION SILICON RING RESONATORS TO MONITOR PH-INDUCED CONFORMATIONAL CHANGES IN BSA MOLECULES** **Peter Bienstman** (UGent) Tom Claes, Jan-Willem Hoste

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FRIDAY 13 SEPTEMBER 2013 / AM2

Symposium	A4IV	B4I	C2I	C2III
Room	Andalucía 6	Cartuja	Andalucía 3	España 3
Session Title	SHAPE AND SURFACE	Innovative applications and future directions	Wetting IV	Joining Technologies V
Chairperson		Guillaume Maurin	A. Passerone	Natalie Sobczak
11:00	*INVITED / KEYNOTE* **SURFACE PROPERTIES AND NANOPARTICLES MORPHOLOGY: THE KEYS TO UNDERSTAND THE REACTIVITY OF SEMICONDUCTOR OXIDES** **Lorenzo Mino** (University Of Turin) Jakubjan Biedrzycki, Giuseppe Spoto, Silvia Bordiga, Adriano Zecchina	*INVITED / KEYNOTE* **APPLICATION OF MOFS FROM AN INDUSTRIAL POINT OF VIEW** **Stefan A. Marx** (BASF SE) Lena Arnold, Manuela Gaab, Stefan Maurer, Raghu Gummaraju, Michael SantaMaria, Keely Wilson, Christoph Garbotz, Joseph Lynch, Ulrich Mueller	*HIGHLIGHT* **MODELING THE INITIAL RAPID WETTING OF CU IN LIQUID PHASE SINTERING** **Abdul Malik Tahir** (Royal Institute Of Technology, KTH) Gustav Amberg, Minh Do-Quang ,	*HIGHLIGHT* **JOINING TIAL INTERMETALLICS AND METALLIC PARTS** **Ji Zhang** (China Iron and Steel Research Institute Group)
11:20			*ORAL* **CAPILLARY SUSPENSIONS IN MATERIAL PROCESSING: WETTING PHENOMENA AND STRUCTURE FORMATION ANALYSIS** **Jens Dittmann** (Karlsruhe Institute Of Technology (KIT)) Norbert Willenbacher	*ORAL* **ON THE JOINING OF STEEL AND ALUMINIUM BY MEANS OF AN INNOVATIVE PROCESS** **Camille Van Der Rest** (UCL/iMMC/IMAP) Stéphane Crucifix, Aude Simar, Pascal J. Jacques
11:40	*ORAL* **CUO ON CEO2 (001), A MORE SELECTIVE CATALYST FOR CO PREFERENTIAL OXIDATION: FUNDAMENTAL DFT MODELING AND EXPERIMENTAL DATA** **Manuel Monte** (Instituto de Catálisis y Petroleoquímica, CSIC) Arturo Martínez-Arias, José C. Conesa	*ORAL* **HYDROPHOBIC MOFS BASED ON NI8-HYDROXO CLUSTERS AND PYRAZOLATE LIGANDS FOR CAPTURE OF CHEMICAL WARFARE AGENTS ANALOGUES** **Carmen Montoro Cano** (Dep. Inorganic Chemistry, University Of Granada) Natalia Muñoz, Elsa Quartapelle, Elena López-Maya, J. Enrique Oltra, Valentina Colombo, Irena Sonkovska, Stefan Kaskel, Elisa Barea, Jorge A. R. Navarro	*ORAL* **APPLICATION OF EBSD FOR THE INVESTIGATION OF REFRACTORY CORROSION MECHANISMS** **Harry Berek** (TU Bergakademie Freiberg) Stefan Schafföner, Christos Aneziris	*ORAL* **DISSIMILAR METAL JOINING OF STAINLESS STEEL AND TITANIUM USING COPPER AS TRANSITION METAL.** **Goncalo Pardal** (Welding Engineering and Laser Processing Centre - Cranfield University) Supriyo Ganguly, Stewart Williams
12:00	*ORAL* **FROM GAMMA-ALOOH NANOPARTICLES SIZE AND SHAPE CONTROL TO GAMMA-ALUMINA PROPERTIES OPTIMIZATION** **Fouad Karouia** (Ifpen) Malika Boualleg, Mathieu Digne, Pierre Alphonse	*ORAL* **EFFECTS OF OPEN METAL SITES PRESENT IN COORDINATION POLYMERS ON GAS CHROMATOGRAPHY AND SENSING** **Florian Mertens** (Technische Universität Bergakademie Freiberg) Alexander Münch, Tony Böhle, Michael Günthel, Tobias Weling	*ORAL* **STUDY OF VISCOUS SINTERING VIA TWO-PHASE LATTICE-BOLTZMANN METHOD** **Fathollah Varnik** (ICAMS, Ruhr-Universität Bochum) Markus Gross, Ingo Steinbach	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF NANO-SIZED SILVER LAYERS** **Saba Zabihzadeh** (Materials Science and Simulations, Paul Scherrer Institut, CH-5232, Villigen PSI, Switzerland) Steven Van Petegem, Rajmund Mokso, Chunlei Liu, Helena Van Swygenhoven-Moens
12:20	*ORAL* **RATIONAL DESIGN OF NANO-STRUCTURED, NOBLE METAL FREE, CERIA-ZIRCONIA CATALYSTS WITH OUTSTANDING LOW TEMPERATURE OXYGEN STORAGE CAPACITY** **José Juan Calvino** (Universidad de Cádiz) Maria Pilar Yeste, Juan Carlos Hernández-Garrido, Diana Carolina Arias, Ginesa Blanco, José María Rodríguez-Izquierdo, José María Pintado, Serafín Bernal, José Antonio Pérez-Omil	*ORAL* **CELLULAR UPTAKE AND TOXICITY EVALUATION OF NANOMETRIC METAL-ORGANIC FRAMEWORKS** **Cristina Tamames-Tabar** (Institut Lavoisier, Université de Versailles)	*ORAL* **INVESTMENT CASTING OF TI-6AL-4V ALLOY MELTED VIA COLD CRUCIBLE INDUCTION MELTING** **Xabier Chamorro** (Mondragon University) Zigor Azpilgain, Nuria Herrero, Ion Quintana, Pedro Pablo Rodríguez	*ORAL* **CHARACTERISATION AND MODELLING OF TUBULAR JOINTS FORMED BY ELECTROMAGNETIC COMPRESSION** **Viktor Gonda** (Obuda University) Pál Rácz
12:40	*ORAL* **NICKEL DOPED MANGANESE OXIDE ELECTRODES FOR REDOX SUPERCAPACITORS** **Tuyen Nguyen** (ICEMS, Instituto Superior Técnico, Universidade Técnica de Lisboa,Portugal) Sonia Eugneio, Raquel Duarte, Maria Teresa Silva, Maria Joao Carmezim, Michel Boudard, Fatima Montemor	*ORAL* **EXPLORING FRONTIERS OF HIGH SURFACE AREA METAL-ORGANIC FRAMEWORKS** **Maciej Haranczyk** (Lawrence Berkeley National Laboratory) Richard Martin	*ORAL* **COMPATIBILITY OF SULFUR AND CARBON MATERIALS FOR ELECTRICAL ENERGY STORAGE APPLICATIONS** **Rafal Nowak** (Foundry Research Institute, Cracow, Poland) Ivan Kaban, Lars Giebeler, Natalie Sobczak, Norbert Mattern, Jürgen Eckert	EMPTY SLOT

FRIDAY 13 SEPTEMBER 2013 / AM2

Symposium	A1I	A1III	A2III	A4I
Room	España 2	Andalucía 8	España 1	Andalucía 1
Session Title	Applications (III). Bio- and sensing	Inorganic materials	Bulk magnetoelectric composites/ related technologies	1D nanostructures Morphology, structure and applications
Chairperson	Razvan Stoian	M. Calvo	H. Amorín	S. Gwo
11:00	*INVITED / KEYNOTE* **HYBRID FEMTOSECOND LASER PROCESSING FOR FABRICATION OF HIGHLY FUNCTIONAL BIOMICROCHIPS** **Koji Sugioka** (Laser Technology Laboratory, RIKEN) Dong Wu, Katsumi Midorikawa	*INVITED / KEYNOTE* **STRAIGHTFORWARD ZNO NANO-STRUCTURES FABRICATION FOR THE MEASUREMENT OF TOXIC GASES** **Jurgi Gonzalez de Chavarri** (Ceit and Tecnun (Universidad de Navarra)) Irene Castro Hurtado, Gemma García Mandayo, Enrique Castaño Carmona	*INVITED / KEYNOTE* **STUDY OF MULTIPHASE MATERIALS WITH FERROELECTRIC AND MAGNETIC ORDER** **Liliana Mitoseriu** (Al. I. Cuza University of Iasi) Vincenzo Buscaglia	*INVITED / KEYNOTE* **SIO2/SIC CORE-SHELL NANOWIRES FOR NANOMEDICINE APPLICATIONS** **Giancarlo Salviati** (Imem-Cnr)
11:20				
11:40	*ORAL* **PULSED LASER GENERATION OF NOVEL NANOMATERIALS FOR ORGANIC ELECTRONICS** **Emmanuel Stratakis** (Institute of Electronic Structure and Laser, Foundation for Research & Technology Hellas) Minas Stylianakis, Kiriaki Savva, Emmanuel Kymakis, Costas Fotakis	*ORAL* **ON THE AGEING OF LANTHANUM STRONTIUM COPPER ORTHOFERRITE POWDERS FOR SENSING LAYERS** **Jean-Marc Tulliani** (Politecnico Di Torino, DISAT) Mirko Borgna, Valeria Felice, Pierre Bonville, Luca Tortora, Isabella Natali Sora	EMPTY SLOT	*ORAL* **CONTROL OF THE NANOCARPET EFFECT BY UV AND VIS ILLUMINATION OF 1D PHOTOACTIVE SURFACES BASED ON TIO2 AND ZNO NANORODS** **Manuel Macias-Montero** (Nanotechnology on Surfaces Laboratory, Materials Science Institute of Seville (ICMS)) Ana Borras, Rafael Alvarez, Agustin R. Gonzalez-Elipe
12:00	*ORAL* **ULTRAFAST LASER PROCESSING OF INTRA-OCULAR IMPLANTS** **Eric Mottay** (Amplitude Systemes) Axel Kupisiewcz, Paul-Etienne Martin, Christophe Pagnoulle	*ORAL* **ZNO NANOPOWDER FUNCTIONALIZED WITH CARBOXYLIC ACIDS AS AMMONIA SENSORS** **Mirko Borgna** (Disat, Politécnico de Torino)	*ORAL* **DEVELOPMENT OF FLEXIBLE IONOMER – PZT COMPOSITES AND THEIR PIEZOELECTRIC AND MECHANICAL PROPERTIES** **Nijesh James** (Technical University Delft)	*ORAL* **ELEMENT ANALYSIS BY EDS; FROM NANOSTRUCTURES DOWN TO THE ATOMIC SCALE** **Jana Berlin** (Bruker Nano GmbH) Meiken Falke , Andi Käppel, Ralf Terborg
12:20	*ORAL* **LASER-INDUCED JET FORMATION FOR THE MICROPRINTING OF LIQUIDS** **J. Marcos Fernández-Pradas** (Universitat de Barcelona) Adrian Patrascioiu, Jose Luis Morenza, Pere Serra	*ORAL* **MULTIFUCTIONAL CORE-SHELL CO-SIO2 NANOWIRES FOR PH-NANOSENSORS** **Lucas Pérez** (Universidad Complutense de Madrid) Laura Martín-García , Sandra Ruiz-Gómez, Manuel Abuín, Yaiza Montaña, Noemí Carmona	*ORAL* **TECHNOLOGY OF PRODUCING NANOCRYSTALLINE MATERIALS POSSESSING UNIQUE MAGNETIC PROPERTIES** **Vladimir Tsepelev** (Boris Yeltzin Ural Federal University) Viktor Konashkov, Vladimir Lad'yanov, Anna Podolskaja, Vladimir Belozerov, Yuri Starodubtsev	*ORAL* **TEM OF CHALCOGENIDE NANOBELTS WITH TRANSROTATIONAL NANOSTRUCTURE GROWING IN CRYSTALLIZING AMORPHOUS FILMS** **Vladimir Yu. Kolosov** (Ural Federal University)
12:40	*ORAL* **CLOSING REMARKS** **Razvan Stoian**	*ORAL* **METAL OXIDE NANOWIRES CHEMICAL SENSORS FOR SECURITY** **Andrea Ponzoni** (Sensor, CNR-IDASC and University of Brescia) Elisabetta Comini, Dario Zappa, Giorgio Sberveglieri	EMPTY SLOT	*ORAL* **INFLUENCE OF SELF-DEGRADED TEMPLATE SHAPE ON FINAL MORPHOLOGY OF STRUCTURED POLYPYRROLE** **Dusan Kopecký** (Institute of Chemical Technology Prague) Jitka Škodová, Martin Vròata, Pøemysl Fitl

FRIDAY 13 SEPTEMBER 2013 / AM2

Symposium	C3II	D3I	E2I	E3IV
Room	Andalucía 4	España 5	España 4	Macarena
Session Title	Advanced Processing Methods to maintain Nano-Features from the Powder III	Materials Discovery and High-Throughput Methods: Modelling IV	Lightweight Materials and Structural Solutions for Transport Applicaations V	Materials for Nuclear Applications IV
Chairperson	K. Morita	Georg Madsen	Gradinger R.	Julien Cambedozou
11:00	*ORAL* **DRIVING FORCE FOR LOW TEMPERATURE SINTERING OF INTERSTITIAL AND INTER-METALLIC POWDERS AND INDUCED APPLICATIONS** **Catherine Cordier** (UMET - Université de Lille 1) Jacques Foct	*INVITED / KEYNOTE* **DENSITY FUNCTIONAL BASED STRUCTURE PREDICTION WITH THE MINIMA HOPPING METHOD** **Stefan Goedecker** (Uni Basel)	*ORAL* **ENERGY ABSORBTION AND FAILURE MODES OF METAL MATRIX SYNTACTIC FOAMS** **Orbulov Imre Norbert** (Budapest University Of Technology and Economics Faculty Of Mechanical Engineering Department Of Materials Science and Engineering) Májlinger Kornél	*ORAL* **ADVANCED SURFACE TREATMENTS FOR HEAT EXCHANGERS,PIPES OR OTHER COMPONENTS OF SODIUM COOLED FAST REACTORS** **Emmanuel Horowitz** (Edf)
11:20	*ORAL* **INDUCTION SINTERING OF SILVER-BASED COMPOSITES: EFFECT OF PROCESS PARAMETERS ON FINAL PROPERTIES** **Edouard Biguereau** (Laboratoire SIMaP) Didier Bouvard, Jean-Marc Chaix, Sophie Roure		*ORAL* **MECHANICAL PERFORMANCE OF FE99.7 AND FENI36 SYNTACTIC FOAMS AT VARIED STRAIN RATES** **Dung D. Luong** (Polytechnic Institute Of New York University) Dinish Pinisetty, Nikhil Gupta, Dirk Lehmhus, Jörg Weise, Joachim Baumeister, Matthias Busse	*HIGHLIGHT* **LOW DOSE RADIATION DAMAGE STUDY OF W-RE ALLOYS FOR THE FUSION REACTOR DIVERTOR** **Alan Xu** (University Of Oxford)
11:40	*ORAL* **STUDY OF SPARK PLASMA SINTERING OF NANOSTRUCTURED COPPER** **Judith Monnier** (ICMPE UMR 7182 CNRS and UPEC (Université Paris-Est Créteil)) Loïc Perrière, Benjamin Villeroy, Claude Godart, Yannick Champion	*ORAL* **MAPPING THE LAVES PHASES IN CA-MG-CU-NI SYSTEM FOR LIGHTWEIGHT HYDROGEN STORAGE MATERIALS: HIGH THROUGHPUT DIFFUSION MULTIPLE APPROACH AND CALPHAD METHOD** **Guanglong Xu** (IMDEA Materials Institute) Yuwen Cui, Yi Chen	*ORAL* **EXPERIMENTAL EVALUATION OF THE MECHANICAL BEHAVIOUR OF STRONGLY ANISO-TROPIC LIGHT-WEIGHT METALLIC FIBRE STRUCTURES UNDER STATIC AND DYNAMIC COMPRESSIVE LOADING** **Olaf Andersen** (Fraunhofer IFAM Dresden, Germany) Ulrike Jehring, Thomas Fiedler, Lovre Krstulovic-Opara, Matej Vesenjak	*ORAL* **MAGNETISM OF DEFECTS IN IRON, AND THE EFFECT OF MAGNETISM ON DEFECT PRODUCTION IN COLLISION CASCADES** **Pui-Wai Ma** (Culham Centre for Fusion Energy) Sergei L. Dudarev
12:00	*ORAL* **TAU-MNAL: MOVING BEYOND CONVENTIONAL PERMANENT MAGNETS** **Ian Baker** (Dartmouth College - Thayer School Of Engineering) Anurag Chaturvedi, Rumana Yaqub	*ORAL* **DENSITY FUNCTIONAL SIMULATIONS OF THE CRYSTALLIZATION OF THE PHASE-CHANGE MATERIAL GE2S-B2TE5: INSIGHTS ON NUCLEATION AND PERCOLATION** **Jaakko Akola** (Tampere University Of Technology) Janne Kalikka, Robert O. Jones	*ORAL* **PRODUCTION AND CHARACTERISATION OF ALUMINIUM ALLOY TUBES FILLED WITH ALUMINIUM ALLOY FOAM** **Isabel Duarte** (Department Of Mechanical Engineering, University Of Aveiro) Matej Vesenjak, Lovre Krstulovic-Opara	*ORAL* **INFLUENCE OF TEMPERATURE AND ATMOSPHERE IN TUNGSTEN-TITANIUM-LANTHANA ALLOYS** **Jose Ygnacio Pastor** (Universidad Politecnica de Madrid) Teresa Palacios , Angel Muñoz,
12:20	EMPTY SLOT	*ORAL* **AB INITIO CRYSTAL ENGINEERING STRATEGIES FOR NONCENTROSYMMETRIC 214-RUDDLESDEN-POPPER PHASES** **James Rondinelli** (Drexel University) Prasanna Balachandran	*ORAL* **EFFECT OF FIBRE CONFIGURATIONS ON IMPACT PERFORMANCE OF FLAX/TANNIN COMPOSITES FOR AUTOMOTIVE STRUCTURAL APPLICATIONS** **James Njuguna** (Centre of Automotive Technology, Cranfeild Unversity) J Zhu, A Abhyankar, H Zhu, D Perreux, F Thiebaud, D Chapelle, A Pizzi, A Sauget, A de Larminant	*ORAL* **STRUCTURE AND MECHANICAL PROPERTIES OF NANOSTRUCTURED TUNGSTEN FILMS FOR NUCLEAR APPLICATIONS** **Elena Tejado** (Departamento de Ciencia de Materiales-CISDEM, ETSI de Caminos, Canales Y Puertos, Universidad Politécnica de Madrid) Nuria Gordillo, Miguel Panizo-Laiz, Raquel Gonzalez-Arrabal, Ivan Fernandez-Martinez, José Ygnacio Pastor
12:40	EMPTY SLOT	*ORAL* **EVOLVING COMPUTATIONAL DESIGN OF FRAMEWORK MATERIALS** **Matthew Addicoat** (Jacobs University) Ismot Farjana Akter, Nina Vankova, Thomas Heine	*ORAL* **PLY ORIENTATION AND LAMINATE CONFIGURATION EFFECT ON QUASI-STATIC CRUSH ENERGY ABSORPTION CAPABILITY OF E-GLASS/POLYESTER AND HYBRID E-GLASS-BASALT/POLYESTER COMPOSITE STRUCTURES** **Aritz Esnaola** (CIDIA; Mondragon Automocion S.Coop.) Ibai Ulacia, Laurentzi Aretxabaleta, Jon Aurrekoetxea, Iván Gallego	*ORAL* **MICROSTRUCTURE AND MECHANICAL PROPERTIES DEGRADATION AT HIGH TEMPERATURE OF TUNGSTEN ALLOYS PROCESSED BY FORGING** **Micaela Gómez Jiménez** (Universidad Politécnica de Madrid) Teresa Palacios, Ángel Munñoz, Jose Ygnacio Pastor

FRIDAY 13 SEPTEMBER 2013 / AM2

Symposium	E4I	F1II	F2I	F3I
Room	Andalucía 2	Andalucía 5	Sevilla 3	La Pinta
Session Title	Lithium ion batteries II	Bioinspired and Functional Materials for Tissue Engineering III	Bioinspired Surfaces	Biointerfaces for biosensing
Chairperson	Wilhelm Pfleging	A. R. Boccaccini	Markus Hartmann	Alex Shard and Peter Bienstman
11:00	EMPTY SLOT	*ORAL* **POLY(3-HYDROXYOCTANOATE), A POTENTIAL MATERIAL FOR CARDIAC TISSUE ENGINEERING** **Aldo R. Boccaccini** (University Of Erlangen-Nuremberg) Andrea Bagdadi, Sian Harding, Mohan Edirisnghe, Ipsita Roy	*INVITED / KEYNOTE* **PHOTOSYSTEM I FROM SPINACH ENABLES PHOTOLITHOGRAPHY OF METALS** **Marc Desmulliez** (Heriot-Watt University) Jack Hoyd-Gigg Ng	*INVITED / KEYNOTE* **LABEL-FREE BIOMOLECULAR INTERACTION ANALYSIS AND EQUILIBRIUM-FLUCTUATION-BASED SINGLE-MOLECULE STUDIES OF CELL-MEMBRANE MIMICS** **Fredrik Höök** (Chalmers University Of Technology) Björn Agnarsson, Anders Lundgren, Olov Wahlsten, Anders Gunnarsson
11:20	*ORAL* **THE CHEMICAL DELITHIATION EFFECTS ON MICROSTRUCTURAL AND ELECTROCHEMICAL PROPERTIES OF LIFEPO4 OLIVINE PHASE** **Marie Lachal** (LEPMI) Suzy Surblé, Cécile Rossignol, Renaud Bouchet, Hicham Khodja, Fannie Alloin, Said Obbade	EMPTY SLOT		
11:40	*ORAL* **EFFECT OF COMPOSITE ELECTRODE THICKNESS ON THE ELECTROCHEMICAL PERFORMANCES OF ALL-SOLID-STATE LI-ION BATTERIES** **Agnieszka Kubanska** (Laboratoire Madirel, Université D'Aix Marseille) Laurent Castro, Laurence Tortet, Mickael Dollé, Renaud Bouchet	*ORAL* **COLLAGEN FIBRIL COATINGS ENHANCED WITH LACTOFERRIN IMPROVE OSTEOBLAST BEHAVIOR ON POLYMERIC MATERIAL FOR BONE IMPLANTS** **Marta Vandrovcova** (Institute of Physiology, Academy of Sciences of the Czech Republic, Dept. of Biomaterials and Tissue Engineering, Prague, Czech Republic) Lucie Bacakova, Sascha Heinemann, Dieter Scharnweber, Peter Dubruel, Timothy Douglas	*ORAL* **HIGH ASPECT RATIO MOLDS FOR BIOINSPIRED ADHESION SURFACES** **Daniel Brodoceanu** (INM–Leibniz Institute for New Materials) Tobias Kraus	*ORAL* **CHARACTERIZATION OF NANOPARTICLES' INTERFACES FOR BIOSENSING APPLICATIONS** **Caterina Minelli** (National Physical Laboratory) Nia C. Bell, Santanu Ray, Alex G. Shard
12:00	*ORAL* **INTERMETALLIC ANODES FOR LITHIUM-ION SECONDARY BATTERIES** **Hans Flandorfer** (University of Vienna, Department of Materials Chemistry)	*ORAL* **ANTIMICROBIAL AND BIOCOMPATIBLE MESOPOROUS-MACROPOROUS BIOACTIVE SCAFFOLDS CONTAINING GALLIUM AND ZINC** **Antonio J. Salinas** (Universidad Complutense de Madrid and CIBER-BBN) Sandra Sánchez-Salcedo, Shruti Shruti, María Vallet-Regí	*ORAL* **BIO-INSPIRED SOLID-LIQUID INTERFACES: THE EFFECT OF THE NANOSCALE SURFACE STRUCTURE ON WETTING PROPERTIES** **Kislon Voitchovsky** (Ecole Polytechnique Federale de Lausanne)	*ORAL* **SUCROSE PHOSPHORYLASE IN LANGMUIR-BLODGETT FILMS FOR BIOSENSING** **Luciano Caseli** (Federal University Of Sao Paulo) Jefferson Rocha
12:20	*ORAL* **THE CU-LI-SN SYSTEM AS NEW INTERMETALLIC ANODE MATERIAL FOR LITHIUM ION BATTERIES** **Siegfried Fürtauer** (University Of Vienna; Department Of Inorganic Chemistry / Material Chemistry) Hans Flandorfer	EMPTY SLOT	*ORAL* **CELLULOSE AS A CHEMICAL REAGENT FOR A WATER-FREE PREPARATION OF HIERARCHICAL TIO2 NANOSTRUCTURES WITH EFFICENT PHOTOCATALYTIC PROPERTIES : THE CASE OF COTTON, FILTER PAPER AND FERULA .** **Bruno Boury** (Université Montpellier 2 - Institut Charles Gerhardt) Sandjoy Samdarshi, Hubert Mutin, Ranjith Nair	*HIGHLIGHT* **DEVELOPING AND VALIDATING ANALYSIS METHODS FOR BIOINTERFACES** **Dmitri Petrovykh** (International Iberian Nanotechnology Laboratory (INL))
12:40	*ORAL* **MANUFACTURING OF MONOLITHIC ELECTRODES FROM LOW COST RENEWABLE RESOURCES** **Orlando Rios** (Oak Ridge National Laboratory) Wyatt Tenhaeff, Claus Daniel	EMPTY SLOT	*ORAL* **STOCHASTIC NETWORKS OF ORGANIC MEMRISTORS: MATERIALS, PREPARATION AND ADAPTIVE BEHAVIOR** **Tatiana Berzina** (Cnr-Imem) Victor Erokhin	*ORAL* **LASER ASSISTED BIOPRINTING OF LAMININ MICROMETRIC SPOTS ON CANTILEVERS AND CORRELATION WITH FREQUENCY RESPONSE** **Silvia Tortorella** (CNR-ISMN Bologna) Pierpaolo Greco, Cristiano Albonetti, Francesco Valle, Ivan Ferrante, Karin Santoro, Carlo Ricciardi, Beatrice Chelli, Massimiliano Cavallini, Fabio Biscarini

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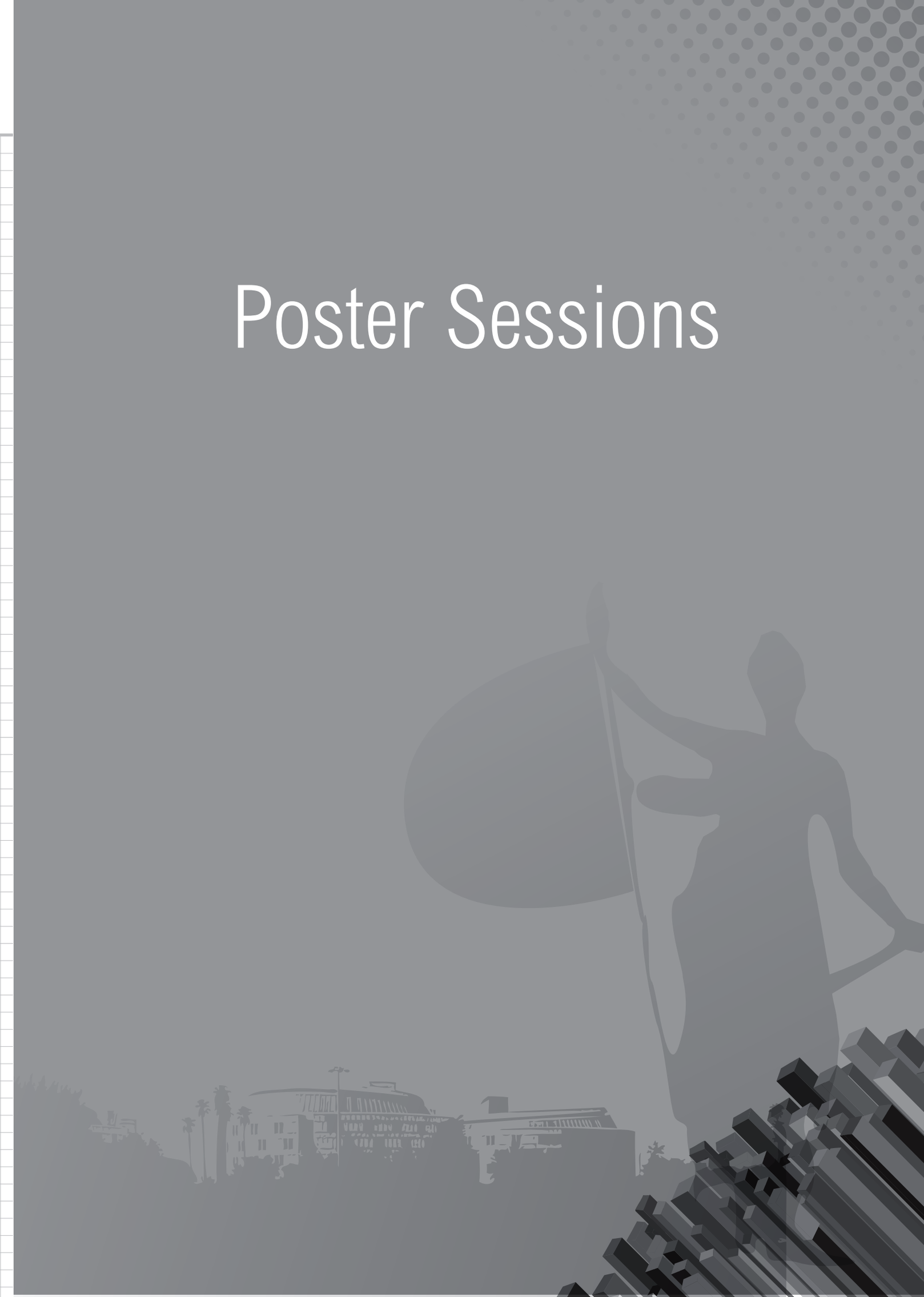
Poster Sessions



TUESDAY 10 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A2 / MAGNETIC AND MULTIFERROIC MATERIALS

A2I / Domain Structure and Magnetization Processes in Magnetic Nanoscale Systems

A2I-P-TU-PS1-1
Magnetic characterization of different Fe layers thickness with Barkhausen Noise Technique.
Valeria Ines Ortega Paredes / *Comisión Nacional de Energía Atómica (CNEA)*
NICOLAS MARCELO NUÑEZ • DARIO NELSON TORRES

A2I-P-TU-PS1-2
The influence of the sheet metal cutting technologies on the energy losses in non-oriented silicon iron alloys
Veronica Paltanea / *Politehnica University From Bucharest*
GHEORGHE PALTANEA • HORIA GAVRILA • EROS PATROI • IOAN PETER

A2I-P-TU-PS1-3
Interlayer exchange coupling in Fe/Pt systems
Mohamed Bouateli / *USTHB,Algiers, Algeria*
ANTOINE KHATER • ABDELHAFID KELLOU

A2I-P-TU-PS1-4
Structure and magnetic properties of inverse-sputtered Nd-Fe-B/Nd films
Daisuke Ogawa / *Yamagata University*
KUNIHIRO KOIKE • YOSHIYUKI MIZUNO • TAKAMICHI MIYAZAKI • YASUO ANDO • HIROAKI KATO

A2I-P-TU-PS1-5
[Co2(NH2-bdc)2(dabco)] Metal Organic Framework as precursor to prepare Co3O4 as hollow micro/nanotubes
Claudia Gómez-Aguirre / *Universidad de A Coruña*
BREOGÁN PATO-DOLDÁN • SUSANA YÁÑEZ-VILAR • JUAN BERMÚDEZ-GARCÍA • ALFONSO FONDADO • JORGE MIRA • MANUEL SÁNCHEZ-ANDÚJAR • SOCORRO CASTRO-GARCÍA • MARIA-ANTONIA SEÑARÍS-RODRÍGUEZ

A2I-P-TU-PS1-6
Static and dynamic magnetic domain configuration in electrodeposited cobalt platinum nanowires
Kristina Zuzek Rozman / *Jozef Stefan Institute*
MUHAMMAD SHAHID ARSHAD • MATEJ KOMELJ • PAUL J. MCGUINESS • SPOMENKA KOBE

A2I-P-TU-PS1-7
Computer simulation of magnetic particles artificial arrays
Yuriy Shevchenko / *Far Eastern Federal University*
KONSTANTIN NEFEDEV

A2I-P-TU-PS1-8
Magnetic phase transition and freezing effect in Sm1-xBaxCrO3 (x=0 and 0.1) orthochromites
Xiaolong Qian / *Department of Physics, Shanghai University*
DONGMEI DE NG • YUAN JIN • ZHIJIU XING • BO LU • BAOJUAN KANG • SHIXUN CAO • JINCANG ZHANG

A2I-P-TU-PS1-9
Spin-orbit interaction and ferroelectric domain walls in multiferroic chromites RCrO3: A first-principles study
Lei Chen / *Department of Physics,Shanghai University*
ZHENJIE FENG • YUAN JIN • XIAOLONG QIAN • WEI REN • DONGMEI DE NG • SHIXUN CAO • JINCANG ZHANG

TUESDAY 10 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A2 / MAGNETIC AND MULTIFERROIC MATERIALS

A2II / Biological Application of Magnetic Nanoparticles

A2II-P-TU-PS1-1
Optimizing the application of magnetite nanoparticles for Cr(VI) removal
Konstantinos Simeonidis / *Department of Mechanical Engineering, School of Engineering, University of ThessalyVolos, Greece*
EFTHIMIA KAPRARA • MANASSIS MITRAKAS • GEORGE VOURLIAS • NIKOLAOS ANDRITSOS

A2II-P-TU-PS1-2
Magnetic Nanoparticles for Targeted Drug de livery using Magnetic Implants
Rodrigo Fernández-Pacheco / *Instituto de Nanociencia de Aragón (INA)*
CLARA MARQUINA • J. GABRIEL VALDIVIA • M. RICARDO IBARRA

A2II-P-TU-PS1-3
Controlled drug release from surface-functionalized laser-generated magnetic nanoparticles
Annette Barchanski / *Laser Zentrum Hannover e.V.*
CSABA LASZLO SAJTI • BORIS CHICHKOV

A2II-P-TU-PS1-4 **Magnetic hyperthermia as a potential disinfection method against food spoilage microorganisms**
José Rivas / *International Nanotechnology Laboratory*
MANUEL BAÑOBRE • DIANA RODRIGUES • BEGOÑA ESPIÑA • JOANA AZEREDO

A2II-P-TU-PS1-5 **In vitro and ex vivo modulation of the cGMP pathway in vascular smooth muscle cells**
Staffan Hildebrand / *Institute of Pharmacology and Toxicology, Biomedical Center, University of Bonn, Germany*
KATRIN ZIMMERMANN • OLGA MYKHAYLYK • SARAH VOSEN • DANIELA WENZEL • BERNHARD GLEICH • BERND K. FLEISCHMANN • ALEXANDER PFEIFER

A2II-P-TU-PS1-6 **Synthesis and Magnetic Characterization of superparamagnetic nanoparticles of iron oxide stabilized with de xtran**
Priscila Chaves Panta / *University of Rio Grande do Sul*
RÚBIA YOUNG SUN ZAMPIVA • SABRINA KARNOPP FORTE • CARLOS PÉREZ BERGMANN

A2II-P-TU-PS1-7 **Development of superparamagnetic iron oxide nanoparticles (SPION) and the requirements for biomedical applications**
Margarethe Hofmann / *MatSearch Consulting Hofmann*
HEINRICH HOFMANN • LIONEL MAURIZI • MARIE GABRIELLE BEUZELIN

TUESDAY 10 SEPTEMBER 2013

AREA B / STRUCTURAL MATERIALS

B1 / ADVANCED METALS

B1I / Nanostructured Steels

B1I-P-TU-PS1-1 **Study of strain–induced pseudoelastic behavior in nano-grained Fe-10Ni-7Mn (wt.%) martensitic steel**
Mahmoud Nili Ahmadabadi / *School of Metallurgy and Materials Engineering, University of Tehran, Tehran, Iran / Hadi Ghasemi Nanesa*
HAMID REZA KOOHDAR • CYRUS ZAMANI

B1I-P-TU-PS1-2 **Describing TRIP effect for two nanostructured bainitic steels**
Carlos Garcia-Mateo / *Spanish National Research Center for Metallurgy (CENIM-CSIC)*
BEHZAD AVISHAN • LUCIA MORALES-RIVAS • SASAN YAZDANI • FRANCISCA G. CABALLERO

B1I-P-TU-PS1-3 **Texture investigation in the austenitic steel single crystal after hydrostatic extrusion**
Dorota Jakubowska / *Warsaw University of Technology*
JOANNA ZDUNEK • JAROSLAW MIZERA • KRZYSZTOF JAN KURZYDLOWSKI

B1I-P-TU-PS1-4 **Microstructure inhomogeneity of duplex steel subjected to hydrostatic extrusion**
Piotr Maj / *Warsaw University of Technology, Faculty of Materials Engineering*
BOGUSLAWA ADAMCZYK-CIESLAK • MACIEJ SPYCHALSKI • JAROSLAW MIZERA

B1I-P-TU-PS1-5 **High-strength steel with nanocrystalline structure**
Liudmila Maltceva / *The Ural Federal University (UrFU)*
TATIANA MALTCEVA • NATALIA OZERETS • VALENTINA SHARAPOVA • ANNA LEVINA

B1I-P-TU-PS1-6 **High Temperature de formation of CMnSi Q&P Steels**
Pablo Rodriguez-Calvillo / *Fundació CTM Centre Tecnològic*
AHMED BOLULAJAAJ • ANA HERNADEZ-EXPOSITO • JOSE MARIA CABRERA

B1I-P-TU-PS1-7 **Mechanical comparison of a CMnSi Quench&Partitioning steel and a modified TRIP700 steel**
Pablo Rodriguez-Calvillo / *Fundació CTM Centre Tecnològic*
ANA HERNADEZ-EXPOSITO • JOSE MARIA CABRERA

B1I-P-TU-PS1-8 **Modelling of the effect of Mn segregation on the quenching and partitioning process**
Maria Giuseppina Mecozzi / *de Ift University of Technology*
MARIA SANTOFIMIA • JILT SIETSMA

B1I-P-TU-PS1-9 **FORMATION OF NANOCRYSTALLINE Fe-Ni ALLOY POWDERS BY MECHANICAL ALLOYING METHOD**
Naouam Boudinar / *Ecole Préparatoire Aux Science Et Technique Annaba, Algérie*
ABDELMALIK DJEKOUN

B1I-P-TU-PS1-10 **Landau Model for Quenching and Partitioning Process in Steels**
Guanglong Xu / *IMDEA Materials Institute*
DONG-WOOK LEE • YI CHEN • YUWEN CUI • JAVIER LLORCA

TUESDAY 10 SEPTEMBER 2013

AREA B / STRUCTURAL MATERIALS

B1 / ADVANCED METALS

B1II / Metallic Glasses and their Composites

B1II-P-TU-PS1-1
A Novel phosphorous-free Pt-based BMG
Hamed Kazemi / *EPFL, (Laboratoire de Métallurgie Mécanique)*
LUDGER WEBER

B1II-P-TU-PS1-2
Synthesis of Mg-Cu-Y Bulk Metallic Glass Plate via Spray Forming Process
Chi Tsao / *National Cheng Kung University*
R. H. KONG • M.-L. T. GUO • K. F. CHANG

B1II-P-TU-PS1-3
Threshold of Crack Propagation of Zr-based Bulk Metallic Glass in Sodium Chloride Solution
Yoshikazu Nakai / *Kobe University*
TOYOHIKO KOYAMA • BO HE • KOHEI UENO

B1II-P-TU-PS1-4
Numerical Model of Thermal Field de veloped in Fe67Cr4Mo4Ga4P12B5C4 Bulk Amorphous Alloy Processing
Cosmin Codrean / *Politehnica University of Timisoara*
BOGDAN RADU • DRAGOS BUZDUGAN • VIOREL-AUREL SERBAN

B1II-P-TU-PS1-5
Fe-based bulk metallic glass with high mechanical properties
Dragos Buzdugan / *Politehnica University of Timisoara*
COSMIN CODREAN • VIOREL-AUREL SERBAN • FLORIN CORNEA

B1II-P-TU-PS1-6
Gas flow Properties of selective dissoluted metallic glass composites
Kim Song-Yi / *Kitech*
GUEM BO-KYEONG • LEE MIN-HA • JÜRGEN ECKERT • KIM BUM-SUNG

B1II-P-TU-PS1-7
Fe-based bulk metallic glasses. Amorphous character in different geometries
Lorena M. Callejo / *TECNALIA Research & Innovation*
IDURRE KALTZAKORTA • BEATRIZ LUCIO

B1II-P-TU-PS1-8
Electrochemical Corrosion Behavior of Amorphous versus Crystalline Zr-based Alloy in Simulated Body Fluid
Ali Tabeshian / *Royal Institute of Technology*
DAN PERSSON • STEVEN J. SAVAGE • RAGNHILD E. AUNE

B1II-P-TU-PS1-9
Crystalline-amorphous Al-based composites fabricated by powder compaction
Dariusz Oleszak / *Faculty of Materials Science and Eng., Warsaw University of Technology*
SYLWIA D±BROWSKA • TADEUSZ KULIK

B1II-P-TU-PS1-10
Dissolution behavior of nano-composite powder with removed dissolution phase
BoKyeong Guem / *Korea Institute of Industrial Technology*
SONGYI KIM • MINHA LEE • JÜRGEN ECKERT • BUMSUNG KIM

B1II-P-TU-PS1-11
Ab-initio guided de sign of Ultra-Strong Metallic Glasses
Mathias Köhler / *Max Planck Institute for Iron Research, Department of Microstructure Physics and Alloy de sign*
VOLKER SCHNABEL • PRADEEP KONDA GOKULDOSS • DIERK RAABE • JOCHEN M. SCHNEIDER

B1II-P-TU-PS1-12
Cu-based bulk metallic glasses with wide supercooled liquid region
Jerzy Latuch / *Faculty of Materials Science & Engineering WUT*
TADEUSZ KULIK

B1II-P-TU-PS1-13
Biocompatible Ti-xNb (14 < x< 40) alloys: Structural, electronic and mechanical properties
Jose Julio Gutierrez Moreno / *University of Ioannina*
DIMITRIS PAPAGEORGIOU • GEORGE EVANGELAKIS • CHRISTINA LEKKA • MATTHIAS BÖNISCH • ARNE HELTH • MARIANA CALIN • ANNETT GEBERT • JURGEN ECKERT

TUESDAY 10 SEPTEMBER 2013

AREA B / STRUCTURAL MATERIALS

B1 / ADVANCED METALS

B1III / Intermetallics

B1III-P-TU-PS1-1
Effects of cold work and heat treatment on the microstructure and hardness of NiTi shape memory alloys
Mehrdad Karimzadeh / *Iran University of Science and Technology*
MOHAMMADREZA ABOUTALEBI • MOHAMMADTAGHI SALEHI • MAHDI ABBASI

B1III-P-TU-PS1-2 **Dry Sliding Wear of Fe30Ni20Mn25Al25**
Ian Baker / *Dartmouth College - Thayer School of Engineering*
YUAN LU • PETER BLAU • F.E. KENNEDY • P.R. MUNROE

B1III-P-TU-PS1-3 **Metamagnetic structural phase transition in a transition of valent electrons**
Alexey Mashirov / *Kotelnikov Institute of Radioengineering and Electronics of RAS, Moscow, RUSSIA*
ALEXANDER KAMANTSEV • ELVINA KALIMULLINA • VICTOR KOLEDOV • JAVIER GARCIA • VICTOR VEGA • BLANCA HERNANDO • VLADIMIR SHAVROV

B1III-P-TU-PS1-5 **Mechanical properties of L12 intermetallics in wide temperature range**
Yuliy Milman / *Institute for Problems of Materials Science, Ukrainian Academy of Science*
SVITLANA CHIGUNOVA • MIKOLA YEFIMOV

B1III-P-TU-PS1-6 **Hydrogen Effects on the Electronic and Microstructural Properties of CeNi5 Intermetallic Compound**
Atika Roustila / *Universite Constantine I*
JACQUES CHÊNE

B1III-P-TU-PS1-7 **Intermetallic Al3Sc: the temperature dependence of mechanical properties and features of deformation mechanism**
Svitlana Chugunova / *Institute for Problems of Materials Science, National Ukrainian Academy of Science*
OLEKSIY GOLUBENKO • IRINA GONCHAROVA • VICTOR GONCHARUK

B1III-P-TU-PS1-8 **Synthesis of Ti-Al-B based composites in Dynamic Conditions**
Mikheil Chikhradze / *G.Tsulukidze Mining Institute*

B1III-P-TU-PS1-10 **Relative phase stability, electronic and mechanical properties of n-Ni6Nb(Al,Ti) in Allvac 718Plus from first-principles**
Nikolai Eurich / *University of Cambridge*
PAUL BRISTOWE

B1III-P-TU-PS1-11 **Production of Ti-48Al-2Cr-2Nb alloy for aerospace applications**
Vinicius Henriques / *Brazilian Aerospace Center -CTA*
CARLOS CAIRO • MARIO GRACA • EDUARDO TAVARES GALVANI • THAIS DOS REIS LUZ

B1III-P-TU-PS1-12 **Study on grain size refinement of NdFeB permanent magnet through sintering temperature control**
Young Do Kim / *Hanyang University*
JIN WOO KIM • TAESUK JANG

B1III-P-TU-PS1-13 **The structure and corrosion resistance of Al-Cr-Fe alloys produced by copper-mould casting**
Ewa Ura-Binczyk / *Faculty of Materials Science and Engineering; Warsaw University of Technology*
JERZY LATUCH • MALGORZATA LEWANDOWSKA

B1III-P-TU-PS1-14 **Chemical and structural analysis of new core-shell iron-bismuth nanospheres**
Jean-Charles Dupin / *Iprem Cnrs Umr 5254*
JOACHIM ALLOUCHE • DANIELLE GONBEAU • JEAN GABRIEL MATTEI • MARIE-JOSE CASANOVE • PIERRE LECANTE • CATHERINE AMIENS • FRÉDÉRIC PELLETIER • JEAN-MARC GRENECHE

B1III-P-TU-PS1-15 **A study of the Fe-Cr system alloys by positron annihilation spectroscopy**
Javier del Rio / *Universidad Complutense de Madrid*
CONSUELO GOMEZ • JOSE ANTONIO JIMENEZ

B1III-P-TU-PS1-16 **Ni-Mn-Sn alloys obtained by melt spinning and mechanical alloying**
J.J. Suñol / *University of Girona / R Coll*
A DE LTELL • M.L. ESCODA • B. HERNANDO

B1III-P-TU-PS1-17 **Fabrication of Mo-Si-B Alloy by Mechano-chemical Process**
Myung-Jin Suk / *Kangwon National University*
SEOK HYUN HWANG • JONG MIN BYUN • JIN WOO KIM • SUNG-TAG OH • SEONG LEE • YOUNG DO KIM

B1III-P-TU-PS1-18 **Elastic and thermodynamics properties of the B2- ErX (X=Cu, Au, Ag, Ir) type rare earth intermetallic compounds from ab-initio calculations**
Abdessamad Sekkal / *A Laboratoire D'Etude Et Prédiction de Matériaux, Unité de Recherche Matériaux Et Energies Renouvelables, Université Abou Bekr Belkaid*
ABDELNOUR BENZAIR

B1III-P-TU-PS1-21 **Study of the oxidation of TiAl intermetallic obtained by powder metallurgy route.**
Angèlica Amigó / *Universitat Politècnica de València*
JUAN JOSÉ CANDEL • MIGUEL ANGEL LAGOS • IÑIGO AGOTE • DAVID BUSQUETS

B1III-P-TU-PS1-22 **Multi-axis compression of Fe3Al intermetallic alloy**
Radoslaw Myszkowski / *Military University of Technology, Department of Advanced Materials and Technology, Faculty of Advanced Technology and Chemistry*
JERZY BYSTRZYCKI

B1III-P-TU-PS1-23 **Atom Probe Tomography Investigation of the K-state and Short-Range Ordering in Fe-18Al (at.%)**
Ross Marceau / *Max-Planck-Institut Für Eisenforschung*
ANNA CEGUERRA • MARTIN PALM • FRANK STEIN • DIERK RAABE

B1III-P-TU-PS1-24 **The oxidation of Fe3Al intermetallic alloy prepared by incremental technology LENS**
Radoslaw Myszkowski / *Military University of Technology, Department of Advanced Materials and Technology, Faculty of Advanced Technology and Chemistry*

B1III-P-TU-PS1-25 **Nanocrystalline intermetallic matrix Al3Ni2-Al composites produced by hot-pressing consolidation**
Marek Krasnowski / *Faculty of Materials Science and Engineering, Warsaw University of Technology*
STANISLAW GIERLOTKA • TADEUSZ KULIK

B1III-P-TU-PS1-26 **Mechanical properties of as-cast gamma-TiAl alloys with additional alloying**
Volodymyr Goltvyanytsya / *Zaporozhye National Technical University / Iryna Gorna*
SERGIY GOLTVYANYTSYA • YURI PODREZOV • SERGIY FIRSTOV

B1III-P-TU-PS1-27 **Bulk and surface properties of liquid Cr-Nb-Re alloys**
Rada Novakovic / *National Research Council (CNR-IENI)*

B1III-P-TU-PS1-28 **Structural, mechanical and electronic properties study of YCu2 – YZn2 Laves phases by first-principales calculations**
Mostafa Kerim Benabadji / *Laboratoire D'Etude Et Prédiction de s Matériaux*
HOUDA IMANE FARAOUN

TUESDAY 10 SEPTEMBER 2013

AREA B / STRUCTURAL MATERIALS

B1 / ADVANCED METALS

B1IV / High Strength ODS steels: Fundamentals and Applications

B1IV-P-TU-PS1-1 **Role of the oxides during the recrystallization process in a Fe-20Cr-6Al ods alloy**
Carlos Capdevila / *Cenim, Csic*
GEMMA PIMENTEL • ESTEBAN URONES-GARROTE

B1IV-P-TU-PS1-2 **Structure and energetics of oxidic nanoclusters in bcc-iron**
Murali de varaj / *Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research*
MATTHIAS POSSELT

B1IV-P-TU-PS1-3 **Creep-rupture properties of ferritic Cr-ODS steels in stagnant lead at high temperatures**
Mariya Yurechko / *Karlsruhe Institute for Technology (KIT) Institute for Applied Materials | Material Process Technology*
MARTA SERRANO • JAVIER MARTÍN-MUÑOZ • CARSTEN SCHROER • JÜRGEN KONYS

B1IV-P-TU-PS1-4 **Characterization of high Cr-Al oxide dispersion ferritic alloys by small punch tests**
Marta Serrano Garcia / *Ciemat*
ANDREA GARCÍA-JUNCEDA AMEIGENDA • DIEGO RODRIGUEZ SALVADOR

B1IV-P-TU-PS1-5 **High-temperature long-term surface and bulk embrittlement of ferritic 14%Cr ODS steel in lead/lead-bismuth environments**
Hynek Hadraba / *CEITEC IPM, Institute of Physics of Materials ASCR*
LUDEK STRATIL • IVO DLOUHY • ANNA HOJNA • FOSCA DI GABRIELE

B1IV-P-TU-PS1-6 **Corrosion resistance of 9 and 12Cr-ODS steels in stagnant lead**
Francisco Javier Martin Muñoz / *Ciemat*
DOLORES GOMEZ BRICEÑO

B1IV-P-TU-PS1-7 **Effect of impurities on inter-granular fracture strength of body centered cubic metals**
Arshad Mahmood Tahir / *Interdisciplinary Centre for Advanced Materials Simulation (ICAMS)*
VENKATA NAGA SUDHEER GANISETTI • REBECCA JANISCH • ALEXANDER HARTMAIER

B1IV-P-TU-PS1-8 **Selective Laser Melting of an Oxide Dispersion Strengthened Steel**
Thomas Boegelein / *Centre for Materials and Structures, School of Engineering, University of Liverpool*
KARL DAWSON • ANDREW R. JONES • GORDON J. TATLOCK

B1IV-P-TU-PS1-9 **Production and characterization of Al-containing ferritic oxide dispersion strengthened alloys**
Jan Hoffmann / *Karlsruhe Institute of Technology*
MICHAEL RIETH • ANTON MÖSLANG

B1IV-P-TU-PS1-10 **Analysis of wear of new steel used in stamping dies and tooling**
Gerardo Conejero / *Universidad Nebrija*
MONTSERRAT PICHEL • RAFAEL BAREA • NURIA CANDELA • MANUEL CARSÍ

B1IV-P-TU-PS1-11 **Recrystallization behaviour of high strength steel doped with Nb**
Larouk Zeghda / *Université de Constantine 1*
BOUHALAIS HOCINE

B1IV-P-TU-PS1-12 **Comparison of ductile to brittle transition behaviour of MA956 and PM2000 alloys.**
Jesús Chao / *Cenim-Csic*
CARLOS CAPDEVILA • JOSE LUIS GONZÁLEZ

B1IV-P-TU-PS1-13 **Wetting of Fe-Cr based ODS steels by molten Pb**
Enrica Ricci / *Institute for Energetics and Interphases National Research Council*
DONATELLA GIURANNO • STEFANO AMORE • RADA NOVAKOVIC

B1IV-P-TU-PS1-14 **Elastic properties of Fe-Cr and ODS Fe-Cr alloys**
Frank Bergner / *Helmholtz-Zentrum Dresden-Rossendorf*
CORNELIA HEINTZE • ISABELL SCHÖNITZ • MARTA SERRANO

B1IV-P-TU-PS1-15 **Friction Stir Welding of PM2000 Oxide Dispersion Strengthened Steel**
Karl Dawson / *University of Liverpool*
GORDON TATLOCK • STEVEN CATER • SEBASTIEN DRYEPONDT • THOMAS BOEGELEIN • KIRIAKOS MOUSTOUKAS

B1IV-P-TU-PS1-16 **Microstructural Characterisation of Ferritic ODS Steel Consolidated by Spark Plasma Sintering**
Karl Dawson / *University of Liverpool*
HONGTAO ZHANG • MIKE GORLEY • GORDON TATLOCK • PATRICK GRANT • STEVE ROBERTS

B1IV-P-TU-PS1-17 **Recrystallisation Behaviour of as-Mechanically Alloyed Powders of PM2000, MA956 and ODM751 ODS FeCrAl Alloys**
Andy Jones / *University of Liverpool*
ASHWIN RAO • DAN TATHAM

B1IV-P-TU-PS1-18 **High temperature corrosion of high Cr-alloyed sintered and cast austenitic stainless steels in exhaust gas atmosphere**
Ruslan Shvab / *Institute of Materials Research SAS*
EVA DUDROVA • OLA BERGMAN • SVEN BENGTSSON

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AREA B / STRUCTURAL MATERIALS

B2 / ADVANCED CERAMICS

B2I / Advanced Ceramics

B2I-P-TU-PS1-1 **Electrochemical Characteristics of Textured NKLNT Piezoelectric Materials**
Jaesung Song / *Keri (Korea Electrotechnology Research Institute)*
SIN-WOONG KIM • JUHYEONG JO • IN-SUNG KIM • SOON-JONG JEONG • MIN-SOO KIM

B2I-P-TU-PS1-2 **Synthesis, structure and ionic conductivity of lithium-zirconium arsenate-phosphates**
Elena Asabina / *Lobachevsky State University of Nizhni Novgorod / Vladimir Pet'kov / Aleksandr Shipilov*
ILYA PINUS • ANDREY YAROSLAVTSEV

B2I-P-TU-PS1-3 **Study of the influence of crushed olive stone on the porosity of clay brick**
Nasser Chelouah / *Abderahmane Mira University Bejaia*
SAMIA DJADOUF • ABDELKADER TAHAKOURT

B2I-P-TU-PS1-4 **BUILDING ECOMATERIALS FROM INDUSTRIAL WASTES VALORIZACION**
David Torréns Martín / *Universitat Politècnica de Catalunya*
LUCIA FERNÁNDEZ CARRASCO

B2I-P-TU-PS1-5 **Addition of amorphous nanosilica in C3S hydration**
Isabel F. Sáez del Bosque / *Instituto de Ciencias de la Construcción Eduardo Torroja*
MANUEL MARTÍN-PASTOR • SAGRARIO MARTÍNEZ-RAMÍREZ • MARÍA TERESA BLANCO-VARELA

B2I-P-TU-PS1-6 **TiO2 nanoparticulate LZSA glass-ceramic matrix composites**
Fabiano Raupp-Pereira / *Federal University of Santa Catarina*
Francielly Roussenq Cesconeto / João Batista Rodrigues Neto
DACHAMIR HOTZA • ANTONIO PEDRO NOVAES DE OLIVEIRA

B2I-P-TU-PS1-7 **What advantages offset the need to introduce new additives into ferroelectric films**
Natalia Korobova / *National Research University of Electronic Technology, MIET*
SERGEY TIMOSHENKOV • VENIAMIN VODOPYANOV • ALEXANDER MELNIKOV • YULIYA CHERKASOVA • YULIYA STEPANOVA

B2I-P-TU-PS1-8 **Oxidation resistance of pressureless sintered ZrB2/SiC based multilayer ceramics.**
Elisa Padovano / *Politecnico of Torino*
CLAUDIO BADINI • SARA BIAMINO • WENSHU YANG • VERONICA MALERBA • MATTEO PAVESE • PAOLO FINO

B2I-P-TU-PS1-9 **Preparation and characterisation of nano-structured ceria-titania thin films prepared by sol-gel dip coating**
Maria Cristina Ferrara / *ENEA, Technical Unit for Materials Technologies of Brindisi Research Centre*
MAZZARELLI SAVERIO • BLASI CATERINA • VIRGINIA MARTINA • LEANDER TAPFER

B2I-P-TU-PS1-10 **Manufacturing of YAlSiON protective coatings on Si3N4 for high- temperature engineering applications**
María Antonia Sainz Trigo / *Institute Ceramics and Glass (ICV) , CSIC*
PILAR MIRANZO LOPEZ • JORGE BLANDIN

B2I-P-TU-PS1-11 **Transparent polycrystalline YAG with controlled dopant distribution and functional gradient microstructure**
Jan Hostaša / *Department of Glass and Ceramics, ICT Prague, Czech Republic*
LAURA ESPOSITO • WILLI PABST • TEREZA UHLÍřOVÁ • VÁCLAV EIGNER • ZDENěK SOFER

B2I-P-TU-PS1-12 **Single wall carbon nanotubes in a 3YTZP matrix. High temperature mechanical behaviour**
Miguel Castillo-Rodríguez / *Instituto de Ciencia de Materiales de Sevilla, CSIC-Universidad de Sevilla*
ANTONIO MUÑOZ-BERNABÉ • ANA MORALES-RODRÍGUEZ • ANGELA GALLARDO-LÓPEZ • ROSALÍA POYATO-GALÁN • ARTURO DOMÍNGUEZ-RODRÍGUEZ

B2I-P-TU-PS1-13 **Al2O3 particulate LZS glass-ceramic matrix composites**
Antonio Pedro Novaes de Oliveira / *Federal University of Santa Catarina*
SABRINA ARCARO • FABIANO RAUPP-PEREIRA

B2I-P-TU-PS1-14 **Spark plasma sintering and microstructure of low content single-walled carbon nanotube reinforced alumina**
Ángela Gallardo-López / *Universidad de Sevilla*
ANA MORALES-RODRÍGUEZ • ROSALÍA POYATO • ANTONIO MUÑOZ • ARTURO DOMÍNGUEZ-RODRÍGUEZ

B2I-P-TU-PS1-15 **Effect of SiC and graphite on mechanical properties of super-hard boron carbide sintered by Spark Plasma Sintering**
B. Malmal Moshtaghioun / *University of Seville, Dpto Fisica Materia Condensada*
ANGEL LUIS ORTIZ • DIEGO GÓMEZ-GARCÍA • ARTURO DOMÍNGUEZ-RODRÍGUEZ

B2I-P-TU-PS1-16 **Microwave sintering of fully dense beta-eucryptite ceramics with very low thermal expansion**
Rut Benavente / *Polytechnic University of Valencia*
AMPARO BORRELL • MARIA DOLORES SALVADOR • OLGA GARCIA-MORENO • FELIPE PENARANDA-FOIX • JOSE MANUEL CATALA-CIVERA

B2I-P-TU-PS1-17 **Study of Electrical Fatigue Behavior of Li-doped K0.5N0.5NbO3**
Soodkhet Pojprapai / *Suranaree University of Technology*
CHUNMANUS UTHAISAR

B2I-P-TU-PS1-18 **TiO2 and SnO2 Pre formed Nanoparticles as Building Blocks to Tailoring of Heterostructures: Growth Mechanism and Kinetic Model.**
Vagner de Mendonça / *Universidade Federal de São Carlos*
CAUE RIBEIRO

B2I-P-TU-PS1-19 **Physical, chemical and microsctructural characterization of phyllite clays and their composites with improved mechanical properties**
M Cano / *Dpto. Ingenieria Rural Universidad de Almeria*

B2I-P-TU-PS1-20 **Structure and properties of alumina ceramics from nano-and-micro-powders**
Tatyana Ulyanova / *Institute of General and Inorganic Chemistry of NAS of Belarus*
LUYDMILA TITOVA • ALEXANDR SEVCHENOK • LUYDMILA KULBITSKAJA • MICHAEL STEPKIN

B2I-P-TU-PS1-21 **Fabrication of mullite ceramics and mullite-based composite materials from kaolinite and aluminium metal wastes**
José Pascual-Cosp / *Unidad Asociada AI CSIC-ICMS Universidad de Málaga*
PEDRO JOSÉ SÁNCHEZ-SOTO

B2I-P-TU-PS1-22 **PERFORMANCE CHARACTERISTICS OF CEMENT PASTE WITH WASTE GLASS**
Patricija Kara / *Riga Technical University*

B2I-P-TU-PS1-23 **Chromium alloyed MoSi2-composite**
Erik Ström / *Sandvik Heating Technology*
QIN LU • ANDERS MAGNUSSON

B2I-P-TU-PS1-24 **Ceramics mechanical properties dependence on aluminium oxide particle size**
Monin Alexey / *Saint Petersburg State University*
ELENA ZEMTSOVA • VLADIMIR SMIRNOV

B2I-P-TU-PS1-25 **Preparation, microstructure and dielectric properties of BaTi1-xSnxO3 ceramics derived from nanopowders prerared via Pechini method**
Adelina Carmen Ianculescu / *"Politehnica" University of Bucharest, Faculty of Applied Chemistry and Materials Science, Bucharest, Romania*
CATALINA VASILESCU • DANIELA BERGER • CRISTIAN MATEI • NADEJDA HORCHIDAN • LILIANA MITOSERIU

B2I-P-TU-PS1-26 **Processing thin tri-layer, YSZ and CGO based ceramic materials for SOFC and IT-SOFC applications using tape-casting**
Gloria Begoña Sánchez Bravo / *Universidad de Castilla- Macha.Instituto de Energias Renovables*
JOSÉ MANUEL VIOLERO LARA • MARÍA GALVEZ SÁNCHEZ • JESÚS CANALES VÁZQUEZ

B2I-P-TU-PS1-27 **Addition of bottom ash from biomass plant in silico-calcareous pieces for use as construction material with thermal insulating properties**
Bartolomé Carrasco Hurtado / *Escuela Politécnica Superior de Linares (Universidad de Jaén)*
NICOLÁS CRUZ PÉREZ • JULIO TERRADOS CEPEDA • FRANCISCO ANTONIO CORPAS IGLESIAS • LUIS PÉREZ VILLAREJO

B2I-P-TU-PS1-28 **Acid leaching method for impurities removal from silica intended for high purity silica glass**
Jong Ho Kim / *Research Institute of Indutrial Science and Technology*

B2I-P-TU-PS1-29 **Characterization of reinforced cement samples containing residues from granite processing**
Lorena Freire / *University of Vigo*
BELÉN DÍAZ • CRISTIAN GONZÁLEZ • ALBERTO LÓPEZ LÓPEZ • XOSÉ RAMÓN NÓVOA • PAULA PRADO

B2I-P-TU-PS1-30 **Magnesium by-products lightweight aggregates obtaining to formulate passive fire protection mortars**
Josep Maria Chimenos / *University of Barcelona*
DÍDAC SALVADÓ • JOAN FORMOSA • RICARDO DEL VALLE-ZERMEÑO

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AREA B / STRUCTURAL MATERIALS

B3 / ADVANCED POLYMERS

B3I / Biobased Polymers, Composites and Nanomaterials

B3I-P-TU-PS1-1 **Polymer Nanocomposites using Alumina as Reinforcement**
Deesy Pinto / *University of Coimbra, Faculty of Sciences and Technology, Coimbra, Portugal.*
LUÍS BERNARDO • ANA AMARO • SÉRGIO LOPES

B3I-P-TU-PS1-2 **Structure and properties of sprayed polyurethane coatings from rapeseed oil polyols**
Uldis Stirna / *Polymer laboratory, Latvian State Institute of Wood Chemistry*
ANDA FRIDRIHSONE • VLADIMIR YAKUSHIN • BRIGITA LAZDINA

B3I-P-TU-PS1-3 **Polymer Nanocomposites using Titanium as Reinforcement**
Deesy Pinto / *University of Coimbra, Faculty of Sciences and Technology,Portugal.*
LUÍS BERNARDO • ANA AMARO • SÉRGIO LOPES

B3I-P-TU-PS1-4 **Revalorization of coastal algae wastes in textile nonwoven industry with applications in building noise isolation**
Eduardo Fages / *Aitex*
KORINNA MOLLÁ • LUIGI TORRE • JOSÉ KENNY

B3I-P-TU-PS1-5 **Mechanical behaviour evaluation of biocomposites reinforced with natural fibers and different treatments**
Inma Roig / *AIMPLAS, Technological Institute of Plastics*
NEUS SORIANO • CONCHA SANZ • MALGORZATA ZIMNIEWSKA

B3I-P-TU-PS1-6 **Feldspathoids (ZO4) Synthesis Under Low-Temperature Ecoefficient Process**
Ivelisse Jiménez / *Instituto Ciencias de La Construcción "Eduardo Torroja". Consejo Superior de Investigaciones Científicas.*
GLORIA PÉREZ • DAVID VELASCO • ENRIQUE FUENTES • ANA GUERRERO

B3I-P-TU-PS1-7 **Injection-molded bioplastic materials from albumen and soy protein**
Lucia Fernandez-Espada Ruiz / *Universidad de Sevilla*
MANUEL FÉLIX • ALBERTO ROMERO • ANTONIO GUERRERO • MANUELA RUÍZ-DOMÍNGUEZ

B3I-P-TU-PS1-8 **Influence of the presence of bicarbonate on the physical and thermal mechanical properties of soy-based plastics processed through injection moulding**
Lucia Fernandez-Espada Ruiz / *Universidad de Sevilla*
CARLOS BENGOECHEA • Mª LUISA LÓPEZ-CASTEJÓN • JOSE MANUEL AGUILAR • FELIPE CORDOBÉS

B3I-P-TU-PS1-9 **Spectroscopic Studies of the Cross-Linking Reaction Mechanism of Composition Poly(sodium acrylate)/dextrin**
Beata Grabowska / *AGH University of Science and Technology*
MACIEJ SITARZ • ARTUR BOBROWSKI • EWA OLEJNIK • GRZEGORZ GRABOWSKI

B3I-P-TU-PS1-10 **Bio-Based Polymer Nanocomposites Based on Layered Silicates Having A Reactive and Renewable Intercalant**
Sinan Sen / *Yalova University, Department of Polymer Engineering*
OZLEM ALBAYRAK • GOKHAN CAYLI • BULEND ORTAC

B3I-P-TU-PS1-11 **Physicochemical and antimicrobial properties of chitosan edible films as affected by rapeseed or fish oil addition.**
Angela Perdones / *Institute de Ingeniería de Alimentos Para El de sarollo - Universidad Politécnica de Valencia*
LAURA SÁNCHEZ-GONZÁLEZ • ELMIRA ARAB-TEHRANY • MARIA VARGAS • AMPARO CHIRALT

B3I-P-TU-PS1-12 **Mechanical, barrier and optical properties of pea starch-chitosan edible films containing cinnamon leaf essential oil and oleic acid.**
Angela Perdones / *Institute de Ingeniería de Alimentos Para El de sarollo - Universidad Politécnica de Valencia*
MARIA VARGAS • LORENA ATARÉS • AMPARO CHIRALT

B3I-P-TU-PS1-13 **Effects of curing conditions and silica fume content on the hydration degree of vegetable fiber reinforced cement composites**
Claramunt Josep / *Universitat Politècnica de Catalunya*
ARDANUY MÒNICA • FERNÁNDEZ-CARRASCO LUCIA

B3I-P-TU-PS1-14 **Mechanical Properties of a Sandy Soil Reinforced with Treated Sisal Fibers**
Gislene Santiago / *Instituto Federal de Minas Gerais - IFMG*
VAGNER BOTARO • NILO CONSOLI

B3I-P-TU-PS1-15 **Biodegradable electrospun polyurethane fibers**
Laura Peponi / *Ictp - Csic*
ALICIA MÚJICA-GARCÍA • IVAN NAVARRO-BAENA • JOSÉ M. KENNY

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AREA B / STRUCTURAL MATERIALS

B3 / ADVANCED POLYMERS

B3II / Fire retardant Polymers, Composites and Nanocomposites

B3II-P-TU-PS1-1 **MgAl-LDH based EPDM Composites and their thermal and fire properties**
Pengcheng Zhao / *Technical University Dresden*
DE-YI WANG • ANDREAS LEUTERITZ • UDO WAGENKNECHT • GERT HEINRICH

B3II-P-TU-PS1-2 **Spherical Activated Carbon from Alkali Lignin - a Potential Lignin-based Fire Retardant**
ShouXin Liu / *Northeast Forestry University*
KE LI

B3II-P-TU-PS1-3 **Preparation and Properties of Hierarchical Porous Carbon Based Composite Material Containing Fe**
Pan Yetang / *Harbin Institute of Technology*
LIN KAIFENG

B3II-P-TU-PS1-4 **Novel layered double hydroxide (LDH) based epoxy nanocomposites and their flammability.**
José Ignacio Núñez Peñas / *IMDEA Materials*
NIAN-JUN KANG • DE -YI WANG

B3II-P-TU-PS1-5 **Novel silicone aliphatic amine curing agent for epoxy resin: 1,3-bis(2-aminoethylaminomethyl) tetramethyldisiloxane: Non-isothermal cure and thermal decomposition property**
Cheng Li / *Zhejiang UNIV*
ZHIYANG BU • HONG FAN • MINGXIN YU • BOGENG LI

B3II-P-TU-PS1-6 **Fire flame retardant properties of rigid polyurethane foam nanocomposites**
Xiaomin Zhao / *Madrid Institute for Advanced Studies of Materials (IMDEA)*
EHSAN KALALI • DE -YI WANG

B3II-P-TU-PS1-7 **Effect of UV irradiation on PVC/TiO2 nanocomposites** **Ifigenia**
Grigoriadou Aristotle / *University of Thessaloniki*
KONSTANTINOS PARASKEVOPOULOS • DIMITRIOS BIKIARIS

B3II-P-TU-PS1-8 **An improved process for the surface modification of Al2O3 and SiO2 nanoparticles**
Sébastien Livi / *INSA de Lyon, Ingénierie de s Matériaux Polymères (IMP)*
EMMANUEL GIANNELIS • JEAN-FRANÇOIS GÉRARD • JANNICK DUCHET-RUMEAU

B3II-P-TU-PS1-9 **Flame retardancy of Carbon Fabric Reinforced Epoxy Composite**
Kang Nian-Jun / *Madrid Institute for Advanced Studies of Materials (IMDEA)*

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AREA B / STRUCTURAL MATERIALS

B3 / ADVANCED POLYMERS

B3III / Hybrid Polymer Nanocomposites

B3III-P-TU-PS1-1 **Superhydrophobic Coatings using fluropolymers, functionalized pigment and nanoparticle addition**
Anand Khanna / *IIT Bombay*
RUCHI GROVER • RAJESH KUMAR

B3III-P-TU-PS1-2 **Polymerizable de ep-Eutectic Solvents as a green tool for the synthesis of functional polymeric materials**
Josué D. Mota-Morales / *Cinvestav*
MARÍA C. GUTIÉRREZ • M. LUISA FERRER • ISAAC C. SANCHEZ • MAURICIO TERRONES • GABRIEL LUNA-BÁRCENAS • FRANCISCO DEL MONTE

B3III-P-TU-PS1-3 **Rare-Earths Orthoniobate nanopowders supported by an organic polymer thin film**
Cláudio Nico / *Department of Physics & I3N, University of Aveiro*
JÚLIO C. GOÉS • SONIA D. FIGUEIRÓ • TERESA MONTEIRO • MANUEL PEDRO FERNANDES GRAÇA

B3III-P-TU-PS1-4 **Processing and Characterization of Multifunctional Polyamide-11/Halloysites Nanocomposites**
Kalappa Prashantha / *Mines Douai*
MARIE-FRANCE LACRAMPE • PATRICIA KRAWCZAK

B3III-P-TU-PS1-5 **Morphological and melt flow characterization of thermoplastic starch/poly(lactic acid) hybrid blends**
Cristina Andrade / *Instituto de Macromoléculas, Universidade Federal Do Rio de Janeiro*
WILLIAN FERREIRA

B3III-P-TU-PS1-6 **Microbial growth inhibition by MgO-based nanoparticle interaction**
Laura de Matteis / *Instituto de Nanociencia de Aragon, Universidad de Zaragoza*
VALERIA GRAZU' • CLARA MARQUINA • M.RICARDO IBARRA • JESUS M. DE LA FUENTE

B3III-P-TU-PS1-7 **Self-healing silicone and polyurethane elastomers crosslinked with silver nanoparticles**
Ibon Odriozola / *Ik4-Cidetec*
ALAITZ REKONDO • ROBERTO MARTÍN • ALAITZ RUIZ DE LUZURIAGA • GERMÁN CABAÑERO

B3III-P-TU-PS1-8 **Star-epoxy mesogen to design new thermoset architecture**
Jean-Mathieu Pin / *Laboratoire de Physique de La Matière Condensée*
ALICE MIJA • NICOLAS SBIRRAZZUOLI

B3III-P-TU-PS1-9 **Hydroxylated oligoamides-TiO2 nanocomposites in wood conservation**
Rosangela Oliva / *Università de gli Studi Firenze*
ANTONELLA SALVINI • MARINO MALAVOLTI • BRUNELLA PERITO • GIUSEPPINA DI GIULIO • MARCO FIORAVANTI

B3III-P-TU-PS1-10 **Polymerizable deep-eutectic solvents containing drugs produce drug delivery systems**
Josué D. Mota-Morales / *Cinvestav México*
REGINA SANCHEZ • MARIA C. GUTIERREZ • M. LUISA FERRE • CARLOS A, MARTINEZ-PEREZ • PERLA E. GARCÍA-CASILLAS • JOHN A. POJMAN • GARBRIEL LUNA-BARCENAS • FRANCISCO DEL MONTE

B3III-P-TU-PS1-11 **Performance of the asphalt binder modified with polyphosphoric acid (PPA) and the effects of the addition of cashew nut shell liquid (CNSL)**
Sandra Soares / *Federal University of Ceará*
JORGE SOARES • NÁGILA RICARDO • PAULO FERNANDES • SUELLY BARROSO

B3III-P-TU-PS1-12 **Polyurethane/POSS hybrid materials - research perspectives.**
Edyta Hebda / *Cracow University of Technology, Department of Chemistry and Technology of Polymers*
MALGORZATA JANCIA • SLAWOMIR MICHALOWSKI • KRZYSZTOF PIELICHOWSKI

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AREA B / STRUCTURAL MATERIALS

B4 / COMPOSITE, HYBRID AND MULTI-SCALED STRUCTURAL MATERIALS

B4III / Composite Materials and Systems for High Temperature Use

B4III-P-TU-PS1-1 **Microwave sintering of TiC, SiC and emery powder reinforced PM 316L composites**
Onur Ertugrul / *Dokuz Eylul University, Dept. of Metallurgical and Materials Engineering*
KAZIM ONEL • MONIKA WILLERT-PORADA

B4III-P-TU-PS1-2 **Multilayered hard metal composites conformed by conventional powder metallurgical methods**
José Manuel Córdoba / *Instituto de Ciencia de Los Materiales de Sevilla (ICMS-CSIC)*
ERNESTO CHICARDI • MARÍA JESÚS SAYAGUÉS • YADIR TORRES • FRANCISCO JOSÉ GOTOR

B4III-P-TU-PS1-3 **Stability of Nd oxide in molten Mg during selective extraction reaction**
Yonghwan Kim / *Rare Metal R&D Group, Korea Institute of Industrial Technology,(KITECH)*
HYUNWOONG NA • HANSHIN CHOI

B4III-P-TU-PS1-4 **Hydrothermal synthesis of lightweight calcium silicate composites from perlite waste**
Agnieszka Ró¿ycka / *University of Science and Technology*
WALDEMAR PICHÓR • JAN DE JA • MAKSYMILIAN FR±C

B4III-P-TU-PS1-5 **Scaleable Microwave Curing System of Long Fiber Reinforced Composites for Resin Transfer Moulding**
Inma Roig / *AIMPLAS, Technological Institute of Plastics*
MATTHIAS GRAF • BELEN MONJE • OLIVIA MENES • RALF ESCHBACH

B4III-P-TU-PS1-6 **Effects of carbon addition on the mechanical properties of (TixTa1-x)(CyN1-y)-Co cermets**
Ernesto Chicardi / *Instituto de Ciencia de Materiales de Sevilla (Us-Csic)*
JOSÉ MANUEL CÓRDOBA • YADIR TORRES • MARÍA JESÚS SAYAGUÉS • FRANCISCO JOSÉ GOTOR

B4III-P-TU-PS1-7 **Research on the gases generation during thermal decomposition of alkyd resins**
Mariusz Holtzer / *AGH University of Science and Technology*
SYLWIA ¯YMANKOWSKA-KUMON • RAFAL DAÑKO • ARTUR BOBROWSKI • MICHAL KUBECKI

B4III-P-TU-PS1-8 **Friction and wear of tin bronze-graphite composites and tin bronze-carbon glassy composites made by stir casting**
Szymon Malara / *Institute of Non-Ferrous Metals / Joanna Kulasa / Barbara Juszczyk / Witold Malec*
BEATA CWOLEK • £UKASZ WIERZBICKI

B4III-P-TU-PS1-9 **High temperature mechanical behaviour of cryomilled magnesium matrix composites.**
Gerardo Garces / *Cenim-Csic*
SANDRA CABEZA • PABLO PÉREZ • ESTHER ESCUDERO • PALOMA ADEVA

B4III-P-TU-PS1-10 **Thermogravimetric study of the composite type aluminum alloy A359-SiC after multiple melting processes**
Ewa Rostek / *Motor Transport Institute*
ADAM KLASIK

B4III-P-TU-PS1-11 **Mechanical and development properties of copper base composite materials strengthened with alumina fibres**
Jacek Kaczmar / *Politechnika Wroclawska*
KAZIMIERZ GRANAT • KRZYSZTOF NAPLOCHA • JERZY MORGIEL

B4III-P-TU-PS1-12 **Biomorphic SiC from ligno-cellulosic materials: Sawdust**
Mario Raul Caccia / *Alicante University*
JAVIER NARCISO

B4III-P-TU-PS1-13 **Study of Tribotechnical Properties of Cf/SiC-composites Produced by a Liquid Silicon Infiltration Process in Combination with Riders from Metalloceramics**
Victor Kulik / *Baltic State Technical University "VOENMEH"*
ALEXEY NILOV • ALEXEY KULIK • SEMEN DE MIN

B4III-P-TU-PS1-14 **Numerical simulation of Thermal-Gradient Chemical Vapour Infiltration of Multidirectional Fibrous Preform by SiC-matrix**
Alexey Kulik / *Baltic State Technical University "VOENMEH"*
VICTOR KULIK • SEMEN DE MIN

B4III-P-TU-PS1-15 **Effect of copper infiltration on microstructures in HSS based composites**
Marcin Madej / *Faculty of Metals Engineering and Industrial Computer Science, AGH*

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AREA C / PROCESSING

C1 / SOLIDIFICATION AND SOLID STATE TRANSFORMATIONS

C1I / Solidification

C1I-P-TU-PS1-1 **3D granular modelling of semi-solid deformation and hot tearing in Al-Cu alloys: comparison with in-situ X-ray tomographic imaging**
Meisam Sistaninia / *Ecole Polytechnique Federale Lausanne*
JEAN-MARIE DREZET• SOFIANE TERZY • ANDRE PHILLION • MICHEL RAPPAZ

C1I-P-TU-PS1-2 **Mold filling research of a cast iron plate under lost foam casting**
Jinwu Kang / *School of Materials Science and Engineering, Tsinghua University*
XIAOKUN HAO • GANG NIE • HAIMIN LONG • TIANJIAO WANG • YONGYI HU • TIANYOU HUANG

C1I-P-TU-PS1-3 **Preparation of W-Cu composites by combustion synthesis and melt-infiltration in ultrahigh-gravity field**
Pei Zhao / *Max-Planck-Institute for Plasma Physics*
JIANGTAO LI • JEONG-HA YOU

C1I-P-TU-PS1-4 **Directional solidification of Al-Cu-Ag-Mg quaternary eutectic alloys**
Bin Zhou / *Department Metallurgy and Materials Engineering (MTM), KU Leuven*
LUDO FROYEN

C1I-P-TU-PS1-5 **Crystallography of growth of Zn16Ti precipitates in eutectic single crystals of Zn-Cu-Ti alloy**
Grzegorz Boczkal / *AGH University of Science and Technology*
MALGORZATA PEREK-NOWAK

C1I-P-TU-PS1-6 **Determination of the nucleation rate of liquid droplets in a solid solution**
Stephanie Fischer / *Friedrich Schiller University*
MARKUS RETTENMAYR

C1I-P-TU-PS1-7 **Measurement of nucleation rates using fast scanning calorimetry on samples prepared by the Droplet Emulsion Technique (DET)**
Christian Simon / *Institute of Material Physics, Westfälische Wilhelms-Universität Münster*
JOACHIM BOKELOH • GERHARD WILDE

C1I-P-TU-PS1-8 **Impact of the quality of moulding sand with furan resin on the formation of the skin layer of ductile iron castings**
Marcin Górny / *AGH University of Science and Technology, Faculty of Foundry Engineering / Mariusz Holtzer*
RAFAL DAÑKO • SYLWIA ¯YMANKOWSKA-KUMON

C1I-P-TU-PS1-9 **Columnar dendritic growth and columnar to equiaxed transition in peritectic TiAl based alloys**
Juraj Lapin / *Slovak Academy of Sciences, Institute of Materials and Machine Mechanics*
ZUZANA GABALCOVÁ • ULRIKE HECHT • ROBIN MOONEY • SHAUN MCFADDEN

C1I-P-TU-PS1-10 **Influence of withdrawal rate on the microstructure of CMSX-6 during downward directional solidification process**
Fu Wang / *Giesserei Institut , RWTH Aachen*
DEXIN MA • BOGER SAMUEL • JIANPING HONG • ANDREAS BÜHRIG-POLACZEK

C1I-P-TU-PS1-11 **Modeling of liquid film migration: comparison of analytic and numerical solutions**
Peter Galenko / *Friedrich-Schiller-Universität Jena*
KLEMES REUTER • DMITRII TEMKIN • MARKUS RETTENMAYR

C1I-P-TU-PS1-12 **A Back Diffusion Model for Microsegregation**
Altan Turkel' / *University of Marmara*

C1I-P-TU-PS1-13 **Investigation on the fabrication of W-Cu composites by combustion synthesis and melt-infiltration in ultrahigh-gravity field**
Pei Zhao / *Max-Planck-Institute for Plasma Physics*
JIANGTAO LI • JEONG-HA YOU

C1I-P-TU-PS1-14 **Effects of processing on electrical and magnetic properties of Mg- and Al- substituted magnetite.**
Ferreira Nuno / *Ciceco*
ANDREI KOVALEVSKY • FLORINDA COSTA • JORGE FRADE

C1I-P-TU-PS1-15 **LFZ as a fast method to screen the feasibility of Fe pyroelectrolysis from molten oxides**
Ferreira Nuno / *Ciceco*
ANDREI KOVALEVSKY • FLORINDA COSTA • JORGE FRADE

C1I-P-TU-PS1-16 **Certified reference materials for new ecological alloys based on Sn**
£ukasz Wierzbicki / *Institute of Non-Ferrous Metals*
BEATA CWOLEK • EWA MÜLLER • BARBARA BOLIBRZUCH • JOANNA KULASA • SZYMON MALARA • BARBARA JUSZCZYK • WITOLD MALEC • JUSTYNA GALECZKA

C1I-P-TU-PS1-17 **Morphological evolution of of core-shell spherical particles**
Jérôme Colin / *Institut Pprime*
JEAN GRILHÉ

C1I-P-TU-PS1-18 **Directional solidification and properties of pure and Nd3+ doped (MgxCa1-x)3Al2Si3O12 glasses**
Daniel Sola / *Centro de Fisica de Materiales*
LUIS ORTEGA SANMARTIN • JON MARTÍNEZ DE MENDIBIL • GINÉS LIFANTE • JOSE IGNACIO PEÑA

C1I-P-TU-PS1-19 **Dendritic and cellular patterns in peritectic solidification**
Claas Hüter / *MPIE Düsseldorf*
GUILLAUME BOUSSINOT • EFIM A. BRENER • ROBERT SPATSCHEK

C1I-P-TU-PS1-21 **Analysis of Melt Puddle Evolution and Ribbon Formation during Planar Flow Melt Spinning Process**
Sohrabi Sajad / *Iran University of Science and Technology (IUST)*
MOSTAFA VANDA • REZA GHOLAMIPOUR • ALI BEITOLLAHI

C1I-P-TU-PS1-22 **Al segregations in eutectic Si phase of Al-10 wt.% Si alloy**
Nelia Wanderka / *Helmholtz-Zentrum Berlin Für Materialien Und Energie GmbH*
MELANIE TIMPEL • RALF SCHLESIGER • GUIDO SCHMITZ • JOHN BANHART

C1I-P-TU-PS1-23 **Characterization of Cu-based shape memory alloy produced by rapid solidification**
Eric Marchezini Mazzer / *Federal University of São Carlos*
REGIS CAVA • CLAUDEMIRO BOLFARINI • CLAUDIO SHYINTI KIMINAMI

C1I-P-TU-PS1-24 **Characterisation of FeVCrC hardfacing microstructure and wear behaviour with respect to processing heat management**
Christian Katsich / *AC²T Research GmbH*
ARKADI ZIKIN • EWALD BADISCH • MARTIN KIRCHGASSNER

C1I-P-TU-PS1-25 **In situ X-ray diffraction on levitated Ti-Fe and Ti-Fe-Nb alloys**
Olga Shuleshova / *Institute for Complex Materials, IFW Dresden, Germany*
IVAN KABAN • NORBERT MATTERN • JÜRGEN ECKERT • DIRK HOLLAND-MORITZ • JAN GEGNER • RAFAEL KOBOLD • JOZEF BEDNARCIK

C1I-P-TU-PS1-26 **Experimental Analysis of Microstructure Evolution of a Hypoeutectic Al-Mg Alloy during Transient Directional Solidification**
Crystopher Brito / *University of Campinas*
MARCELINO DIAS • FELIPE BERTELLI • JOSÉ EDUARDO SPINELLI • AMAURI GARCIA

C1I-P-TU-PS1-27 **Transient Directional Solidification of a Hypoperitectic Zn-Ag Alloy**
Marcelino Dias / *University of Campinas*
CRYSTOPHER BRITO • AMAURI GARCIA

C1I-P-TU-PS1-28 **Development of new UV lasers for customization at industrial level through high quality marking on different materials**
Andrés Escartín / *BSH Home Appliances Spain (BSHE)*
V.GOTOR • F.J. ESTER

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AREA C / PROCESSING

C1 / SOLIDIFICATION AND SOLID STATE TRANSFORMATIONS

C1II / Solid State Transformations

C1II-P-TU-PS1-1
A thermal analysis of non-isothermal precipitation occurring in an Al-Cu-Mg-Si alloy
Abdelali Hayoune / *Nuclear Research Centre of Birine*

C1II-P-TU-PS1-2
In situ HT-ESEM observation of the first stage sintering of CeO2 nanospheres
Nicolas Clavier / *ICSM- UMR5257 CEA/CNRS/UM2/ENSCM / Galy Ingrid N'Kou Bouala*
RENAUD PODOR • JOHANN RAVAUX • NICOLAS DACHEUX

C1II-P-TU-PS1-3
Investigation of Microstructure and Mechanical Property Evolution Processed by Half Channel Angular Extrusion Process with Extruded AZ61 Alloy
Jonghun Yoon / *Korea Institute of Material Science*
KYUNGJIN KIM

C1II-P-TU-PS1-4
Laser surface modification of Ti-30Nb-2Sn alloy
Juan José Candel / *Instituto Tecnologia Materiales*
PATRICIA FRANCONETTI • JOSE MANUEL AMADO • EMILIO RAYÓN • VICENTE AMIGÓ

C1II-P-TU-PS1-5
Microstructure Evolution during Dynamic Recrystallization of Austenitic 347H Steel
Ho Won Lee / *Korea Institute of Materials Science*
SEONG-HOON KANG • YOUNGSEON LEE

C1II-P-TU-PS1-6
Evolution of the multistage martensitic transformation of TiNi alloy due to partial thermal cycling
A. López-Echarri / *de partemento de Física de la Materia Condensada. Facultad de Ciencia y Tecnología. UPV/EHU*
I. RUIZ-LARREA • T. BRECZEWKI • G.A. LÓPEZ • I. LÓPEZ-FERREÑO • M.L. NÓ • J. SAN JUAN

C1II-P-TU-PS1-7
Structural changes and crystallization of nanostructured ZnO during thermal decomposition of Zn-based precursors.
Leona Cristina Nistor / *National Institute of Materials Physics*
VASILE SERGIU NISTOR • DANIELA GHICA • MARIANA STEFAN • IOANA VLAICU

C1II-P-TU-PS1-8
The influence of minor alloying elements on the formation of the T1 phase in Al-Cu-Li(-Mg-Ag-Zn) alloys
Eva Gumbmann / *SIMaP, Grenoble INP – CNRS – UJF*
FRÉDÉRIC DE GEUSER • WILLIAMS LEFEBVRE • CHRISTOPHE SIGLI • ALEXIS DE SCHAMPS

C1II-P-TU-PS1-9
Effect of quenching temperature on shape memory properties of a Cu-Al-Mn shape memory alloy
Vedamanikam Sampath / *Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras Chennai, India*
PRATHAP CHANDRAN

C1II-P-TU-PS1-10
Influence of quaternary addition (1wt. %) of Co on the shape memory characteristics of a Cu-12.5 wt. % Al-3 wt. % Fe shape memory alloy
V Sampath / *Department of Metallurgical and Materials Engg., Indian Institute of Technology Madras*
RAJU T N

C1II-P-TU-PS1-11
Computer simulation of recrystallization
Alfonso Garcia / *E.U. Arquitectura Técnica (U.P.M.), Sensors and Actuators Group / Carlos Moron*
ENRIQUE TREMPS • PUERTO RAMIREZ

C1II-P-TU-PS1-12
Autenite-martensite transformation in magnetic shape memory alloys
J.J. Suñol / *University of Girona / A Carrillo / A de Itell / L Escoda*
B HERNANDO

C1II-P-TU-PS1-13
Study of twin evolution in an AISI316L stainless steel under thermomechanical processing
Hellal Fatah / *Ecole Nationale Polytechnique*
HACHEMI HANIA

C1II-P-TU-PS1-14
Evolution of precipitation state and strength in the heat affected zone of a 6061 welded aluminium alloy
Michel Perez / *Univ. Lyon - MATEIS - INSA - FRANCE*
DIDIER BARDER • DANIEL NELIAS • DANIEL MAISONNETTE • CHRISTOPHER HUTCHINSON • ALEXIS DE SCHAMPS • THIBAULT CHAISE • FLORENT BOURLIER • JÉRÔME GARNIER

C1II-P-TU-PS1-15
A self-consistent polycrystalline multivariant modelling of shape memory alloys for prediction of transformation yield surface
Anne Maynadier / *FEMT0-ST, Département de Mécanique Appliquée*
KARINE LAVERNHE-TAILLARD • OLIVIER HUBERT

C1II-P-TU-PS1-16
The early stages of thin film solid state reaction of Cu/a-Si studied by APT and SNMS
Zoltán Balogh / *University of Münster, Institute for Material Physics*
MOHAMMED IBRAHIM • GUIDO SCHMITZ • BENCE PARDITKA • ZOLTÁN ERDÉLYI

C1II-P-TU-PS1-17 **THERMAL CHARACTERIZATION OF Ni-Ti-Cu ALLOY WITH SHAPE MEMORY EFFECT**
Walman Benicio de Castro / *Universidade Federal de Campina Grande - UFCG*
CARLOS JOSÉ DE ARAÚJO • GEORGE CARLOS ANSELMO

C1II-P-TU-PS1-18 **An extension of the theoretical method developed (TMD) to isothermal glass-crystal transformations. Application to the crystallization of Sb0.16As0.22Se0.62 glassy semiconductor.**
R. González-Palma / *de partamento de Física de La Materia Condensada, Facultad de Ciencias,Universidad de Cádiz*
J.L. CÁRDENAS-LEAL • J. VÁZQUEZ • D. GARCÍA-G. BARREDA • P.L. LÓPEZ-ALEMANY • P. VILLARES

C1II-P-TU-PS1-19 **Effect of shot peening on a metastable austenitic stainless steel**
Gemma Fargas / *Ciefma-Upc*
JOAN JOSEP ROA • EMILIO JIMENEZ-PIQUE • ANTONIO MATEO

C1II-P-TU-PS1-20 **Influence of 0.04%Fe on the precipitation of supersaturated Al-3%Cu-1%Mg alloy**
Mouhyddine Kadi-Hanifi / *Usthb*
ZOUBIR CHAIEB • OUARDA OULDMOHAMED • AZZEDDINE RAHO

C1II-P-TU-PS1-21 **Phase formation of colloidal anatase TiO2 nanoparticles from the hydrothermal treatment of peroxytitanium complex**
Vagner de Mendonça / *Universidade Federal de São Carlos*
WALDIR AVANSI • CAUE RIBEIRO

C1II-P-TU-PS1-22 **Effect of the impingement factor on the kinetics model of isothermal transformation of ferrite in duplex stainless steel**
Bouabdallah Mabrouk / *Laboratoire de Génie Sismique et Dynamique des Structures (LGSDS), Ecole Nationale Polytechnique*
LEMRINI LEMRINI • BADJI RIAD • BACROIX BRIGITTE

C1II-P-TU-PS1-23 **Behavior of NiTi wires for dampers and actuators in extreme conditions**
Javier Fernandez / *Thermal Spray Center (CPT). Universty of Barcelona*
ANTONIO ISALGUÉ • CARLOTA AUGUET • RAMÓN GRAU • EDUARD LÓPEZ • JOSÉ MARÍA GUILEMANY

C1II-P-TU-PS1-24 **Investigation of spinodal decomposition of Fe-Cr alloys in thin films resolved by atom probe tomography**
Yann Colignon / *Aix-Marseille Université, IM2NP-CNRS, Faculté de saint Jérôme, France*
DOMINIQUE MANGELINCK • KHALID HOUMMADA • MYRIAM DUMONT • PHILIPPE MAUGIS • ORIANE SENNINGER • FRÉDÉRIC SOISSON • MAYLISE NASTAR

C1II-P-TU-PS1-25 **Effect of cooling conditions on the mechanical properties of microalloyed steel 38MnVSi5**
Mihaela Taca / *S.C.Metav-Cercetare de zvoltare S.A.*
NICOLAE DE NGHEL • MIROSLAV PAPEZIK • DANA DAISA

C1II-P-TU-PS1-26 **Residual stresses in continuously cast steel slabs**
Michael Schöbel / *TU München*
GUILLERMO REQUENA

C1II-P-TU-PS1-27 **The Study of Phase Transformations in Ti Alloys by Electrical Resistivity and Differential Scanning Calorimetry Measurement**
Pavel Zhanal / *Faculty of Mathematics and Physics of the Charles University in Prague, Department of Physics of Materials, Prague, Czech Republic*
PETR HARCUBA • MICHAL HÁJEK • JANA ŠMILAUEROVÁ

C1II-P-TU-PS1-28 **Precipitation Processes in Cu-bearing GOES**
Vlastimil Vodárek / *VSB-TU Ostrava*
JAN HOLEŠINSKÝ • ŠÁRKA MIKLUŠOVÁ • ANASTASIA MASLOVA • ONDØEJ ÁÈEK

C1II-P-TU-PS1-29 **How the Metallurgical State of Austenite affects the quenched Microstructure/Microtexture in Low Carbon Steels**
Elodie Boucard / *LEM3 (Laboratoire d'Étude des Microstructures et de Mécanique des Matériaux), Université de Lorraine, France*
NATHALIE GEY • DAVID BARBIER • LIONEL GERMAIN • ALBERT TIDU

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AREA C / PROCESSING
C2 / JOINING AND INTERFACE DE SIGN

C2II / Interface de sign

C2II-P-TU-PS1-1 **Surface analysis of metal nanoparticles by Knudsen effusion mass spectrometry**
Pavel Broz / *Masaryk University, Faculty of Science, Department of Chemistry*
JIRI SOPOUSEK • JAN VRESTAL • JIRI PINKAS • ALES STYSKALIK • DAVID SKODA • JIRI BURSIK • VIT VYKOUKAL

C2II-P-TU-PS1-3 **Characterization of Interfaces and Corrosion Resistance of Selected Sn-Zn/Ni Couples**
Krystyna Pietrzak / *Motor Transport Institute*
MARCIN GROBELNY • KATARZYNA MAKOWSKA • NATALIA SOBCZAK • DARIUSZ RUDNIK • EDMUND SIENICKI • ARTUR KUDYBA • ANDRZEJ WOJCIECHOWSKI

C2II-P-TU-PS1-4 **Interface compositional modification by Ar+ irradiation in GaN/AlN quantum structures**
Daniel Carvalho / *University of Cádiz*
T BEN • F.M MORALES • R GARCÍA • K LORENZ • A REDONDO-CUBERO • E WENDLER • V FELLMANN • B DAUDIN

C2II-P-TU-PS1-5 **Microstructure of a high porosity aluminium sintered in nitrogen**
Tadeusz Pieczonka / *Cracow University of Technology*
JAN KAZIOR

C2II-P-TU-PS1-6 **Model to derive growth temperatures for metal nanowhisker synthesis in dependence of base pressure and substrate material**
Christian Kappel / *Max-Planck-Institute for Intelligent Systems*
GUNTHER RICHTER

C2II-P-TU-PS1-7 **Study of heat and etching treatments effects on the surface of Cu-OFE ultra-precision machined discs for CLIC Study**
Ana Teresa Perez Fontenla / *Cern*
GONZALO ARNAU IZQUIERDO • SAID ATIEH • AHMED CHERIF • DIDIER GLAUDE • NEREA MOURIZ • GERMANA RIDDONE • ANASTASIYA SOLODKO

C2II-P-TU-PS1-9 **Mechanical properties and microstructure of Al2O3/Al/Al2O3 joints with surface modification of alumina by thin layer of Ti- Nb**
Marzanna Ksiazek / *Foundry Research Institute, Cracow, Poland*

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AREA C / PROCESSING

C3 / NANO-POWDER AND SOLUTION ROUTES: SYNTHESIS TO MATERIALS

C3I / Nano-Powder de velopment by Advanced Techniques

C3I-P-TU-PS1-1 **Microwave-Hydrothermal Synthesis of Chemically-Substituted Metal Tungstates and Molybdates**
Anderson Dias / *Universidade Federal de Ouro Preto, de partamento de Quimica*
KISLA SIQUEIRA

C3I-P-TU-PS1-2 **Solvent-controlled synthesis and luminescent properties of uniform Eu:YVO4 nanophosphors with different morphologies.**
Nuria Nuñez / *Instituto de Ciencia de Materiales de Sevilla, CSIC-US.*
JAD SABEK • JORGE GARCIA-SEVILLANO • EUGENIO CANTELAR • ALBERTO ESCUDERO • MANUEL OCAÑA

C3I-P-TU-PS1-3 **Copper, palladium and platinum nanostructures with controlled morphologies via polyethyleneimine assisted chemical synthesis**
Stefanos Mourdikoudis / *de partamento de Quimica Fisica, Universidade de Vigo*
JORGE PEREZ-JUSTE • ISABEL PASTORIZA-SANTOS • LUIS M. LIZ-MARZAN

C3I-P-TU-PS1-4 **Aerosol processing of hierarchically organized TiO2 based nano-particles**
Ivan Dugandzic / *Institute of Technical Science of SASA*
DRAGANA JOVANOVIC • LIDIJA MANCIC • ZORAN SAPONJIC • JOVAN NEDELJKOVIC • OLIVERA MILOSEVIC

C3I-P-TU-PS1-5 **W-Ni bimetallic nano-particle by RF thermal plasma synthesis**
Hyunwoong Na / *Rare Metal R&D Group, Korea Institute of Industrial Technology,(KITECH)*
CHULWOONG HAN • YONGSOO CHO • HANSHIN CHOI

C3I-P-TU-PS1-6 **Characteristics of nickel nano-particles by vapor phase condensation synthesized nickel nano-particles**
Chulwoong Han / *Rare Metal R&D Group, Korea Institute of Industrial Technology,(KITECH)*
HYUNWOONG NA • YONGHWAN KIM • HANSHIN CHOI

C3I-P-TU-PS1-7 **COMPARISON OF TWO EASY METHODS TO SYNTHESIZE Al-DOPED TiO2 NANOPARTICLES WITH PHOTOELECTROCHEMICAL APPLICATIONS**
Desireé M. de Los Santos / *Universidad de Cadiz*
CONCHA FERNÁNDEZ-LORENZO • RODRIGO ALCÁNTARA • JAVIER NAVAS • TERESA AGUILAR • ANTONIO SÁNCHEZ-CORONILLA • DAVID ZORRILLA • JESÚS SÁNCHEZ-MARQUEZ • JOAQUÍN MARTÍN-CALLEJA

C3I-P-TU-PS1-8 **Electrodeposition and Nucleation of Copper on TiO2 (001)**
Victor Fuenzalida / *Universidad de Chile*
TOMAS VARGAS • MARCOS FLORES • IGNACIO OLAVARRIA

C3I-P-TU-PS1-9 **Synthesis of Cu-Ni-Al2O3 composites based on nitrate thermal decomposition followed by H2 reduction**
Eduardo de Albuquerque Brocchi / *PUC-Rio*
ROGERIO NAVARRO CORREIA DE SIQUEIRA • ISABEL RAMOS NAVARRO • RODRIGO FERNANDEZ MAGALHAES DE SOUZA

C3I-P-TU-PS1-10 **The Change of Alumina Crystal Structure by Means of Mechanical Activation**
Anja Terzic / *Institute for Materials Testing*
LJUBIŠA ANDRIC • LJUBICA PAVLOVIC • ZAGORKA ACIMOVI PAVLOVIC

C3I-P-TU-PS1-11 **In situ generation of Ag nanoparticles by photoreduction with TiO2 nanoparticles deposited onto cotton fabric**
Milica Milosevic / *Vinca Institute of Nuclear Sciences, University of Belgrade*
MARIJA RADOICIC • ZORAN SAPONJIC • DARKA MARKOVIC • JOVAN NEDELJKOVIC • MAJA RADETIC

C3I-P-TU-PS1-12 **Application of mechanical dispersion method in the synthesis of Co particles**
Young Do Kim / *Hanyang University*
SEOUNG YEUL KWAK • JIN WOO KIM • JONG MIN BYUN • HYUN SEON HONG

C3I-P-TU-PS1-13 **Optical characterization of Ce(1-x)CuxO2 nanoparticles synthesized via Pechini and microwave-assisted hydrothermal methods**
Vinícius Araújo / *Instituto de Física, Universidade de São Paulo, São Carlos – SP, Brasil.*
MAURICIO DE LIMA JR • ANDRES CANTARERO • ZORANA D. DOHCEVIC-MITROVIC • ZORAN POPOVIC • ELSON LONGO • MARIA BERNARDI

C3I-P-TU-PS1-14 **Growth of ZnO structures with different morphology by hexamethylenetetramine-hydrothermal Method**
Maria Eugenia Rabanal / *Universidad Carlos III de Madrid y IAAB.Leganés.Spain*
OLIVERA MILOSEVIC • LUZ GOMEZ-VILLALBA • GREGORIO FLORES • F. FLORES-GRACIA • R. MARTÍNEZ-MARTÍNEZ

C3I-P-TU-PS1-15 **Molybdenum carbides and silicon carbides simultaneously derived by sol-gel method. Synthesis and characterization.**
Marta Krawczyk / *West Pomeranian University of Technology In Szczecin*
ANNA BIEDUNKIEWICZ • PAWEL FIGIEL • URSZULA GABRIEL- PÓLROLNICZAK

C3I-P-TU-PS1-16 **Preparation, characterization and investigations of structural, magnetic and electrical properties of nano size nickel-zinc ferrite**
Zorica Lazarevic / *Institut of Physics*
CEDOMIR JOVALEKIC • ALEKSANDRA MILUTINOVIC • DALIBOR SEKULIC• NEBOJŠA ROMCEVIC

C3I-P-TU-PS1-17 **Investigation on Structure and Mechanical Properties of Samples Obtained from Arbofill by Injection Process Compared with Polyamide 6.6 Nature Reinforced with Glass Microsphere**
Dumitru Nedelcu / *Gheorghe Asachi Technical University of Lasi, Romania*
DANIEL MINDRU • IOAN CARCEA

C3I-P-TU-PS1-18 **Theoretical and experimental analysis of droplet-to-particle formation during aerosol processing of colloidal TiO2 nanoparticles**
Ivan Dugandzic / *Institute of Technical Science of SASA*
DRAGANA JOVANOVIC • LIDIJA MANCIC • ZORAN SAPONJIC • JOVAN NEDELJKOVIC • OLIVERA MILOSEVIC

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AREA C / PROCESSING

C4 / ADVANCED COATING AND SURFACE STRUCTURING

C4I / Protective Coatings and Thin Films

C4I-P-TU-PS1-1 **Characterization of Thermally Evaporated ZnTe Films Treated with AgNO3 Solution**
Siham Salim / *National Research Center, Electron Microscope and Thin Films Department, Physics Division*
ABD EL-RAHMAN SALEM • MASSARAT SEDDIK • HISHAM SALEH

C4I-P-TU-PS1-2 **Effect of heat treatment on the aluminum coating on steel industrial (E335)**
Ahnia Fatma / *Laboratoire de Technologie des Matériaux et de Génie des Procédés, Equipe Electrochimie et Corrosion, Faculté de la Technologie, Université A. Mira – Béjaia Algeria.*
KHELFAOUI YOUCEF • DE MRI BOUALEM • MIROUD DJAMEL

C4I-P-TU-PS1-3 **Spin-coated hydroxyapatite thin films on silica substrate: preparation and characterization**
Zivile Stankeviciute / *Faculty of Chemistry, Vilnius University, Lithuania*
MILDA MALAKAUSKAITE • EDITA GARSKAITE • ALDONA BEGANSKIENE • AIVARAS KAREIVA

C4I-P-TU-PS1-4 **A Path Towards a Better Characterisation of Thin Films: de pth Profile Compositional Analysis by Pulsed Glow Discharge - Time of Flight Mass Spectrometry**
Rosario Pereiro / *University of Oviedo*
AITOR ALVAREZ-TORAL • BEATRIZ FERNÁNDEZ • PASCAL SANCHEZ • ARMANDO MENÉNDEZ • ALFREDO SANZ-MEDEL

C4I-P-TU-PS1-5 **Effect of TiO2 nanoparticules in Ni matrix obtained by electrodeposition on mechanical and corrosion resistance properties**
Chahinez Siad / *Université de Biskra*
SIHEM ARDJANI • AMEUR MEKKAOUI • ABDELOUAHAD CHALA

C4I-P-TU-PS1-6 **Application of New Generation Controlled Release Corrosion Inhibitors for Concrete Reinforcing Steel Protection.**
David M. Bastidas / *Cenim-Csic*

C4I-P-TU-PS1-7 **Photoluminescence Properties of Zinc Oxides Films de posited by Ultrasonic Spray Pyrolysis**
Atika Roustila / *Universite Constantine I*
KHEDIDJA BOUZID • NOUREDDINE BOUZID • ABDELKADER DJELLOUL

C4I-P-TU-PS1-8 **Effect of zinc ions concentration in baths on electroless Ni-Zn-P ternary alloys**
Chouchane Karima / *Universite de Khemis Miliana Algerie*
LEVESQUE ALEXANDRA • AABOUBI OMAR • MESRATI NADIR • CHOPART JEAN PAUL

C4I-P-TU-PS1-9 **Electrodeposition and Corrosion Resistance of Sn-Mn-W Protective Coatings**
Monika Slupska / *Institute of Metallurgy and Material Science of Polish Academy of Sciences*
HONORATA KAZIMIERCZAK • ZBIGNIEW SWIATEK • PIOTR OZGA

C4I-P-TU-PS1-10 **The effect of laser structuring on the aesthetic and functional behaviour of different surfaces**
Itziar García / *Fundacion CIDETEC*
GEMMA VARA SALAZAR • MARIO DÍAZ FUENTES • RUBÉN CREO • DAVID ALONSO • JOSÉ ANTONIO DÍEZ

C4I-P-TU-PS1-11 **Electrodeposition and characterization of zinc-molybdenum coatings for corrosion protection of steel.**
Honorata Kazimierczak / *Institute of Metallurgy and Material Science of Polish Academy of Sciences*
PIOTR OZGA • ZBIGNIEW SWIATEK

C4I-P-TU-PS1-12 **Oxidation protection coatings for titanium, titanium-base alloys and titanium aluminides in high-temperature oxidizing environments**
Rossen Yankov / *Helmholtz-Zentrum Dresden-Rossendorf*
ANDREAS KOLITSCH • JOHANNES VON BORANY • ALEXANDER DONCHEV • LAURENT BORTOLOTTO • PATRIC MASSET • MICHAEL SCHÜTZE

C4I-P-TU-PS1-13 **Washcoat deposition of Ni/MgAl2O4 catalysts for steam reforming reaction on metallic open-cell foams**
Cinzia Cristiani / *Dipartimento di Chimica, Materiali e Ingegneria Chimica, CMIC G. Natta - Politecnico di Milano*
ELISABETTA FINOCCHIO • SAVERIO LATORRATA • CARLO GIORGIO VISCONTI • ENRICO BIANCHI • ENRICO TRONCONI • GIANPIERO GROPPI • PAOLO POLLESEL

C4I-P-TU-PS1-14 **Some surface structure peculiarities of advanced ferroelectric coatings**
Natalia Korobova / *National Research University of Electronic Technology, MIET*
SERGEY TIMOSHENKOV • VENIAMIN VODOPYANOV • ALEXANDER MELNIKOV • YULIYA CHERKASOVA • YULIYA STEPANOVA

C4I-P-TU-PS1-15 **Influence of the Argon plasma treatment of flexible substrates on the ZnO:Al thin film properties deposited at low temperature**
Susana Maria Fernández / *1Departamento de Energías Renovables. Energía Solar Fotovoltaica. Ciemat*
JOSE PABLO GONZÁLEZ • CARMEN MUNUERA • MAR GARCÍA-HERNÁNDEZ • JAVIER GANDÍA

C4I-P-TU-PS1-16 **Gun angle effect on the microstructure and optoelectronic properties of ZnO:Al thin films deposited by radio-frequency magnetron sputtering**
Susana Maria Fernández / *1Departamento de Energías Renovables. Energía Solar Fotovoltaica. Ciemat*
JOSE PABLO GONZÁLEZ • ALBERTO CASADO • JAVIER GRANDAL • ACHIM TRAMPERT • CARMEN MUNUERA • MAR GARCÍA-HERNÁNDEZ • JAVIER GANDÍA

C4I-P-TU-PS1-17 **Formation of Cr and Fe silicides by pack cementation process**
Dimitrios Chaliampalias / *Aristotle University of Thessaloniki*
DIMITRIOS STATHOKOSTOPOULOS • ELENI PAVLIDOU • GEORGE STERGIOUDIS • KONSTADINOS CHRISSAFIS • GEORGE VOURLIAS

C4I-P-TU-PS1-18 **Formation of Zn-Mg alloyed coatings by hot dip process**
Dimitrios Chaliampalias / *Aristotle University of Thessaloniki*
NIKOLAOS PISTOFIDIS • DIMITRIOS STATHOKOSTOPOULOS • ELENI PAVLIDOU • GEORGE STERGIOUDIS • GEORGE VOURLIAS

C4I-P-TU-PS1-19 **Structure and properties of metallic nitrides on copper substrates preparated by pack cementation process**
Dimitrios Stathokostopoulos / *Aristotle University of Thessaloniki*
DIMITRIOS CHALIAMPALIAS • ELENI PAVLIDOU • GEORGE STERGIOUDIS • PANOS PATSALAS • KONTSADINOS CHRISSAFIS • GEORGE VOURLIAS

C4I-P-TU-PS1-20 **Structural and morphological examination of doped magnesium silicide coatings formed by thermochemical diffusion process**
Dimitrios Stathokostopoulos / *Aristotle University of Thessaloniki*
DIMITRIOS CHALIAMPALIAS • ELENI PAVLIDOU • EVRIPIDES HATZIKRANIOTIS • KONSTADINOS PARASKEVOPOULOS • GEORGE VOURLIAS

C4I-P-TU-PS1-21 **Marine Coatings: New Non-Release Antifouling Systems**
Elisabete Silva / *Instituto Superior Técnico*
OLGA FERREIRA • MARIA JOSÉ CALHORDA • JOÃO BORDADO

C4I-P-TU-PS1-22 **Elaboration and characterization of the chemical Ni-P coatings with a nickel fixing layer.**
Fares Chahinez / *Faculty of Technology, Hassiba Ben Bouali University*
MERATI ABDELNACER • BELOUCHRANI MOHAMED EL AMINE

C4I-P-TU-PS1-23 **Effect of bioactive compounds-loaded nanoliposomes on optical and microstructural properties of starch-sodium caseinate based films**
Laura Sanchez-Gonzalez / *Laboratoire D'Ingénierie de s Biomolécules (LIBio). ENSAIA - Université de Lorraine.*
ALBERTO JIMÉNEZ • STÉPHANE DE SOBRY • AMPARO CHIRALT • ELMIRA ARAB TEHRANY

C4I-P-TU-PS1-24 **Microstructure of electrodeposited nickel matrix composite coatings reinforced with inert alpha-Al2O3 particles**
Anna Goral / *Institute of Metallurgy and Materials Science of the Polish Academy of Sciences*
MAREK NOWAK • BOGUSZ KANIA • JOANNA WOJEWODA-BUDKA

C4I-P-TU-PS1-25 **ESD de posited Protective Coatings on Ti6Al4V**
Stefan Emmer / *FME Slovak University of Technology, IVMA STU*
JAROSLAV KOVÁCIK

C4I-P-TU-PS1-26 **Phase transition of iron sulfides formed by iron steel under microbial corrosion: A Raman investigation**
Yassine El Mendili / *SUBATECH, Ecole de s Mines de Nantes*
ABDESSELAM ABDELOUAS • JEAN-FRANÇOIS BARDEAU

C4I-P-TU-PS1-27 **Cross-linked Electrospun Poly(vinyl alcohol) Mats as Effective Protective Layers for Metallic Substrates**
Amin Firouzi / *University of Rome - Tor Vergata*
COSTANTINO DE L GAUDIO • GIAMPIERO MONTESPERELLI • ALESSANDRA BIANCO

C4I-P-TU-PS1-28 **Study of TiN and TiAlN coatings deposited on AM60 magnesium alloy.**
Montserrat Pichel / *Universidad Nebrija,*
GERARDO CONEJERO • BEATRIZ ACHIAGA • RAFAEL BAREA • MANUEL CARSÍ • NURIA CANDELA

C4I-P-TU-PS1-29 **Influence of substrate microstructural features on formation of PVD growth defects**
Peter Gselman / *Josef Stefan Institut*
TONICA BONA INA • FRANC ZUPANIA • DARJA KEK MERL • MIHA ŒEKADA • PETER PANJAN

C4I-P-TU-PS1-30 **An oxygen free copper wires covered with galvanic metallic coatings**
£ukasz Wierzbicki / *Institute of Non-Ferrous Metals*
LUDWIK CIURA • WITOLD MALEC • BARBARA JUSZCZYK • SZYMON MALARA • BEATA CWOLEK • JOANNA KULASA • ANTONI PUCHALIK

C4I-P-TU-PS1-31 **Simulation of WxSiyOz thin films grown by reactive magnetron sputtering from a single heterogeneous target**
Rafael Alvarez / *Instituto de Ciencia de Materiales de Sevilla (CSIC-US)*
JORGE GIL-ROSTRA • JOSE COTRINO • AGUSTIN R. GONZALEZ-ELIPE • ALBERTO PALMERO

C4I-P-TU-PS1-32 **Three Step Oxidation Process for the Creation of Oxidized Zirconium**
Michael Reif / *University Bayreuth*
FLORIAN SCHERM • MATHIAS GALETZ • UWE GLATZEL

C4I-P-TU-PS1-33 **Study on chromium-free passivation coating on hot-dip galvanized steel sheet**
Xu Zhefeng / *PanGang Group Research Institute Co., Ltd.*
MEI DONGSHENG • XU QUAN • YAN LOU

C4I-P-TU-PS1-34 **The low friction phenomenon on a formed chromium carbide dimple sintered parts by pack-chromizing coating process**
Sang-Gweon Kim / *Korea Institute of Industrial Technology (KITECH- Incheon Regional Division)*
YONG-JIN PARK • JAE-HOON LEE

C4I-P-TU-PS1-35 **Composite zones obtained in castings by in situ synthesis of TiC carbide**
Ewa Olejnik / *AGH - University of Science and Technology, Faculty of Foundry Engineering*
MARCIN GÓRNY • TOMASZ TOKARSKI • GABRIELA SIKORA

C4I-P-TU-PS1-36 **Sol-gel coatings for corrosion protection of magnesium alloys doped with cerium**
Noé Murillo / *Cirimat*
FLORENCE ANSART • JEAN-PIERRE BONINO • MARIE-JOËLLE MENU • MARIE GRESSIER

C4I-P-TU-PS1-37 **Hexafluorotitanic and Hexafluorozirconic Acids as Surface Modifiers in Low Carbon Steel for Automotive Use**
Gerardo Garduño Corvera / *Universidad Nacional Autónoma de México*
FRANCISCO JAVIER RODRÍGUEZ GÓMEZ • JHOVANY LARA NAVA • FRANCISCO JAVIER GARFIAS VÁSQUEZ • EDUARDO RODRÍGUEZ GARCÍA

C4I-P-TU-PS1-38 **Evaluation of TiO2 coatings with Cerium (IV) deposited on stainless-steel prepared by sol-gel method and dip-coating technique**
Jhovany Lara Nava / *Universidad Nacional Autónoma de México*
FRANCISCO JAVIER RODRÍGUEZ GÓMEZ • GERARDO GARDUÑO CORVERA • EDUARDO RODRÍGUEZ GARCÍA

C4I-P-TU-PS1-39 **MOCVD Method to Form Nanostructural Films and Coatings on the base of platinum group metals**
Natalia Morozova / *Nikolaev Institute of Inorganic Chemistry SB RAS*

C4I-P-TU-PS1-40 **Effect of boric acid and sodium molybdate on sulphuric anodising of 2017A aluminium alloy**
Hamdadou Mohammed / *Polytechnic Military School, Algeria*
AABOUBI OMAR • AKRETCHE DJAMEL EDDINE

C4I-P-TU-PS1-41 **Splats morphology of thermal sprayed powders on different substrates**
Javier Fernandez / *Thermal Spray Center (CPT). University of Barcelona*
ANTONIO ISALGUE • NURIA CINCA • IRENE G CANO • JOSE M GUILEMANY • SANJAY SAMPATH

C4I-P-TU-PS1-42 **Tribocorrosion behavior of TiBC nanocomposite coatings in strong oxidant disinfectant solutions**
Ana Conde / *CENIM-CSIC Surface Engineering, Corrosion and Durability Department*
ELENA GRACIA-ESCOSA • IÑAKI GARCÍA • JUAN CARLOS SÁNCHEZ-LÓPEZ • MANUEL DAVID ABAD • A MARISCAL • MARIA ÁNGELES ARENAS • JUAN JOSÉ DE DAMBORENEA

C4I-P-TU-PS1-43 **Interface Zone Formed During de tonation Spraying WC-Co Powders on the Diphase Titanium Alloy**
Tomasz Babul / *Institute of Precision Mechanics*

C4I-P-TU-PS1-44 **Corrosion behavior of TiAlN/CrN coated Ti6Al4V alloy in aqueous solutions**
Verônica Oliveira / *Escola de Engenharia de Lorena, Universidade de São Paulo - EEL/USP*
AMIRA VAZQUEZ • CARLA AGUIAR • ALAIN ROBIN • MIGUEL BARBOZA

C4I-P-TU-PS1-45 **Synthesis and characterization of smart anticorrosive pigments based on SiO2 mesoporous nanoreservoirs loaded with environmentally friendly corrosion inhibitors**
Rosa Barranco / *National Centre for Metallurgical Research (CENIM/CSIC)*
DANIEL DE LA FUENTE • BELÉN CHICO • MANUEL MORCILLO

C4I-P-TU-PS1-46 **Functionally Modified Hard Chromium Coatings: Improvement on both Mechanical and Corrosion Behaviors by Post-Treatment**
Orkut Sancakoglu / *Dokuz Eylul University, Engineering Faculty, Metallurgy and Materials Engineering Department*
GULER UNGAN • ERDAL CELIK • TEVFIK AKSOY

C4I-P-TU-PS1-47 **Surface Segregation of Ag in Ag-DLC thin films produced by Magnetron Sputtering**
Noora K. Manninen / *Univerisdade de Coimbra, SEG-CEMUC*

C4I-P-TU-PS1-48 **Tribological Properties of Tetrahedral amorphous Carbon layers on HSS- steel Drillers**
Katja Günther/ / *University of Applied Sciences Mittweida*
STEFAN SCHOLZE • FRANKA MARQUARDT • STEFFEN WEISSMANTEL

C4I-P-TU-PS1-49 **Pulsed Electrospark de position as a New Horizon Technology for MAX-phases Based Coatings de position**
Evgenia Zamulaeva / *National University of Science and Technology*
EVGENY LEVASHOV • TATYANA SVIRIDOVA • NATALIA SHVYNDINA • PH.V. KIRYUKHANTSEV-KORNEEV

C4I-P-TU-PS1-50 **New material comprising a Zn metal matrix and ceramic particles having very good mechanical properties and high corrosion resistance.**
Zulema Ángela Mahmud / *INTI-Instituto Nacional de Tecnología Industrial.*
FRANCO AMELOTTI • NORMA MINGOLO • LILIANA GASSA • PAULO TULIO • GABRIEL GORDILLO

C4I-P-TU-PS1-51 **Concentrated Solar Energy (CSE) in Materials Processing**
Alfonso J. Vázquez-Vaamonde / *CENIM-CSIC*

C4I-P-TU-PS1-52 **Structure and properties of composite metallic modification nonwoven**
Joanna Koprowska / *Textile Research Institute*

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AREA C / PROCESSING

C4 / ADVANCED COATING AND SURFACE STRUCTURING

C4II / Plasma de position of Thin Films and Coatings

C4II-P-TU-PS1-1 **Study of effect of deposition temperature of Surface Acoustic Wave devices on Aluminum Nitride thin films obtained by Pulsed Laser de position**
Jaime Andres Perez Taborda / *Universidad Autonoma de Barcelona*

C4II-P-TU-PS1-2 **The growth mechanism of poly(ethylene) nano-islands fabricated by Vapour Phase de position**
Iurii Melnichuk / *Charles University In Prague*
ANDREI CHOUKOUROV • IVAN GORDEEV • JAN HANUŠ • ONDřEJ KYLIÁN • DÁNKA SLAVÍNSKÁ • HYNEK BIEDERMAN

C4II-P-TU-PS1-3 **Bulk Condensation of Supersaturated Vapor during Heterogeneous Reaction**
Naum Kortsenshteyn / *G.M. Krzhizhanovsky Power Engineering Institute*
EUGENE SAMUILOV

C4II-P-TU-PS1-4 **Effect of drop fraction of erosive flow deposited by vacuum arc on morphology of cooper films**
Khusniddinkhuja Kadirov / *Institute of Ion-Plasma and Laser Technolgies Academy of Scince of Republic of Uzbekistan*
VLADIMIR ARUSTAMOV • KHOTAM ASHUROV • ILYOS KHUDAYKULOV

C4II-P-TU-PS1-5 **Influence of deposition parameters on the closed porous structure of magnetron sputtered amorphous silicon coatings**
Jaime Caballero Hernández / *Instituto de Ciencia de Materiales de Sevilla, CSIC-Univ. Sevilla*
ROLAND SCHIERHOLZ • VANDA GODINHO • MARTIAL DUCHAMP • RAFAL DUNIN-BORKOVSKI • ASUNCIÓN FERNÁNDEZ CAMACHO

C4II-P-TU-PS1-6 **The study on the optimization of molybdenum back contact films for CIGS solar cells by the cathodic arc ion plating method**
Yong Ki Cho / *Korea Institute of Industrial Technology*
YOUNG SIK SONG • TAE HONG LIM • DONGGEUN JUNG

C4II-P-TU-PS1-7 **Deposition of the Ti-Cr-Al-N coatings using ion source enhanced CFUBMS**
Philipp Kiryukhantsev-Korneev / *National University of Science and Technology*
DMITRY SHTANSKY • EVGENY LEVASHOV • J PHIRI • K KUPTSOV • A. SHEVEYKO

C4II-P-TU-PS1-8 **Characterization of hydrogenated amorphous carbon films deposited by RF plasma polymerization in argon/n-hexane gas mixture**
Martin Petr / *Charles University In Prague*
OLEKSANDR POLONSKYI • ONDREJ KYLIAN • ANDREI CHOUKOUROV • JAN HANUS • ANNA KUZMINOVA • PAVEL SOLAR • HYNEK BIEDERMAN

C4II-P-TU-PS1-9 **Influence of inclusions on the corrosion attack of plasma nitrided austenitic stainless steel**
Silvia Simison / *INTEMA, CONICET- Universidad Nacional de Mar del Plata, Argentina*
LISANDRO ESCALADA • SONIA P. BRÜHL • SEBASTIÁN SUAREZ • AGUSTINA GUITAR • DARINA MANOVA • STEPHAN MÄNDL

C4II-P-TU-PS1-10 **The effect of nitrification layer by neutral nitrogen species during plasma nitriding process of mold steels**
Sang-Gweon Kim / *Korea Institute of Industrial Technology (KITECH- Incheon Regional Division)*
JAE-HOON LEE • KUK-HYUN YEO • JUNG-HYUN KONG

C4II-P-TU-PS1-11 **The behavior of corrosion resistance on plasma nitriding treated austenitic stainless steels via a simple work hardening method**
Sang-Gweon Kim / *Korea Institute of Industrial Technology (KITECH- Incheon Regional Division)*
KUK-HYUN YEO • YONG-JIN PARK • JAE-HOON LEE

C4II-P-TU-PS1-12 **Remote Plasma Assisted GLAD de position of Oxide Thin Film Nanostructures for Optical and Electronic Applications.**
Julián Parra Barranco / *Icms*
VÍCTOR JOAQUÍN RICO GAVIRA • ANA ISABEL BORRÁS MARTOS • J.PEDRO ESPINÓS MANZORRO • FABIÁN FRUTOS • AGUSTÍN R.GONZÁLEZ-ELIPE • ÁNGEL BARRANCO QUERO

C4II-P-TU-PS1-13 **Growth characteristics and properties of nanocomposite Ag-doped TiN thin films produced by glancing angle deposition**
Paulo Pedrosa / *SEG-CEMUC – Department of Mechanical Engineering, University of Coimbra, Portugal*
CLÁUDIA LOPES • EDUARDO ALVES • NUNO BARRADAS • NICOLAS MARTIN • ALAIN BILLARD • FRANCISCO MACEDO • CARLOS FONSECA • FILIPE VAZ

C4II-P-TU-PS1-14 **Influence of changes in the transport properties of radiation and heat transfer of a silicon particle immersed in a plasma.**
Hichem Zeggai / *University of Tlemcen*
OUSSAMA ZEGGAI • AMARIA BENSAOULA

C4II-P-TU-PS1-15 **Strengthening of anti-corrosive stability of heat-carrier pipes of solar power stations by ion-plasma vacuum-arc method**
Khusniddinkhuja Kadirov / *Institute of Ion-Plasma and Laser Technologies AS of RUz*
VLADIMIR ARUSTAMOV • KHATAM ASHUROV • ILYAS KHUDAYKULOV

C4II-P-TU-PS1-16 **Influence of niobium concentration on structure of Nb-doped bismuth oxide thin films deposited by PLD technique**
Slawomir Kac / *AGH-University of Science and Technology*

C4II-P-TU-PS1-17 **Effect of HIPIMS on the nanostructure and subsequent annealing of La-Si-O thin films**
Ana Mafalda Macatrão / *SEG-CEMUC*
JOÃO CARLOS OLIVEIRA • ALBANO CAVALEIRO

C4II-P-TU-PS1-18 **Characterization of Al-Mg-Ni thin films obtained by PLD technique**
Agnieszka Radziszewska / *AGH University of Science and Technology, Faculty of Metals Engineering and Industrial Computer Science*

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AREA D / CHARACTERISATION AND MODELLING

D1 / PHYSICAL, CHEMICAL AND STRUCTURAL CHARACTERISATION

D1I / Atom Probe Tomography

D1I-P-TU-PS1-1 **Phase evolution of Al8Co17Cr17Cu8Fe17Ni33 (at.%) high entropy alloy after heat treatment**
Anna Manzoni / *Helmholtz-Zentrum Berlin Für Materialien Und Energie*
HANEEN DAOUD • RAINER VOELKL • UWE GLATZEL / NELIA WANDERKA

D1I-P-TU-PS1-2 **Atom probe analysis of gamma-Fe4N**
Andrius Martinavièius / *Normandie Univ, France*
RAPHAëLE DANOIX • MICHEL DROUET • FRÉDÉRIC DANOIX • BÉATRICE HANNOYER

D1I-P-TU-PS1-3 **From metals to intrinsic insulators in Atom Probe Tomography: the end of a journey?**
Aurore Gaillard / *Université de Rouen*
FRANÇOIS VURPILLOT • BERNARD DE CONIHOUT

D1I-P-TU-PS1-4 **Intergranular and surface corrosion study of stainless steels by using of atom probe tomography**
Bong Ho Lee / *Pohang University of Science and Technology (POSTECH)*
KYONG HUM BACK • HYUN JIN PARK • SUNG KYU KIM • CHAN GYUNG PARK

D1I-P-TU-PS1-5 **Atom Probe investigation of Boron distribution in Tantalum capped CoFeB layers after heat treatment**
Zoltán Balogh / *University of Münster, Institute for Material Physics*
Houari Bouchikhaoui / Patrick Stender / Dietmar Baither / Kazuihiro Hono / Andreas Hütten
GUIDO SCHMITZ

D1I-P-TU-PS1-6 **Multi-hit detection and quantization in atom probe tomography**
Didier Blavette / *Normandie Université*
GERALD DA COSTA • HUIYUAN WANG • SÉBASTIEN DUGUAY • ALAIN BOSTEL • BERNARD DE CONIHOUT

D1I-P-TU-PS1-7 **Effects of Nickel and Manganese on the Thermal Ageing and Embrittlement of Low-Copper Pressure Vessel Steels**
Jennifer Zelenty / *Department of Materials, University of Oxford*
JONATHAN HYDE • GEORGE SMITH • KEITH WILFORD • MICHAEL MOODY

D1I-P-TU-PS1-8 **Multi-Scale Correlative Microscopy Investigation of de formation Twin Bundles in Fe-Mn-C Steel**
Ross Marceau / *Max-Planck-Institut Für Eisenforschung*
IVAN GUTIERREZ-URRUTIA • MICHAEL HERBIG • KATIE MOORE • SERGIO LOZANO-PEREZ • DIERK RAABE

D1I-P-TU-PS1-9 **A High-resolution Characterization Study of Oxidation-induced Segregation in a Pt-Pd-Rh Alloy Catalyst Gauze**
Paul Bagot / *University of Oxford*
KAREN KRUSKA

D1I-P-TU-PS1-10 **Site specific specimen preparation for APT combining EBSD and lift out**
Frédéric Danoix / *GPM - CNRS - Normandie University*
FABIEN CUVILLY • EMMANUEL CADEL • GRANT THOMAS

D1I-P-TU-PS1-11 **Ion energy spread in Laser Assisted Atom Probe Tomography**
Bernard de conihout / *Groupe de Physique de s Matériaux,Université Et INSA de ROUEN*
ANGELA VELLA • FRANCOIS VURPILLOT • NICOLAS SÉVELIN-RADIGUET • ANTOINE NORMAND

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AREA D / CHARACTERISATION AND MODELLING

D1 / PHYSICAL, CHEMICAL AND STRUCTURAL CHARACTERISATION

D1III / Tomographic and Radiographic Imaging with X-Rays and Neutrons

D1III-P-TU-PS1-1 **The refurbished ID19 beamline: a versatile station for synchrotron-based full-field hard Xray microimaging**
Alexander Rack / *European Synchrotron Radiation Facility*
ELODIE BOLLER • PASCAL BERNARD • MICHEL RENIER • TIMM WEITKAMP • ANATOLY SNIGIREV • JOSE BARUCHEL • PAUL TAFFOREAU

D1III-P-TU-PS1-3 **Coherent synchrotron-based micro-imaging employed for quantitative studies of micro-gap formation in dental implants**
Alexander Rack / *European Synchrotron Radiation Facility / Tatjana Rack / Simon Zabler*
MICHAEL STILLER • HEINRICH RIESEMEIER • KATJA NELSON

D1III-P-TU-PS1-4 **Non de structive Testing and Evaluation of Aerospace Materials by X Ray Computed Tomography.**
Amadís Zorrilla / *Center for Advanced Aerospace Materials*
CARLOS GALLEGUILLOS • NICOLÁS GUTIÉRREZ • ANDRÉS CAMPOS • FERNANDO LASAGNI

D1III-P-TU-PS1-5 **Drastic evolutionary changes in a cave insect's head morphology – First insights from high-resolution synchrotron µCT**
Heinrich Riesemeier / *BAM Bundesanstalt für Materialforschung und -prüfung*
ANDREAS WESSEL • DANIEL BAUM • RALF BRITZKE • KARSTEN EHRIG • HANS-CHRISTIAN HEGE • HANNELORE HOCH • MARKUS KÜHBACHER • OLAF PAETSCH

D1III-P-TU-PS1-6 **ANATOMIX - a synchrotron beamline for coherent X-ray micro- and nanotomography under construction at the SOLEIL light source**
Timm Weitkamp / *Synchrotron Soleil*
JEAN-LUC GIORGETTA • VICTORIEN JOYET • FRANÇOIS POLACK • JEAN-PIERRE SAMAMA

D1III-P-TU-PS1-7 **Single-distance phase retrieval of X-ray inline phase contrast images with the ANKAphase computer program**
Timm Weitkamp / *Synchrotron Soleil*
DAVID HAAS • ALEXANDER RACK

D1III-P-TU-PS1-8 **Application of novel processing tools to improve the extraction of x-ray differential phase and dark-field signals from mechanically unstable phase stepping**
Astrid Velroyen / *Department of Physics and Institute of Medical Engineering (IMETUM), Technische Universität München, Garching, Germany*
GUILLAUME POTDEVIN • MARTIN BECH • ARNE TAPFER • PIERRE THIBAULT • ANDRE YAROSHENKO • FRANZ PFEIFFER

D1III-P-TU-PS1-9 **Tomography with deep submicrometer resolution and powder diffraction-based contrast to study the decomposition of TiH2 particles for improved aluminium foam manufacture**
Alexander Rack / *European Synchrotron Radiation Facility*
JIMENEZ CATALINA • FRANCISCO GARCIA MORENO • REMI TUCOULOU • TATJANA RACK • PETER CLOETENS • JOHN BANHART

D1III-P-TU-PS1-10 **Biomedical grating-based phase-contrast imaging using synchrotron and conventional X-ray sources**
Julia Herzen / *Department of Physics & Institute for Medical Engineering, Technische Universität München*
MARIAN WILLNER • ALEXANDER HIPP • HOLGER HETTERICH • TOBIAS SAAM • DORIS MAYR • SUSANNE GRANDL • IRENE ZANETTE • TIMM WEITKAMP • FRANZ PFEIFFER

D1III-P-TU-PS1-11 **Full-field ptychography for phase imaging of material science samples**
Marco Stockmar / *Technische Universität München, Department of Physics (E17)*
PETER CLOETENS • IRENE ZANETTE • BJOERN ENDERS • MARTIN DIEROLF • FRANZ PFEIFFER • PIERRE THIBAULT

D1III-P-TU-PS1-12 **PSICHÉ: a new synchrotron tomography beamline at SOLEIL**
Andrew King / *Synchrotron SOLEIL / Nicolas Guignot*
PIERRICK ZERBINO • JEAN-PAUL ITIÉ

D1III-P-TU-PS1-13 **X-ray computer tomography analysis of Pt-Rh, Pt-Rh-Pd, Pd-Ni and Pd-Au catalytic gauzes after oxidation of ammonia process**
Jaroslaw Pura / *Warsaw University of Technology, Faculty of Materials Science & Engineering*
PIOTR KWASNIAK • HALINA GARBACZ • MACIEJ GIEREJ • KRZYSZTOF KURZYDLOWSKI

D1III-P-TU-PS1-14 **In-situ synchrotron micro-tomography for heterogeneous tungsten materials**
Jeong-Ha You / *Max-Planck-Institute for Plasma Physics*
JOHANN RIESCH • ALESSANDRO ZIVELONGHI • TIMM WEITKAMP • MARCO DI MICHIEL • MARIO SCHEEL • JEAN-YVES BUFFIÈRE • AYMERIC LARRUE

D1III-P-TU-PS1-15 **Quantitative comparison of denture models using micro computed tomography**
Georg Schulz / *Biomaterials Science Center, University of Basel / Christoph Vögtlin*
HANS DE YHLE • KURT JÄGER • BERT MÜLLER

D1III-P-TU-PS1-16 **Revealing the morphology of coronary arteries to design nano-containers for targeted drug delivery**
Margaret Nancy Holme / *University of Basel*
HANS DE YHLE • TIMM WEITKAMP • FELIX BECKMANN • JOHANNES ALEXANDER LOBRINUS • ANDREAS ZUMBUEHL • TILL SAXER • BERT MÜLLER

D1III-P-TU-PS1-17 **Microstructural Analysis of a C/SiC Ceramic Based on the Segmentation of 3d Image Data**
Behrang Shafei / *Fraunhofer ITWM, Image Processing Department, Kaiserslautern, Germany*
ALEXANDER RACK • ANDRE LIEBSCHER • JÜRGEN MEINHARDT • KATJA SCHLADITZ • GABRIELE STEIDL • OLIVER WIRJADI

D1III-P-TU-PS1-18 **Building experience for the coming PUMA beamline : the first tomographic experiment at SOLEIL**
Serge Cohen / *IPANEMA USR3461, CNRS/MCC*
JEAN SÉBASTIEN STEYER • STÉPHANIE GASTOU • SEBASTIAN SCHÖDER • PASCAL MERCÈRE

D1III-P-TU-PS1-19 **The length density of random fiber systems and its estimation from tomographic images**
Joachim Ohser / *Univ. Appl. Sci. Darmstadt, Dept. Math. & Nat. Sci.*
KONRAD SANDAU • JÜRGEN KAMPF • IRENE VECCIO • ALI MOGHISEH

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AREA D / CHARACTERISATION AND MODELLING

D1 / PHYSICAL, CHEMICAL AND STRUCTURAL CHARACTERISATION

D1IV / Neutron and X-Ray Diffraction and Imaging for Materials Science and Engineering

D1IV-P-TU-PS1-1 **Study of the evolution of microstructural parameters according to the rates macroscopic deformation of a dual phase steel using image analysis techniques.**
Yaya Kamel / *University of Béjaïa*

D1IV-P-TU-PS1-2 **Time-resolved XRD study of TiC obtained by SHS**
Hafida Boutefnouchet / *University of Annaba*
CAROLINE CURFS

D1IV-P-TU-PS1-3 **Effect of surfactants in the structural and barrier properties of corn starch based films**
Rodrigo Ortega Toro / *Universitat Politècnica de València*
ALBERTO JIMÉNEZ MARCO • PAU TALENS OLIAG • AMPARO CHIRALT BOIX

D1IV-P-TU-PS1-4 **Deformation Texture Evolution of Low Carbon Steel with Heterogeneous Structure**
Nadjet Rouag / *Université de Jijel / Ahcène Boumaiza*

D1IV-P-TU-PS1-5 **Quantitative characterization of spinodal decomposition in a Fe-Cr based steel: complementarity between small-angle X-ray and neutron scattering and atom probe tomography**
Laurent Couturier / *SIMaP, Grenoble-INP - CNRS - UJF*
FRÉDÉRIC DE GEUSER • ALEXIS DE SCHAMPS

D1IV-P-TU-PS1-6 **Texture development in a cold rolled Ti-29Nb-9Ta-10Zr alloy**
Doina Raducanu / *University Politehnica of Bucharest, Romania*
VASILE DANUT COJOCARU • ION CINCA • DOINA MARGARETA GORDIN • ISABELLE THIBON

D1IV-P-TU-PS1-7 **X-ray diffraction of magnetic shape memory alloys: modulated structures**
J.J. Suñol / *University of Oviedo*
M.L. ESCODA • A CARRILLO • B. HERNANDO

D1IV-P-TU-PS1-8 **Simultaneous white-beam radioscopy/tomography and energy dispersive diffraction**
Catalina Jiménez / *Helmholtz-Zentrum Berlin*
FRANCISCO GARCÍA-MORENO • MANUELA KLAUS • GUIDO WAGENER • PAUL-HANS KAMM • JOHN BANHART • CHRISTOPH GENZEL

D1IV-P-TU-PS1-9 **Local corrosion of AZ91D, WE43 and Elektron magnesium alloys in corrosive medium containing 0,01% chloride ions**
Boguslawa Adamczyk-Cieslak / *Warsaw University of Technology*
ANNA DOBKOWSKA • JANUSZ KAMIŃSKI • JERZY SMOLIK • JAROSLAW MIZERA

D1IV-P-TU-PS1-10 **Super 6T1: the new versatile neutron diffractometer for texture and stress analysis**
Vincent Klosek / *CEA, IRAMIS, Laboratoire Léon Brillouin (CEA - CNRS)*
SÉBASTIEN GAUTROT • PASCAL LAVIE • MARIE-HÉLÈNE MATHON

D1IV-P-TU-PS1-11 **X-ray microdiffraction of high-pressure–high-temperature forms of C60**
Michelle Jenice Alvarez Murga / *ESRF, Grenoble, France*
CHRISTOPHE LEPOITTEVIN • JEAN-LOUIS HODEAU • MOHAMED MEZOUAR

D1IV-P-TU-PS1-12 **Resonant X-ray Emission Spectroscopy study changes in the electronic structure of Ni-based Metal Organic Framework upon molecular adsorption**
Diego Gianolio / *Diamond Light Source Ltd., Harwell Science & Innovation Campus, UK*
ERIK GALLO • FRANCESCA BONINO • SACHIN CHAVAN • ELISA BORFECCHIA • SILVIA BORDIGA • PIETER GLATZEL • CARLO LAMBERTI

D1IV-P-TU-PS1-13 **Recent developments of neutron imaging and diffraction techniques on the material sciences beamlines ENGIN-X and IMAT at ISIS**
Genoveva Burca / *STFC, Rutherford Appleton Laboratory*
WINFRIED KOCKELMANN • SHU-YAN ZHANG • KELLEHER JOE • KABRA SAURABH • JAMES JON • FITZPATRICK MIKE

TUESDAY 10 SEPTEMBER 2013

AREA D / CHARACTERISATION AND MODELLING

D1 / PHYSICAL, CHEMICAL AND STRUCTURAL CHARACTERISATION

D1V / Advanced Electron and Ion Microscopy Methods in Materials Characterization

D1V-P-TU-PS1-1 **Atomic resolution imaging by STEM-HAADF of the shearing mechanism of nanoscale precipitates in an Al-Cu-Li alloy**
Thomas Dorin / *Constellium, Voreppe Research Centre, BP 27, 38341 Voreppe Cedex, France*
FRÉDÉRIC DE GEUSER • WILLIAMS LEFEBVRE • ALEXIS DE SCHAMPS

D1V-P-TU-PS1-2 **Effect of rice bran incorporation on physical and microstructural properties of different starch based biodegradable films.**
Amalia Isabel Cano Embuena / *IIAD-UPV*
ALBERTO JÍMENEZ MARCO • MAITE CHÁFER NÁCHER • AMPARO CHIRALT BOIX • CONSUELO GONZÁLEZ MARTÍNEZ

D1V-P-TU-PS1-3 **Starch-hydroxypropyl methylcellulose based films. Influence of citric acid as cross-linking agent**
Rodrigo Ortega Toro / *Universitat Politècnica de València*
PAU TALENS OLIAG • AMPARO CHIRALT BOIX

D1V-P-TU-PS1-4 **Microstructural Characterization of Ti6Al-2Sn-4Zr-2Mo alloy**
Carlos Cairo / *Brazilian Aerospace Center - CTA / Vinicius Henriques*
MARIO GRACA • RAISSA PEREIRA

D1V-P-TU-PS1-5 **Aberration corrected STEM imaging and analysis of nano-structures**
Corneliu Ghica / *National Institute of Materials Physics*
LEONA CRISTINA NISTOR • IOANA PINTILIE • SERGIU VASILE NISTOR

D1V-P-TU-PS1-6 **Production of titanium alloys for high temperature applications**
Graca Mario / *Brazilian Aerospace Center -CTA*
CARLOS CAIRO • VINICIUS HENRIQUES

D1V-P-TU-PS1-7 **The role of edge dislocations on the red luminescence of ZnO films deposited by RF-sputtering**
Rocío Félix / *Universidad de Cádiz*
MARCO PERES • SÉRGIO MAGALHÃES • MANUEL J. SOARES • KATHARINA LORENZ • FRANCISCO M. MORALES • RAFAEL GARCÍA • ROSÁRIO CORREIA • ARMANDO LOURENÇO • TERESA MONTEIRO

D1V-P-TU-PS1-8 **Formation of tetragonal InBi clusters in InAsBi/InAs heterostructures grown by MBE**
L. D. Blanco / *de partamento de Ciencia de los Materiales e I. M. y Q. I., Facultad de Ciencias, Universidad de Cádiz, Puerto Real, Spain*
D. F. REYES • F. BASTIMAN • A. R. MOHMAD • D. F. MENDES • D. L. SALES • J. P. R. DAVID • D. GONZALEZ

D1V-P-TU-PS1-9 **Microstructure of WE43 magnesium matrix composite reinforced ceramic particles**
Maciej Dyzia / *Silesian University of Technology*
TOMASZ RZYCHOŃ

D1V-P-TU-PS1-10 **Preparation of composites with ceramic preforms via centrifugal infiltration process**
Anna Janina Dolata / *Silesian University of Technology*
MACIEJ DYZIA

D1V-P-TU-PS1-11 **Structure and morphology of martensite and carbides in HS6-5-2-5 steel after deep cryogenic treatment**
Aleksander Ciski / *Institute of Precision Mechanics*

D1V-P-TU-PS1-12 **Atom-scale analysis of single-layer MoS2**
Andrés M. Raya / *INNANOMAT Group, de partamento de Ciencia de los Materiales e I.M. y Q.I., Facultad de Ciencias, Universidad de Cádiz, Puerto Real, Spain*
M. PAZ GUERRERO-LEBRERO • GIOVANNI SCAVELLO • PEDRO L. GALINDO • ARTURO PONCE • ALEJANDRA GARCÍA • RODRIGO ESPARZA • MANUEL JOSE-YACAMAN • SERGIO I. MOLINA

D1V-P-TU-PS1-13 **Structural analysis of doped lanthanum niobate in low temperatures.**
Sebastian Wachowski / *Gdañsk University of Technology, Facoulty of Applied Physics and Mathematics, Department of Solid State Physics*
ALEKSANDRA MIELEWCZYK-GRYÑ • MARIA GAZDA

D1V-P-TU-PS1-14 **Scanning electron microscopy imagining of doped lanthanum niobate at elevated temperatures**
Aleksandra Mielewczyk-Gryñ / *Gdañsk University of Technology*
SEBASTIAN WACHOWSKI • KATARZYNA GDULA-KASICA • MARIA GAZDA

D1V-P-TU-PS1-15 **Study of morphological ands structural properties of BGAN/AIN/Al2O3 by MOVPE**
Mama Bouchaour / *URMER, Université Abou Bekr Belkaid de Tlemcen*

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AREA D / CHARACTERISATION AND MODELLING

D2 / MECHANICAL CHARACTERISATION

D2I / Mechanical Behavior of Advanced Materials

D2I-P-TU-PS1-1 **Characterization by XRD, XRF, OM, SEM-EDX, thermal analysis, FTIR and Raman Spectroscopies of ancient ceramics (IV-II centueries b.C.) from selected archaeological sites at the Guadalquivir Valley**
Violeta Moreno-Megías / *ICMS, CSIC-US Y Dpto. PreHª Y Arqueología Univ. Sevilla*
PEDRO JOSÉ SÁNCHEZ-SOTO

D2I-P-TU-PS1-2 **Mechanical Property Database for Aerospace Composite Material**
Ho-Sung Lee / *Korea Aerospace Research Institute*
JI-UNG CHOI

D2I-P-TU-PS1-3 **Characterization of de formation Texture of Copper Wire (99.26% Cu) Drawn de stined for Electrical Cabling**
Mosbah Zidani / *Laboratoire LGEM-Université de Biskra*
FAYCEL DE NDOUGA • SALIM MESSAOUDI • THIERRY BAUDIN • CHEMSDDINE DE RFOUF • ABDELMALEK BOULAGROUN • MA.L . HELBERT

D2I-P-TU-PS1-4 **Mechanical and Microstructural Response of AZ31 Alloy during Planar Simple Shear**
Jun-Yun Kang / *Korea Institute of Materials Science*
SEONG-GYEONG KIM • HEON-YOUNG HA • BRIGITTE BACROIX

D2I-P-TU-PS1-5
Experimental Studies and Numerical Predictions of Recrystallisation-Assisted Viscoplastic Strain Under Low Stresses After Hot de formation
Minghao ZHANG / *Centre des Matériaux, Mines ParisTech, Evry, France*
MINGXIN HUANG • HAIWEN LUO • ELIETTE MATHEY • ANNE FRANÇOISE GOURGUES-LORENZON • ESTEBAN BUSSO

D2I-P-TU-PS1-6
Characteristics of stress distribution in the case of single lap joint of two composite plates
Abdurrahman Houssein / *Aliabel Algharbi University*
DINESH KATHARIA • MUFTAH HUSSEIN

D2I-P-TU-PS1-7
Constitutive models for compaction powders
Beatriz Achiaga / *Universidad Nebrija*
RAFAEL BAREA • MONTSERRAT PICHEL • NURIA CANDELA

D2I-P-TU-PS1-8
Experimental approach for determining the shear rigidity modulus of carbone fibre non-crimp fabrics
Samir Daghboudj / *Laboratoire LET- de partement of Mechanics University of Tebessa-Algeria*
HAMID SATHA

D2I-P-TU-PS1-9
Tribological behavior of selected nanolaminar Mn+1AXn-phase Materials influenced by electrical current
Rolf Grieseler / *Department Materials for Electronics; Ilmenau University of Technology*
MARCUS HOPFELD • MIKE STUBENRAUCH • PETER SCHAAF

D2I-P-TU-PS1-10
Superplastic deformation of polycrystalline eutectic-composition alumina-based composites
Fredy Alberto Huamán Mamani / *Universidad de Sevilla*
MANUEL JIMÉNEZ MELENDO

D2I-P-TU-PS1-11
Creep of vanadium carbonitride
Fredy Alberto Huamán Mamani / *Universidad de Sevilla*
MANUEL ALBERTO ROLDÁN GUTIÉRREZ • CONCEPCIÓN REAL PÉREZ • MANUEL JIMÉNEZ MELENDO

D2I-P-TU-PS1-12
Reliable approach of designing a hydrostatic gazoducs testing
Bouzid Rachid / *University of Boumerdes*
BOUALI ELAHMOUNE • GACEB MOHAMED

D2I-P-TU-PS1-13
Mechanical and corrosion properties of 12.5Cr5.3Ni2Mo0.20Nb supermartensitic stainless steel
César Auguto Duarte Rodríguez / *Instituto de Química de São Carlos*
JORGE ALBERTO JR MOREIRA • GERMANO TREMULIOSI-FILHO

D2I-P-TU-PS1-14
Effect of hydrostatic extrusion on the microstructure and mechanical properties of biomedical Ti-13Nb-13Zr near betta titanium alloy
Katarzyna Lubkowska / *Warsaw University of Technology*
PIOTR BAZARNIK • MALGORZATA LEWANDOWSKA

D2I-P-TU-PS1-15
Fatigue crack initiation and propagation in the very high cycle fatigue (VHCF) regime of bainitic and martensitic high-strength steels
Patrick Grad / *Working Group of Materials Testing, University of Kaiserslautern*
EBERHARD KERSCHER

D2I-P-TU-PS1-16
Cyclic response and dislocation evolution of AISI 316L stainless steel during low cycle fatigue
Jens Nellessen / *Max-Planck-Institut FÃ¼r Eisenforschung*
STEFANIE SANDLÃ¶BES • DIERK RAABE

D2I-P-TU-PS1-17
Relation of Boundary Characteristics and Mechanical Properties of Ti-6Al-4Fe -0.25Si Alloy after Aging Heat Treatment
Joo-Hee Kang / *Korea Institute of Materials Science*
YONG HWAN SONG • CHAN HEE PARK • YONG-TAEK HYUN • JONG-TAEK YEOM • SEONG-WOONG KIM

D2I-P-TU-PS1-18
Main Features of the structure and physical-mechanical properties of advanced corrosion resistant steels with raised nitrogen content
Evgenya Putilova / *Institute of Engineering Science, Russian Academy of Sciences (Urals Branch)*
SERGEY ZADVORKIN • EDWARD GORKUNOV

D2I-P-TU-PS1-19
High strain rate characterization of 15-5 PH steel and 7075 aluminum alloy.
Léonard Antoinat / *Arts Et Métiers ParisTech - MSMP*
RÉGIS KUBLER • ELIANE GIRAUD • CYRIL FISCHER • LAURENT BARRALLIER

D2I-P-TU-PS1-20
Fatigue behavior of high strength hot-rolled steels in punched-hole specimen
Katsumi Nakajima / *JFE Steel Corporation*
KAZUHIRO SETO

D2I-P-TU-PS1-22
Virtual resolution of the mechanical characterization of foam materials by means of multiscale finite element modeling
Anartz Ayesta / *IK4 Lortek Research Centre*
PEDRO ÁLVAREZ • MARIA SAN SEBASTIAN • ALBERTO ECHEVERRÍA

D2I-P-TU-PS1-23 **Influence of alloy composition and dual phase microstructure on the strength elongation compromise in a lean duplex stainless steels**
Audrey Lechartier / *SIMAP, INPGrenoble St Martin D' Hères, , France*
NICOLAS MEYER • ALEXIS DE SCHAMPS • MURIEL VERON • GUILLAUME PARRY • MARC MANTEL

D2I-P-TU-PS1-24 **Effect of Nb Addition on the Microstructure and Mechanical Properties of Ti-5553 Alloy in different Heat Treatments**
Victor Opini / *Unicamp*

D2I-P-TU-PS1-25 **Effects of Molybdenum and Nickel on Microstructures after Hardening and Wear Resistance of Austenitic Manganese Steel**
Hichem Maouche / *Unité de Recherche Appliquée en Sidérurgie Métallurgie, URASM/CSC;*
ALI HADJI • KHEDIDJA BOUHAMLA

D2I-P-TU-PS1-26 **Mechanical Characterization of Tubes from Austenitic Stainless Steel as Reflection of Texture Rearrangements under Tensile Testing**
Olga Krymskaya / *National Research Nuclear University*
YURIY PERLOVICH • MARGARITA ISAENKOVA • VERA VAKHRUSHEVA

D2I-P-TU-PS1-27 **The influence of heat treatment on mechanical properties of twin-roll cast AZ31 magnesium alloy**
Mariia Zimina **/ Charles University In Prague, Faculty of Mathematics and Physics**
MICHAL HáJEK • JAN BOHLEN • DIETMAR LETZIG • GERRIT KURZ • MIROSLAV CIESLAR

D2I-P-TU-PS1-28 **Mechanical properties of the NiCoCrAlYTa alloy processed by press and sintering route**
Juan Carlos Pereira Falcón / *Instituto de Tecnología de Materiales, Universidad Politécnica de Valencia, España.*
JUAN JOSÉ CANDEL BOU • VICENTE AMIGÓ BORRAS

D2I-P-TU-PS1-29 **Low cycle fatigue behavior in AlMgSi aluminum alloys**
Denise Nascimento / *Escola de Engenharia de Lorena, Universidade de São Paulo - EEL-USP*
ANA MÁRCIA SILVA • SANDRO VICTOR ESPEZUA • CARLOS ANTONIO BAPTISTA

D2I-P-TU-PS1-30 **Static and dynamical ageing processes at room temperature in a Fe25Ni0.4C virgin martensite: effect of C redistribution at the nanoscale**
Allain Sébastien / *Arcelormittal Maizières Research, Maizières les Metz, FR*
DANOIX FRÉDÉRIC • GOUNÉ MOHAMED • HOUMMADA KHALID • MANGELINCK DOMINIQUE

D2I-P-TU-PS1-31 **Mechanical behaviour of aluminium alloys under different plastic strains using the Small Punch Test**
Isidoro Iván Cuesta Segura / *University of Burgos*
JESÚS MANUEL ALEGRE CALDERÓN • MIRIAM LORENZO BAÑUELOS

D2I-P-TU-PS1-32 **Microstructural and Mechanical characterization of ECO Mg-Y-Zn alloys.**
Gerardo Garces / *Centro Nacional de Investigaciones Metalúrgicas, Department of Physical Metallurgy, Madrid*
SHAE KIM • HYUN LIM • PABLO PÉREZ • PALOMA ADEVA

D2I-P-TU-PS1-33 **Tribological and mechanical properties of the CuSnZnBi alloys**
Szymon Malara / *Institute of Non-Ferrous Metals*
Joanna Kulasa / Witold Malec / Barbara Juszczyk / Ludwik Ciura / Beata Cwolek
LUKASZ WIERZBICKI

D2I-P-TU-PS1-34 **Heterogeneous epoxy networks from crosslinked polymer microparticle dispersions**
Marie-Laure Michon / *IMP@INSA*
JOCELYNE GALY • JEAN-FRANÇOIS GERARD • TAMARA DIKIC • TOM VERBRUGGE • LUDO AERTS

D2I-P-TU-PS1-35 **Heat treatment of duplex stainless steel sintered in nitrogen atmosphere**
Manuel Cisneros Belmonte / *ETSI de Minas - Universidad Politecnica de Madrid*
JOSÉ MANUEL RUIZ ROMÁN • MIGUEL SÁNCHEZ FERNÁNDEZ • FRANCISCO A. CORPAS IGLESIAS • LUIS E. GARCÍA CAMBRONERO

D2I-P-TU-PS1-36 **Deformability of microalloyed steels during semi-hot forming**
Mihaela Taca / *S.C.Metav-Cercetare de zvoltare S.A.*
ELVIRA ALEXANDRESCU • DAN CONSTANTINESCU

D2I-P-TU-PS1-37 **Micro-mechanical Behaviour of Porous Titanium Obtained by Space-Holder Techniques**
Juan J. Pavón / *University of Antioquia*
YADIR TORRES • YVES GAILLART • JOSÉ A. RODRÍGUEZ

D2I-P-TU-PS1-38 **Cold-worked austenitic stainless steels for structural applications: range of properties and manufacturing operations behaviour**
Nuria Parrado Márquez / *Acerinox Europa S.A.U.*
RAFAEL SÁNCHEZ RODRÍGUEZ • JOSÉ MARÍA CASTELLANOS JIMENEZ • JULIA CONTRERAS FORTES • RAQUEL GALÁN ORTEGA • DAVID SALES LÉRIDA

D2I-P-TU-PS1-39 **Experimental optimization methodology for cold formability assessment in stainless steel**
Raquel Galán Ortega / *Acerinox Europa S.A.U.*
RAFAEL SÁNCHEZ RODRÍGUEZ • JUAN FRANCISCO ALMAGRO BELLO • ANDRÉS NÚÑEZ GALINDO • NURIA PARRADO MÁRQUEZ • CARLOS DEL CAMPO DÍAZ • DAVID SALES LÉRIDA

D2I-P-TU-PS1-40 **Mechanical characterization of heterostructured zirconia electrolytes using instrumented indentation technique**
Miguel Morales / *Universitat de Barcelona*
JOAN JOSEP ROA • FILIPE M. FIGUEIREDO • JORGE R. FRADE • MERCÈ SEGARRA

D2I-P-TU-PS1-41 **Mechanical characterization using instrumented indentation technique of oxide scales of carbon steel in molten NaNO3-KNO3**
Mercè Segarra / *Universitat de Barcelona*
MIGUEL MORALES • MARÍA ELENA NAVARRO • MÒNICA MARTÍNEZ • ANA INÉS FERNÁNDEZ

D2I-P-TU-PS1-42 **Fracture behaviour of hot extruded aluminium-swarf hybrid material**
Manuel Cisneros / *ETSI Minas-UPM*
ESTHER SANCHEZ • LUIS E. GARCIA CAMBRONERO • JOSE MANUEL RUIZ-ROMAN • MIGUEL SANCHEZ

D2I-P-TU-PS1-43 **Effect of moisture on bonded repair composite durability of 2024 T3 aluminium alloy**
Rezgani Laid / *Dr Moulay Tahar University, Saida, Algeria*
FEAUGAS XAVIER • MADANI KOUIDER • TOUZAIN SEBASTIEN • BACHIR BOUIADJRA BELABBES

D2I-P-TU-PS1-44 **Characterization of two new resin and hardener systems for superconductive coil impregnation in the Large Hadron Collider (LHC)**
Ana Teresa Perez Fontenla / *Cern*
AHMED BENFKIH • SEBASTIEN CLEMENT • REMY GAUTHIER • ALEXANDRE GERARDIN • ROBERTO LOPEZ

D2I-P-TU-PS1-45 **Elastic anisotropy of Fe-C pearlite**
Javier Gil Sevillano / *CEIT and TECNUN, University of Navarra*
CARMEN BLANCO DEL PRADO • DIEGO GONZÁLEZ TORRES • JOSÉ MANUEL MARTÍNEZ-ESNAOLA

D2I-P-TU-PS1-46 **Development of Al-Si alloys by rheocasting and rapid solidification**
J Federico Chávez / *ESIQIE-National Polytechnic Institute of Mexico*
ALFREDO HERNÁNDEZ • EDGAR CORREA • CONRADO AFONSO • CLAUDIO S. KIMINAMI

D2I-P-TU-PS1-47 **Modeling of Creep-Fatigue Interaction Mechanisms in Alloy 617 at 950ºC Using a Multi-Scale Cohesive Zone Approach**
Hamouda Ghonem / *University of Rhode Island*
KIMBERLY MACIEJEWSKI

D2I-P-TU-PS1-48 **Influence of oxygen content on creep behavior of zirconium alloys at high temperature**
Raphäel Chosson / *MINES Paristech, Centre des Matériaux*
ANNE-FRANÇOISE GOURGUES • JÉRÔME CRÉPIN • VALÉRIE VANDENBERGHE • JEAN-CHRISTOPHE BRACHET

D2I-P-TU-PS1-49 **Bainitic Steel alloying with Boron (0 to 20 ppm)**
Rodolfo Rodriguez-Baracaldo / *Universidad Nacional de Colombia, Sede Bogotá*
MAURICIO SIERRA-CETINA • JHON JAIRO OLAYA-FLOREZ

D2I-P-TU-PS1-50 **Assessment of Ballistic Impact Damage via an Energy Audit involving FEM studies of Projectile de formation**
Erika Oberg / *Cambridge University*
JAMES DE AN • PAUL BOURKE • BILL CLYNE

D2I-P-TU-PS1-51 **Multiaxial high cycle fatigue assessment with the critical plane approach and Findley's criterion utilizing the finite element method**
Rafael Barea del Cerro / *Universidad Antonio de Nebrija*
SIMÓN JOSÉ NOVOA • BEATRIZ ACHIAGA • MONTSERRAT PICHEL • NURIA CANDELA

D2I-P-TU-PS1-52 **Correlation between AFM and Raman spectroscopy studies of chitosan films containing natural nanoliposomes for tissue engineering**
Hongyuan Zhang / *Institut Jean Lamour, Nancy, France*
JEAN-FRANÇOIS PIERSON • ELMIRA ARAB-TEHRANY • FRANCK CLEYMAND

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AREA D / CHARACTERISATION AND MODELLING

D2 / MECHANICAL CHARACTERISATION

D2II / In-situ Micro- and Nano-Mechanical Characterisation

D2II-P-TU-PS1-1 **Nanomechanics of Fibers beyond Linear Elasticity**
Benedikt Neugirg / *Physical Chemistry II, University of Bayreuth*
DANIEL KLUGE • JULIA SINGER • HANS-WERNER SCHMIDT • ANDREAS FERY

D2II-P-TU-PS1-2 **Elevated Temperature Micro-Plasticity of Indium Antimonide**
Jeffrey M. Wheeler / *EMPA - Materials Science and Technology*
ALEX MONTAGNE • LUDOVIC THILLY • RUDY GHISLENI • JOHANN MICHLER

D2II-P-TU-PS1-3 **Nano-mechanical elastic and inelastic characteristics of nanocomposites based on multiwall carbon nanotubes and polymers**
Anatoliy Onanko / *Kyiv National University*
NICK KULISH • SERGIY VYZHVA • YRIY ONANKO

D2II-P-TU-PS1-4 **Passive microrheology : non contact determination of gel point transition**
Christelle Tisserand / *Formulaction*
ROLAND RAMSCH • GIOVANNI BRAMBILLA • PASCAL BRU • GÉRARD MEUNIER

D2II-P-TU-PS1-5 **In-situ Laue micro-diffraction during shear test of single crystal copper**
Ainara Irastorza-Landa / *Materials Science and Simulations, NUM/ASQ, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland*
STEVEN VAN PETEGEM • DANIEL GROLIMUND • HELENA VAN SWYGENHOVEN

D2II-P-TU-PS1-7 **Evaluation of local mechanical properties of titanium alloys at the grain scale by coupling nanoindentation and EBSD techniques**
Cécile Fizanne / *INSA de Rennes*
MARILYNE CORNEN • PHILIPPE CASTANY • THIERRY GLORIANT

D2II-P-TU-PS1-8 **Novel methodology for high resolution strain mapping to high deformation levels**
Cemal Cem Tasan / *Max-Planck-Institut Für Eisenforschung*
DINGSHUN YAN • DIERK RAABE

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AREA D / CHARACTERISATION AND MODELLING

D2 / MECHANICAL CHARACTERISATION

D2III / Interface Failure in Thin Film Structure and Composite Materials

D2III-P-TU-PS1-1 **The role of an interlayer in titanium coatings on polyimide**
Aidan Taylor / *Durham University*
MEGAN CORDILL • LAWRENCE BOWLES • JOHANNES SCHALKO • GERHARD DE HM

D2III-P-TU-PS1-2 **Compression induced delamination of Au films on polyimide**
Megan J. Cordill / *Erich Schmid Institute of Materials Science*
BENJAMIN REVARD • JULIA BERGER • OLEKSANDR GLUSHKO • MATTHIAS BARTOSK • JOHN YEAGER

D2III-P-TU-PS1-3 **Interface Failure: Adhesive, Bonding and Composite Strength Evaluated by Centrifuge Technology**
Uwe Beck / *BAM*
STEFAN HIELSCHER • JANINE KERN • RENATE MIX • MATTHIAS WEISE • DIETMAR LERCHE • UWE RIETZ

D2III-P-TU-PS1-4 **Thermal stability of CrN and Cr(Al)N hard thin films.**
Nadjet Rouag / *Université Constantine 1*
FATIMA-ZOHRA MAMMERI • LOUNIS CHEKKOUR

D2III-P-TU-PS1-5 **Adhesion measurements of printed circuit boards using four point bending**
Megan Cordill / *Erich Schmid Institute of Materials Science*
JULIA BERGER • THOMAS KRIVEC • MARKUS KURZ

D2III-P-TU-PS1-6 **Determination of the effect of adhesion of salmon flesh portions to the walls of metal containers on PET coatings: evaluation of surface and functionality of coatings.**
Ernesto Zumelzu / *Universidad Austral de Chile*
OCIEL MUÑOZ • RICARDO UGARTE

D2III-P-TU-PS1-7 **Fracture, wear, and failure in hard film systems**
Rachel Schoeppner / *Purdue University / Bahr David*
SAMANTHA LAWRENCE • NEVILLE MOODY

D2III-P-TU-PS1-8 **Dynamic behavior to fatigue crack initiation of a glass/epoxy laminate**
Samir Lecheb / *University of Boumerdes, Algeria*
ABDELKADER NOUR • AHMED CHELLIL • TOUFIK DJEDID • RIDA LECHANI • HOCINE KEBIR

TUESDAY 10 SEPTEMBER 2013

AREA D / CHARACTERISATION AND MODELLING

D2 / MECHANICAL CHARACTERISATION

D2IV / Characterization of the Mechanical Aspects of Corrosion and Environmental de gradation

D2IV-P-TU-PS1-1
Degradation of Carbon Fiber-Epoxy Composites during Accelerated Ageing
Sergio González / *Center for Advanced Aerospace Technologies (FADA-CATEC)*
AMADÍS ZORRILLA • CARLOS GALLEGUILLOS • FERNANDO A. LASAGNI • JAIME DOMÍNGUEZ

D2IV-P-TU-PS1-2
Corrosion behaviour in 0.5M H2SO4 of duplex treated en 34CrNiMo6
Monica Dobra / *Politehnica University of Timisoara*
DRAGOS BUZDUGAN • FLORIN CORNEA • VLAD TUT • CRISTIAN CIOANA • IANCU SERBAN

D2IV-P-TU-PS1-3
Anodic oxidation of pure Aluminium in Sulphuric medium in the presence of Lactic Acid like Additive
Djamila Atmani / *Polytechnic Miltary School*
ABDENACER MERATI • FOUAD AIOUAZ

D2IV-P-TU-PS1-4
Effect of heat treatment of duplex stainless steel 2205 on resistance to corrosion in 2N sulfuric acid environment
Djama Mustapha / *Centre National de Recherche Scientifique Et Technique En Soudage Et Contrôle CSC*
BADJI RIAD • DOULACHE HAMID

D2IV-P-TU-PS1-5
Pitting Inhibition of 316L by Oxyanions in Fiber Dyeing Solutions
Seyda Karadirek / *Yalova University*
AHMET YILMAZ

D2IV-P-TU-PS1-6
Behaviour Mechanical of Alkali-Activated Cement as function of the temperature
Antonia Martin / *Euromat 2013*

D2IV-P-TU-PS1-7
Influence of the TRIP in the resistance to corrosion and wear of an AISI SAE 1045 steel heat treated since intercrítical temperatures
Carlos Arturo Bohórquez Ávila / *Universidad Libre*
JAVIER RODRIGUEZ • ALEJANDRA SABOGAL • JORGE MORENO

D2IV-P-TU-PS1-8
Microstructure evolution and mechanical properties of hot deformed Ti-Al-Fe-Si Alloys
Yong-Taek Hyun / Korea Institute of Materials Science (KIMS)
JONG-TAEK YEOM • CHAN-HEE PARK • JOO-HEE KANG • SEUNG-EON KIM

TUESDAY 10 SEPTEMBER 2013

AREA D / CHARACTERISATION AND MODELLING

D3 / MATERIALS MODELLING ON ALL LENGTH SCALES

D3II / Multiscale and Thermodynamics Modeling - from Atomic-Scale Properties to Macroscopic Behavior

D3II-P-TU-PS1-1
3D modeling of laser radiation transport in powder beds with high-dispersive metal particles
Evgeny Kharanzhevskiy / *Udmurt State University*
SERGEY KOSTENKOV

D3II-P-TU-PS1-2
Thermal behavior of crosslinked high density polyethylene nanocomposites with multi-walled carbon nanotubes
Konstantinos Chrissafis / *Physics Department, Aristotle University of Thessaloniki*
ELEFTHERIA ROUMELI • THEODORA KYRATSI • ELENI PAVLIDOU • GEORGIOS VOURLIAS • DIMITRIOS BIKIARIS

D3II-P-TU-PS1-3
Thermal characterization of beta-Polypropylene Random Copolymer/SiO2 nanocomposites
Konstantinos Chrissafis / *Physics Department, Aristotle University of Thessaloniki*
DIMITRIOS PAPAGERGIOU • DIMITRIOS BIKIARIS

D3II-P-TU-PS1-4
Elasto-plastic solution of stress-strain field at the crack tip in special specimens for mode II, III and II+III fatigue crack propagation
Jana Hornikova / *Faculty of Mechanical Engineering, Brno University of Technology*
PAVEL SANDERA • STANISLAV ZAK • JAROSLAV POKLUDA

D3II-P-TU-PS1-5 **Ab initio study of point defects in the spinels ZnRh2O4 and ZnIr2O4**
David Munoz Ramo / *University of Cambridge*
PAUL BRISTOWE

D3II-P-TU-PS1-6 **Influence of metallic inclusions on the shakedown load of elastic-plastic cracked plates**
Mohamed El Amine Belouchrani / *Ecole Militaire Polytechnique*

D3II-P-TU-PS1-7 **Coupled modeling of solid solution strengthening in aluminum alloys upon heat treatment**
Evgeniya Kabliman / *LKR Leichmetallkompetenzzentrum Ranshofen GmbH, Austrian Institute of Technology*

D3II-P-TU-PS1-8 **Simulation for dislocation core structure of iron alloy using generalized stacking fault energy**
Toshiharu Ohnuma / *Central Research Institute of Electric Power Industry (CRIEPI)*
KENICHI NAKASHIMA

D3II-P-TU-PS1-9 **PFC modeling of crystal growth phenomena on the atomic scale**
Muhammad Ajmal Choudhary / *Material and Process Simulations, University of Bayreuth, Germany.*
JULIA KUNDIN • HEIKE EMMERICH

D3II-P-TU-PS1-10 **Physics-based constitutive modeling for crystal plasticity finite element computation of cyclic plasticity in fatigue**
Nicolò Grilli / *Paul Scherrer Institut*
KOENRAAD JANSSENS • HELENA VAN SWYGENHOVEN

D3II-P-TU-PS1-11 **Spin Ice for Quantum Simulation**
Vitalii Kapitan / *Far Eastern Federal University*
KONSTANTIN NEFEDEV

D3II-P-TU-PS1-12 **Radiation rate constant simulation for a series of cyclometallated iridium complexes used in OLEDs as phosphorescent emitters**
Ksenia Komarova / *Photochemistry Center Russian Academy of Sciences*
ALEXANDER BAGATURYANTS • MIKHAIL ALFIMOV

D3II-P-TU-PS1-13 **Modeling of the structure and properties of amorphous functional layers for organic light-emitting diodes**
Svetlana Emelyanova / *Photochemistry Center, Russian Academy of Sciences*
VLADIMIR CHASHCHIKHIN • ALEXANDER BAGATURYANTS • MICHAEL ALFIMOV

D3II-P-TU-PS1-14 **Low-energy excitations study of Co adatom on Pt(111) surface**
Sergey Iskakov / *Ural Federal University*
MARIA VALENTYUK • VLADIMIR MAZURENKO

D3II-P-TU-PS1-15 **Investigation of the optimal conditions of the powder compaction in the axisymmetric case**
Andrey Buzyurkin / *Khristianovich Institute of Theoretical and Applied Mechanics Siberian Branch of RAS*
EVGENY KRAUS • YAROSLAV LUKYANOV

D3II-P-TU-PS1-16 **The effect of gradient microstructure on the properties of cast metal**
Olga Ogorodnikova / *Ural Federal University*
ELENA MAKSIMOVA

D3II-P-TU-PS1-17 **Clausius-Mossotti relation for half-infinite medium covered with a monolayer of nanoparticles**
Alexey Tishchenko / *National Research Nuclear University*
MIKHAIL RYAZANOV • MIKHAIL STRIKHANOV

D3II-P-TU-PS1-18 **Dielectric Permittivity near Interface with Local Field Effects**
Maxim Anokhin / *National Research Nuclear University*
MIKHAIL RYAZANOV • MIKHAIL STRIKHANOV • ALEXEY TISHCHENKO

D3II-P-TU-PS1-19 **Ab Initio Modeling of Spectral Properties and Charge-Transport Parameters for the Electron-Transporting Bebq2 Complex**
Alexander Bagaturyants / *Photochemistry Center, Russian Academy of Sciences*
ALEXANDRA FREIDZON • ANDREI SAFONOV

D3II-P-TU-PS1-20 **Analytical prediction of the properties of nanocomposite structures obtained by selective laser melting.**
Dariusz Grzesiak / *West Pomeranian University of Technology Szczecin*
WITOLD BIEDUNKIEWICZ • ANNA BIEDUNKIEWICZ • PAWEL FIGIEL

D3II-P-TU-PS1-21 **On the temperature dependence of the excess Gibbs energy of solutions**
George Kaptay / *Bay Zoltan Nonprofit Ltd*

D3II-P-TU-PS1-22 **Ab intio simulations of effect of chemical composition on thermodynamic and elastic properties of Ti and Zr alloys.**
Svetlana Barannikova / *Institute of Strength Physics and Materials Science, Tomsk*
IGOR ABRIKOSOV • ALENA PONOMAREVA • ANTON NIKONOV

D3II-P-TU-PS1-23 **A redox couple to control in situ oxygen potential in a nuclear fuel during irradiation**
Vanessa Pennisi / *Cea*
CHANTAL RIGLET-MARTIAL • PIERRE MATHERON • MERYL BROTHIER

TUESDAY 10 SEPTEMBER 2013
AREA D / CHARACTERISATION AND MODELLING
D3 / MATERIALS MODELLING ON ALL LENGTH SCALES

D3IV / Materials Modeling for Energy Applications

D3IV-P-TU-PS1-1 **Thermal expansion regulation of framework phosphates containing metals in oxidation state +2**
Elena Asabina / *Lobachevsky State University of Nizhni Novgorod*
VLADIMIR PET'KOV • IGOR SCHELOKOV • MAKSIM SUKHANOV • IVAN BOL'SHAKOV

D3IV-P-TU-PS1-2 **Material performance and corrosion control in fuel salts: focus on tellurium intergranular cracking**
Victor Ignatiev / *NRC Kurchatov Institute*
ALEXANDR SURENKOV • IVAN GNIDOY • OLGA FEYNBERG • VADIM UGLOV

D3IV-P-TU-PS1-3 **Stochastic modeling of molecular charge transport networks**
Ole Stenzel / *Ulm University*
BJOERN BAUMEIER • CARL POELKING • DE NIS ANDRIENKO • VOLKER SCHMIDT

D3IV-P-TU-PS1-4 **Effective conductivities of hot pressed semi-conducting materials**
Achraf Kallel / *Atomic and Alternative Energies Commission, LITEN Laboratory*
CHRISTOPHE L. MARTIN • GUILHEM ROUX

D3IV-P-TU-PS1-5 **Thermodynamic and Phase Diagram Investigation of the Lithium-Manganese-Oxygen System for Lithium Ion Batteries**
Damian Cupid / *Karlsruhe Institute of Technology*
ALEXANDRA REIF • PETER FRANKE • HANS SEIFERT

D3IV-P-TU-PS1-7 **Bulk and Surface Investigation of Mixed Transition Metal Olivine Phosphates LiM1-xMxPO4 (M=Mn, Fe, Co)**
Alina Osnis / *Institute for Nanotechnology and Advanced Materials, Bar-Ilan University*
MONICA KOSA • DORON AURBACH • DAN THOMAS MAJOR

D3IV-P-TU-PS1-8 **Pore-engineering of micro-structured materials for increased performance**
Silvan Suter / *EPFL*
VINCENT MATHIER • SOPHIA HAUSSENER

D3IV-P-TU-PS1-9 **Thermodynamic database development for ZrO2 –based systems and application for modeling of interaction in TRIP-steel matrix composite material**
Olga Fabrichnaya / *Technical University of Freiberg*
DMYTRO PAVLYUCHKOV

D3IV-P-TU-PS1-10 **Functionalization of Hydrogenated Silicene with Alkali and Alkaline Earth Metals; A DFT Driven Quest for Hydrogen Storage**
Tanveer Hussain / *Department of Physics and Astronomy, University of Uppsala*
THANAYUT KAEWMARAYA • SUDIP CHAKRABORTY • RAJEEV AHUJA

D3IV-P-TU-PS1-11 **Thermochemical Energy Storage and Thermal Upgrade: Modeling of Heat and Mass Transport**
Margarethe Molenda / *German Aerospace Center (DLR)*
MARIE HAAS • MARC LINDER • ANTJE WÖRNER

D3IV-P-TU-PS1-12 **Hydrogen desorption from MgH2 (001) surface by transition metal dopants: A first principles study**
Puspamitra Panigrahi / *Department of Physics and Astronomy, Uppsala University*
TANVEER HUSSEN • RAJEEV AHUJA

D3IV-P-TU-PS1-13 **Band Gap Engineering in BiNbO4 for Visible-Light Photocatalysis**
Baochang Wang / *Applied Materials Physics, Department of Materials and Engineering, Royal Institute of Technology (KTH), Stockholm*
JAWAD NISAR • CRISTIANE GOMES ALMEIDA • ARTUR JOSÉ SANTOS MASCARENHAS • LUCIANA ALMEIDA SILVA • DE NIS GILBERT FRANCIS DAVID • PASCAL BARGIELA • CARLOS MOYSES ARAUJO • RAJEEV AHUJA • ANTONIO FERREIRA DA SILVA

D3IV-P-TU-PS1-14 **On the decreasing of the materials dimensionality in Mg2(Si,Sn) solid solution: Impact on the electronic transport properties calculated by density-functional theory**
Hilal Balout / *Aix-Marseille University*
PASCAL BOULET • RECORD MARIE-CHRISTINE

D3IV-P-TU-PS1-15 **Density Functional Study of Yttrium Oxide Clusters**
Mrinalini de shpande / *Department of Physics, H. P. T. Arts & R. Y. Science College*
AMOL RAHANE

D3IV-P-TU-PS1-16 **Study of LO-phonon decay in semiconductors for hot carrier solar cells**
Hugo Levard / *IRDEP (Institut de R&D sur l'Energie Photovoltaïque)*
SANA LARIBI • JEAN-FRANÇOIS GUILLEMOLES

D3IV-P-TU-PS1-17 **Electronic transport in ZnO nanoribbons**
Abir de Sarkar / *Royal Institute of Technology (KTH), Applied Materials Physics*

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AREA E / ENERGY AND ENVIRONMENT

E1 / MATERIALS FOR RENEWABLE ENERGY

E1III / Materials for Fuel Cells

E1III-P-TU-PS1-1 **Anion Exchange Membranes for Fuel Cells**
Philippe Knauth / *Aix-Marseille University*
LUCA PASQUINI / MARIA LUISA DI VONA

E1III-P-TU-PS1-2 **Synthesis and characterization of Gd-doped and Gd/Y-codoped ceria**
Aleksej Zarkov / *Vilnius University*
SKIRMANTE BUTKUTE • SUKRU CEYLAN • AYSE UZTETIK MORKAN • STASYS TAUTKUS • AIVARAS KAREIVA

E1III-P-TU-PS1-3 **Proton conduction membranes based on highly phosphonated polymers**
Patric Jannasch / *Department of Chemistry, Lund University*
ARINDAM SANNIGRAHI • ZHECHENG SHAO • BAHAR BINGÖL

E1III-P-TU-PS1-4 **Ex-Situ N-Doped Carbon Nanotubes as Metal-Free Electrocatalysts for Oxygen Reduction Reactions**
Giulia Tuci / *ICCOM-CNR*
CLAUDIO ZAFFERONI • MASSIMO INNOCENTI • PRIMIANO D'AMBROSIO • LAPO LUCONI • GIULIANO GIAMBASTIANI

E1III-P-TU-PS1-5 **Double-perovskite Sr2Mg(Mo0.8Cr0.2)O6-d as anode material for solid oxide fuel cells**
María José Escudero / *Ciemat*
IGNACIO GÓMEZ DE PARADA • ARACELI FUERTE • LORETO DAZA

E1III-P-TU-PS1-6 **Synthesis, structural and electrical characterization of Cobalt-based perovskites LnBaCo2O5 (Ln = La,Y) for IT-SOFC applications**
Cinzia Cristiani / *Dipartimento di Chimica, Materiali e Ingegneria Chimica, CMIC, Politecnico Di Milano*
RENATO PELOSATO • ZAMPORI LUCA • GIOVANNI DOTELLI • MARIO MARIANI • ALESSANDRO DONAZZI • ISABELLA NATALI SORA

E1III-P-TU-PS1-7 **Proton conduction properties in Ca/Sr-doped Gd3GaO6**
Anastasia Iakovleva / *Lab. SPMS, Ecole Centrale Paris*
ANTHONY CHESNAUD • YANG HU • ALISTAR OTTOCHIAN • GUILHEM DE ZANNEAU

E1III-P-TU-PS1-8 **Effects of rhodium impregnation on the SOFC performance of Cu/Ca0.2Ce0.8O2+d active anode**
Araceli Fuerte / *Ciemat*
RITA XIMENA VALENZUELA • MARÍA JOSÉ ESCUDERO • LORETO DAZA

E1III-P-TU-PS1-9 **Electrocatalysts de rived from Metal-Organic Frameworks for Oxygen Reduction in Polymer Electrolyte Fuel Cells**
Adina Morozan / *Institut Charles Gerhardt de Montpellier, Université Montpellier II, Agrégats, Interfaces Et Matériaux Pour L'Energie*
VINCENT GOELLNER • MOULAY-TAHAR SOUGRATI • MARTA ZATON • DE BORAH JONES • FRÉDÉRIC JAOUEN

E1III-P-TU-PS1-10 **SANERGY HT as Metallic interconnects for SOFC: improved behaviour by cobalt protective coatings.**
Anna Magraso / *de p. Chemistry, University of Oslo*
JAN FROITZHEIM • JAN-ERIK SVENSSON • REIDAR HAUGSRUD

E1III-P-TU-PS1-11 **The Redox – Flow – Battery: de velopment of functional components**
Rolf Hempelmann / *Saarland University*
BEATE BRITZ • JULIA BAUMGARTEN

E1III-P-TU-PS1-12 **Water management in operating fuel cells: a small-angle scattering study**
Gérard Gebel / *SPrAM*
ARNAUD MORRIN • ZHE PENG • SANDRINE LYONNARD • STEFANO DE ABATE

E1III-P-TU-PS1-13 **Fuel cell testing of proton conducting LaNbO4-based electrolyte**
Anna Magraso / *de p. Chemistry, University of Oslo*
MARIE-LAURE FONTAINE • TRULS NORBY

E1III-P-TU-PS1-14 **Impact of strontium and lanthanum incorporation to supported Pt, Rh and Pt-Rh on alpha-Al2O3 in dry reforming of methane**
Madani Ghelamallah / *Laboratoire de Matériaux, Applications Et Environnement, Université de Mascara, Algeria*
PASCAL GRANGER

E1III-P-TU-PS1-15 **Effect of cerium and lanthanum on structure and superficial area of ZrO2**
Madani Ghelamallah / *Laboratoire de Matériaux, Applications Et Environnement, Université de Mascara, Algeria*
KOUBRA ARIBI • ZOHRA SOLTANI • PASCAL GRANGER

E1III-P-TU-PS1-16 **LoLiPEM: A research project on PEM fuel cells for stationary application supported by the Fuel Cells and Hydrogen Joint Undertaking**
Giuseppe Barbieri / *Itm-Cnr*
MARIA LUISA DI VONA • PHILIPPE KNAUTH • ROLF HEMPELMANN • DAVIDE BERETTA • MICHAEL SCHUSTER • LOURDES VEGA • ANNA STACHOWICZ

E1III-P-TU-PS1-17 **Stability of palladium -ruthenium supported on carbon black catalysts in electrooxidation of formic acid in Direct Formic Acid Fuel Cells**
Mikolajczuk-Zychora Anna / *Institute of Physical Chemistry Polish Academy of Sciences*
BORODZINSKI ANDRZEJ • KEDZIERZAWSKI PIOTR • STOBINSKI LESZEK

E1III-P-TU-PS1-18 **The influence of carbon nanotubes treatment on the catalytic properties of Pd/CNTs used in direct formic acid fuel cell**
Marta Mazurkiewicz / *Faculty of Materials Science and Engineering, Warsaw University of Technology*
ARTUR MALOLEPSZY • EWELINA CIECIERSKA • LESZEK STOBINSKI • KRZYSZTOF J. KURZYDLOWSKI

E1III-P-TU-PS1-19 **TiO2/MWCNTs nanocomposites as Pd catalyst support**
Artur Malolepszy / *Warsaw University of Technology, Faculty of Materials Science and Engineering*
MARTA MAZURKIEWICZ • KRZYSZTOF J. KURZYDLOWSKI • LESZEK STOBINSKI

E1III-P-TU-PS1-20 **Effects of redox pre-treatments on the CO oxidation activity of a Au/Ce0.62Zr0.38O2 catalyst**
Eloy de l Río / *University of Cadiz*

E1III-P-TU-PS1-21 **Calcium manganese oxides as heterogeneous water oxidation catalyst**
Carminna Ottone / *Center for Space Human Robotics, Istituto Italiano Di Tecnologia*
MARCO ARMANDI • SIMELYS HERNÁNDEZ • EDVIGE CELASCO • BARBARA BONELLI

E1III-P-TU-PS1-22 **Proton-conductor SOFCs with La27W4.5Nb0.5O55.25 8.75 electrolyte**
Lucía Dos Santos Gómez / *Department of Inorganic Chemistry, University of Malaga*
MARÍA JOSÉ ZAYAS REY • DAVID MARRERO LÓPEZ • ENRIQUE RAMÍREZ LOSILLA

E1III-P-TU-PS1-23 **Proton conductors based on alkaline-earth substituted La28-xW4+xO54+3x/2**
Lucía Dos Santos Gómez / *Department of Inorganic Chemistry, University of Malaga,*
DAVID MARRERO LÓPEZ • AURELIO CABEZA • LUCÍA DOS SANTOS-GÓMEZ • ENRIQUE RAMÍREZ LOSILLA

E1III-P-TU-PS1-24 **Optimization of Ni-YSZ Solid Oxide Fuel Cell anodes by surface laser melting**
Miguel A. Laguna-Bercero / *ICMA (CSIC-Universidad de Zaragoza)*
A. CUBERO • J. I. PEÑA

E1III-P-TU-PS1-25 **Obtaining YbScSZ substrates by aqueous tape casting for SOFC applications**
Mireia Blanes / *Francisco Albero S.A.U*
FRANCISCO RAMOS • XAVIER GARCIA

E1III-P-TU-PS1-26 **Sugarcane bagasse as a precursor for the synthesis of microporous carbon**
Stephen Carpenter / *University of Blumenau, Blumenau, Brasil*
DEYSE CARPENTER • RAFAEL SERAFINI • MARIA MADALENA CAMARGO FORTE

E1III-P-TU-PS1-27 **Influence of geometry and dimensions of flow fields in a proton exchange membrane fuel cell**
Deyse Carpenter / *University of Blumenau*
PABLO BELCHOR • BEATRIZ BERNS

TUESDAY 10 SEPTEMBER 2013

AREA E / ENERGY AND ENVIRONMENT

E2 / TRANSPORTATION AND MOBILITY

E2I / Lightweight Materials and Structural Solutions for Transport Applicaations /

E2I-P-TU-PS1-1 **Development of Reverse Drawing Process for Manufacture of High Capacity Aluminum Liner used in FCEV**
Seong-Hoon Kang / *Korea Institute of Materials Science*
HOWON LEE

E2I-P-TU-PS1-2 **Tribological properties of MMCp designed for metal forming.**
Jakub Wieczorek / *Silesian University of Technology, Faculty of Materials Engineering and Metallurgy*
JERZY MYALSKI

E2I-P-TU-PS1-3 **Energy absorption and microstructural characterisation of aluminium matrix syntactic foams**
Orbulov Imre Norbert / *Budapest University of Technology and Economics Faculty of Mechanical Engineering Department of Materials Science and Engineering*
MÁJLINGER KORNÉL

E2I-P-TU-PS1-4 **Design and manufacturing of a 8x8 advanced hybrid electric drive (ahed) demonstrator: materials and welding processes selection**
Rubén Coto González / *ITMA Materials Technology*
JAVIER BELZUNCE VARELA • RICARDO LEZCANO RUIZ • FRANCISCO JAVIER VIGIL CASTIELLO • RICARDO ÁLVAREZ FERNANDEZ • DANIEL DIAZ ÁLVAREZ • LUIS ÁLVAREZ BARRENA

E2I-P-TU-PS1-5 **Influence of temperature on the tensile deformation behavior of TWIP steel studied by EBSD**
Fusheng Han / *Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences*
XIANFENG DUAN • KUN WANG • DAN WANG

E2I-P-TU-PS1-6 **The effects of temperature variations during operational conditions on impact performance of polyamide composites in automotive engine applications**
James Njuguna / *Cranfeild Unversity*
IAN BUTTERWORTH • Z MOUTI • H ABHYANKAR • J BRIGHTON • K WESTWOOD

E2I-P-TU-PS1-7 **Advanced Simulation Technology for Material Strength and Fatigue Life of Highway Structures**
Amir Horr / *Austrian Institute of Technology*

E2I-P-TU-PS1-8 **Bendability of Cold-rolled HPF steel**
Won Seok Choi / *Graduate Institute of Ferrous Technology*
BRUNO C DE COOMAN

E2I-P-TU-PS1-9 **Electrochromic Ni–Ir oxide based thin films with optimized properties**
Ruitao Wen / *Uppsala University*

E2I-P-TU-PS1-10 **Rolling contact fatigue of rails**
Anna Zervaki / *University of Thessaly, Department of Mechanical Engineering*
GREGORY HAIDEMENOPOULOS • ANTONIOS GIANNAKOPOULOS

E2I-P-TU-PS1-11 **Design of ductile Mg alloys by combining ab initio and experimental methods**
Stefanie Sandlobes / *Max-Planck-Institut FÃ¼r Eisenforschung*
FULIN WANG • MARTIN FRIAK • ZONGRUI PEI • LIFANG ZHU • STEFAN ZAEFFERER • JÃ¶RG NEUGEBAUER • DIERK RAABE

E2I-P-TU-PS1-12 **Hybrid reinforced thermoplastics – production and properties**
Axel Von Hehl / *Stiftung Institut Für Werkstofftechnik*
KAI SCHIMANSKI • HENNING HASSELBRUCH • HANS-WERNER ZOCH

E2I-P-TU-PS1-13 **Al-Si coating behavior during hot stamping process with rapid heating**
ChangWook Lee / *Graduate Institute of Ferrous Technology, Pohang University of Science and Technology*
BRUNO C. DE COOMAN

THURSDAY 12 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A1 / MATERIALS FOR INFORMATION TECHNOLOGY

A1I / Ultrafast Laser Processing and Functionalization of Materials for Technological Applications

A1I-P-TH-PS2-1
Waveguide mode conditioning via slit shaped femtosecond laser pulses
Javier Solís / *Laser Processing Group (LPG). Instituto de Optica-CSIC, Madrid, Spain*
JESÚS DE L HOYO MUÑOZ • TONEY TEDDY FERNANDEZ • VÍCTOR BERDEJO • ANDRÉS FERRER • ALEXANDRO RUIZ DE LA CRUZ • JUAN VALLÉS • MIGUEL ÁNGEL REBOLLEDO • INÉS ORTEGA

A1I-P-TH-PS2-2
Laser Induced Periodic Surface Structures (LIPSS) inscribed in Cr over large areas with high uniformity upon fs-laser irradiation at high speed.
Javier Solís / *Instituto de Óptica 'Daza de Valdés' (CSIC)*
ALEXANDRO RUIZ DE LA CRUZ • RUTH LAHOZ • JAN SIEGEL • GERMÁN DE LA FUENTE

A1I-P-TH-PS2-3
Synthesis of zirconia based nanophosphors by laser ablation in liquid
Maria Rosa Nunes Soares / *de partamento de Física e I3N, Universidade de Aveiro*
A.J. FERNANDES • D.F. D.F. FRANCESCHINI • Y.T. XING • L. NACHEZ • TERESA MONTEIRO • FLORINDA COSTA

A1I-P-TH-PS2-4
2D strain map of femtosecond written waveguides in Lithium Niobate crystals
Gustavo Torchia / *Centro de Investigaciones Opticas CONICET La Plata CIC*
DANIEL JAQUE • MATIAS TEJERINA

A1I-P-TH-PS2-5
High power ultrafast lasers for high throughput micro-processing
Eric Mottay / *Amplitude Systemes*
CLEMENS HOENNINGER • FRANCK MORIN • YOANN ZAOUTER • MARTIN DE LAIGUE

A1I-P-TH-PS2-6
First-principles calculations of metal properties under ultrashort laser irradiation
Emile Bevillon / *Laboratoire Hubert Curien*
JEAN-PHILIPPE COLOMBIER • VANINA RECOULES • BASTIAN HOLST • RASVAN STOIAN

A1I-P-TH-PS2-7
Programmable focal point pulse shaper
Jorge Pérez Vizcaíno / *Institut de Noves Tecnologies de La Imatge (INIT), Universitat Jaume I, Castelló, Spain / Omel Mendoza Yero / Vincent Loriot*
GLADYS MÍNGUEZ VEGA • REBECA DE NALDA • LUIS BAÑARES • JESÚS LANCIS

A1I-P-TH-PS2-8
The role of diffractive focusing in femtosecond laser micromachining
Jorge Pérez Vizcaíno / *Institut de Noves Tecnologies de La Imatge (INIT), Universitat Jaume I, Castelló, Spain*
SALVADOR TORRES-PEIRÓ • OMEL MENDOZA-YERO • GLADYS MÍNGUEZ-VEGA • JESÚS LANCIS

A1I-P-TH-PS2-9
Surface modification of LiFePO4 cathode materials using ultrafast laser radiation
Melanie Mangang / *Karlsruhe Institute of Technology*
HANS JÜRGEN SEIFERT • WILHELM PFLEGING

A1I-P-TH-PS2-10
Fabrication of cladding waveguides in crystals by femtosecond laser inscription
Javier Vazquez de Aldana / *Universidad de Salamanca*
PABLO MORENO • NINGNING DONG • HONGLINANG LIU • YUECHEN JIA • FENG CHEN

A1I-P-TH-PS2-11
Reconstruction of low contrast waveguide index profile considering the evanescent field
Gustavo Torchia / *Centro de Investigaciones Opticas CONICET La Plata CIC*
DEMIAN BIASETTI • MATIAS TEJERINA

A1I-P-TH-PS2-12
Laser texturing 100CrMn6 bearing steel in cryogenic environment
Wojciech Napad£ek / *Military University of Technolgy*

A1I-P-TH-PS2-13
Influence of laser hardening bearing steel 100CrMn6 on the microstructure
Wojciech Napad£ek / *Military University of Technolgy*

A1I-P-TH-PS2-14
Influence of ablative laser texturing bearing steel 100CrMn6 on the microstructure and surface stereometry
Wojciech Napad£ek / *Military University of Technolgy*

A1I-P-TH-PS2-15
Preparation nanocrystalline micropadwelds by laser technology
Agnieszka Laber / *Exalo Drillig S.A. Centrum Zielona Góra and Military University of Technology (Both Institution)*
WOJCIECH NAPADLEK

A1I-P-TH-PS2-16
R&D Machines To de velop High Precision Pico-Femto-Second Laser Applications for The Industrial Market
Gonzalo Guadano / *Lasing, S.A*

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AREA A / FUNCTIONAL MATERIALS

A1 / MATERIALS FOR INFORMATION TECHNOLOGY

A1III / Materials and de vices for Sensing

A1III-P-TH-PS2-1
Rare-earth-doped phosphate glasses with interesting magneto-optical properties
Victor Kuncser / *National Institute of Materials Physics*
MIHAIL ELISA • BOGDAN SAVA • LUCICA BOROICA • MIHAELA VALEANU • RALUCA IORDANESCU • IONUT FERARU • ILEANA CRISTINA VASILIU

A1III-P-TH-PS2-2
Temperature effect on the growth of TiO2 nanotubes by anodic oxidation
Perillo Patricia / *Comisión Nacional de Energía Atómica*
RODRIGUEZ DANIEL

A1III-P-TH-PS2-3
Anodic formation of TiO2 nanotube on Ti films prepared by RF magnetron sputtering
Perillo Patricia / *Comisión Nacional de Energía Atómica*
RODRIGUEZ DANIEL

A1III-P-TH-PS2-4
Enhancement of metal to insulator transition temperature and Electroresistance in Ag doped Sm0.55Sr0.45-xAgxMnO3 (x = 0, 0.5, 0.10, 0.15)
Masroor Ahmad Bhat / *Research Scholar*
RENU CHOITHRANI • N.K. GAUR

A1III-P-TH-PS2-6
Flexible field-effect transistor gated via poly (acrylic acid) operating at low voltage
Liviu - Mihai Dumitru / *Department of Chemistry, University of Bari.*
KYRIAKI MANOLI • MARIA MAGLIULO • LUISA TORSI

A1III-P-TH-PS2-7
Polypyrrole Layers for Gas Sensing: Impedance Properties
Martin Vrnata / *Institute of Chemical Technology Prague, Department of Physics and Measurements*
DUSAN KOPECKY • JITKA SKODOVA • PREMYSL FITL

A1III-P-TH-PS2-8
Real-time and in-situ structural investigation on humidity sensors based on bis(ethylenedithio)-tetrathiafulvalene thin conductive films
Laura Ferlauto / *Istituto Per La Microelettronica E Microsistemi (IMM-CNR), Bologna, Italy*
VICTOR LEBEDEV • FABIOLA LISCIO • RAPHAEL PFATTNER • SILVIA MILITA • ELENA LAUKHINA • VLADIMIR LAUKHIN • CONCEPCIÒ ROVIRA • JAUME VEÇIANA

A1III-P-TH-PS2-9
Comparative performance of polymer based scintillators for X-ray sensors
Pedro Martins / *Centro/Departamento de Física, Universidade do Minho, Braga, Portugal / Pedro Martins*
VITOR CORREIA • GERARDO ROCHA • SENENTXU LANCEROS-MENDEZ

A1III-P-TH-PS2-10
Tunable Negative Differential Resistance Effect in Polypyrrole-polyTHF Composites/Gold heterojunction
Diego Cunha / *de partamento de Química Fundamental UFPE*
JORLANDIO FELIX • WALTER AZEVEDO • ERONIDES DA SILVA

A1III-P-TH-PS2-11
Structural phase transitions in LuFe2O4.
Javier Blasco / *Instituto de Ciencia de Materiales de Aragón (CSIC)*
SARA LAFUERZA • JOAQUÍN GARCÍA • GLORIA SUBÍAS • ANDREW FITCH

A1III-P-TH-PS2-12
A microporous luminescent Metal Organic Framework [Zn2(NH2-bdc)2(dabco)][G] as chemical sensor
Claudia Gómez-Aguirre / *Universidad de A Coruña*
MANUEL SÁNCHEZ-ANDÚJAR • BREOGÁN PATO-DOLDÁN • SUSANA YÁÑEZ-VILAR • JUAN BERMÚDEZ-GARCÍA • SOCORRO CASTRO-GARCÍA • MARIA-ANTONIA SEÑARÍS-RODRÍGUEZ

A1III-P-TH-PS2-13
Electrical performance of cermet electrodes for gas sensors
Xavier G. Capdevila / *Francisco Albero S.A.U.*
CARLOS LÓPEZ-GÁNDARA • JOSEP MARÍA FERNÁNDEZ-SANJUÁN • MIREIA BLANES • ALBERT CIRERA • FRANCISCO RAMOS

A1III-P-TH-PS2-14
Ultrasounds as a free-label technology for cell sensing in polymeric microfluidic chips
Itziar González / *Consejo Superior de Investigaciones Científicas*
MARIA TIJERO • JAVIER BERGANZO • ALAIN MARTIN • MOUNIR BOUALI • ADELA CASTILLEJO • VICTOR ACOSTA • JOSE LUIS SOTO

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AREA A / FUNCTIONAL MATERIALS

A2 / MAGNETIC AND MULTIFERROIC MATERIALS

A2III / Multiferroic Single-Phase and Composite Materials for Novel Magnetoelectric Technologies

A2III-P-TH-PS2-1
Multiferroic thin film nanoparticulate composites by rapid thermal processing of Co-implanted Pb(Mg1/3Nb2/3O3-PbTiO3 single crystals
Miguel Algueró / *Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas (CSIC)*
JESÚS RICOTE • HARVEY/MARÍA AMORÍN/TORRES • AURORA/OSCAR ALBERCA/IGLESIAS-FREIRE • NORBERT NEMES • MIRIAM JAAFAR • SUSANA HOLGADO • JUAN/MANUEL PIQUERAS/CERVERA • AGUSTINA ASENJO • MAR GARCÁ HERNÁNDEZ

A2III-P-TH-PS2-2
Composition and temperature-driven structural phase transitions in Bi1-xCaxFeO3 multiferroics
Uladzimir Khomchanka / *University of Coimbra*
IGOR TROYANCHUK • DANIEL TÖBBENS • VADIM SIKOLENKO • JOSE A PAIXAO

A2III-P-TH-PS2-3
Physical properties of YbFe2O4 and TmFe2O4
Sara Lafuerza Bielsa / *Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC-Universidad de Zaragoza, de partamento de Física de la Materia Condensada, Spain*
JOAQUÍN GARCÍA RUIZ • JAVIER BLASCO CARRAL • GLORIA SUBÍAS PERUGA

A2III-P-TH-PS2-4
Characterization of soft magnetic materials based on different magnetic particles and modified phenolic resin
Magdalena Streckova / *Institute of Materials Research, Slovak Academy of Sciences*
RADOVAN BURES • MARIA FABEROVA • JAN FUZER • PETER KOLLAR

A2III-P-TH-PS2-5
Enhancement of 2-2 composite interfaces using particulated composites
Michel Venet Zambrano / *Federal University of Sao Carlos*
WASHINGTON SANTA ROSA

A2III-P-TH-PS2-6
Crystallographic and magnetic studies of the BiMn2O5-CaMn2O4 compositions obtained by solid state reaction.
Octavio Peña / *Institut des Sciences Chimiques de Rennes UMR 6226, Université de Rennes 1, France*
RAFAEL FERREIRA • PAULO NORONHA LISBOA-FILHO

A2III-P-TH-PS2-7
Magnetic properties of (Bi1-xLaxFeO3)0.5(PbTiO3)0.5 ceramics prepared from mechanically synthesized powders
Mateusz Balcerzak / *Poznan University of Technology, Institute of Material Science and Engineering*
EWA MARKIEWICZ • BOZENA HILCZER • MIECZYSLAW JURCZYK • ANDRZEJEWSKI BARTLOMIEJ

A2III-P-TH-PS2-8
Microstructure and properties of Dy- and Tb- substituted BiFeO3 ceramics
Magdalena Streckova / *Institute of Materials Research, Slovak Academy of Sciences*
VLADIMIR KOVAL • IVAN SKORVANEK • HAIXUE YAN • JURAJ DURISIN • MIKE REECE

A2III-P-TH-PS2-9
First-principles study of structural,electronic and magnetic properties of BFN
Imene Cherair / *USTHB, Algiers, Algeria*
NADIA ILES • ABDELHAFID KELLOU

A2III-P-TH-PS2-10
FT NIR Raman studies of (Bi1-xLaxFeO3)0.5-(PbTiO3)0.5 solid solution obtained by mechanochemical synthesis.
Maria Polomska / *Institute of Molecular Physics, Polish Academy of Sciences*
JACEK WOLAK • BOZENA HILCZER • MAREK BALCERZAK • MIECZYSLAW JURCZYK • ADAM PIETRASZKO

A2III-P-TH-PS2-11
HR-TEM investigations in BiFeO3-PbTiO3 multiferroic ceramics
Ivair Santos / *Universidade Estadual de Maringá*
VALDIRLEI FREITAS • LUIZ CÓTICA

A2III-P-TH-PS2-12
Change in speed of electromagnetic, acoustic and spin waves in TbMnO3 with sinusoidal antiferromagnetic structure placed in external magnetic field
Dmitry Kuzmin / *Chelyabinsk State University / Igor Bychkov*
SERGEI LAMEKHOV • VLADIMIR SHAVROV

A2III-P-TH-PS2-13
Synthesis of Polyaniline-based Inks and Test de vice Printing Towards Electronic Applications
Daisy Accardo / *Center for Space Human Robotics@PoliTo, Istituto Italiano Di Tecnologia*
SERGIO BOCCHINI • ALESSANDRO CHIOLERIO • SAMUELE PORRO • NADIA GARINO • KASIA BEJTKA • DE NIS PERRONE • FABRIZIO PIRRI

A2III-P-TH-PS2-14
Ferroelectric Domain Configuration at the Interfaces of BiScO3-PbTiO3/NiFe2O4 Magnetoelectric Ceramic Composites
Harvey Amorín / *Instituto de Ciencia de Materiales de Madrid. CSIC, Cantoblanco, Spain*
NORBERTO SALAZAR • JESÚS RICOTE • ADRIANA GIL • ALICIA CASTRO • MIGUEL ALGUERÓ

A2III-P-TH-PS2-15
Effect of External Stresses on Spectrum of Coupled Waves in Orthorhombic Perovskite Manganites with Cycloidal Antiferromagnetic Structure
Igor Bychkov / *Chelyabinsk State University*
DMITRY KUZMIN • SERGEI LAMEKHOV • VLADIMIR SHAVROV

A2III-P-TH-PS2-16 **The influence of rare earth ions doping on the structure and magnetic properties of bismuth ferrite**
Daniela Cristina Berger */ University Politehnica of Buchrest*
ANDREEA IORGU • CRISTIAN MATEI • FLORENTINA MAXIM • NICOLAE STANICA

A2III-P-TH-PS2-17 **Effect of Sc doping on the electric properties of bismuth ferrite ceramics obtained via combustion methods**
Cristian Matei */ University Politehnica of Buchrest*
MIRELA DRAGOMIR • ADELINA IANCULESCU • DANIELA BERGER • LILIANA MITOSERIU • MIHAI CALUGARU • FELICIA PRIHOR

A2III-P-TH-PS2-18 **The comparison of broadband dielectric dispersion in BT-NZF composite ceramics prepared by different methods**
Robertas Grigalaitis */ Vilnius University, Faculty of Physics*
AURIMAS SAKANAS • JURAS BANYS • LILIANA MITOSERIU • VINCENZO BUSCAGLIA • PAOLO NANNI

A2III-P-TH-PS2-19 **Monte Carlo simulation of magnetic and thermodynamic properties of cold rolled Gd ribbons**
Sergey Taskaev */ Chelyabinsk State University*
VASILY BUCHELNIKOV • VLADIMIR SOKOLOVSKY • MARINA TUFATULLINA • DMITRY BATAEV • KONSTANTIN SKOKOV • VLADIMIR KHOVAYLO • DMITRY D. KARPENKOV • ANATOLIY PELLENEN • OLIVER GUTFLEISCH

A2III-P-TH-PS2-20 **Y-type hexaferrite obtained by the citrate sol-gel combustion method: a microwave material**
Roberto Lima */ Instituto de Pesquisas Da Marinha - IPqM*
MAGALI PINHO

A2III-P-TH-PS2-21 **Magnetic and Electrical properties of new solid solutions with adamantine-like structure**
Fernanda Lopez-Vergara */ Universidad de Chile*
ANTONIO GALDÁMEZ • VICTOR MANRIQUEZ • MIGUEL ALGUERÓ • OCTAVIO PEÑA

A2III-P-TH-PS2-22 **A new perovskite like MOF [(C3N2H5)][Mn(HCOO)3] with coexistence of magnetic and polar order**
Juan Manuel Bermúdez García */ Universidad de A Coruña*
BREOGAN PATO DOLDÁN • CLAUDIA GÓMEZ AGUIRRE • MANUEL SÁNCHEZ ANDÚJAR • ALFONSO FONDADO • JORGE MIRA • SOCORRO CASTRO GARCÍA • Mª ANTONIA SEÑARÍS RODRÍGUEZ

A2III-P-TH-PS2-23 **Electrophoretic de position of CoFe2O4 nanograins dispersed in a BaTiO3 matrix**
José Barbosa */ Centro de Física - Universidade Do Minho*
CACILDA MOURA • MARIO RUI PEREIRA • ISABEL GOMES • JORGE MENDES • BERNARDO ALMEIDA

A2III-P-TH-PS2-24 **Magnetoelectric properties of CoFe2O4/Pt/PZT multilayer thin films**
You Jeong Eum */ Yeungnam University*
SUNG-OK HWANG • CHANG YOUNG KOO • JUNGHO RYU • JAI-YEOUL LEE • HEE YOUNG LEE

A2III-P-TH-PS2-25 **An origin of enhanced magnetic and ferroelectric properties near rhombohedral-orthorhombic phase boundary in Bi1-xLaxFeO3 ceramics**
Dmitry Karpinsky */ University of Aveiro*
ANDREI KHOLKIN

A2III-P-TH-PS2-26 **Effect of substrate piezoelectric strain on the resistance of PCMO manganite thin films**
Isabel Gomes */ de partamento de Física Da Universidade Do Minho*
CÉLIA SOUSA • JOSÉ FERNANDES • JOÃO ARAÚJO • BERNARDO ALMEIDA

A2III-P-TH-PS2-27 **SPS vs. conventional sintering influence in dielectric properties of Ba2LnFeNb4O15 (Ln= La, Eu, Nd, Pr) TTB family.**
U-Chan Chung Seu */ ICMCB*
DOMINIQUE MICHAU • PIERRE HEIJBOER • MICHAËL JOSSE

A2III-P-TH-PS2-28 **Ceramics films fabricated by ink-jet printing**
Srdic Vladimir */ Department of Materials Engineering, Faculty of Technology, University of Novi Sad, Serbia*
JELENA VUKMIROVIC • AKHIL CHANDRAN MUKKATTU KUNIYIL • BOJANA MOJIC • AKOS KUKOVECZ • GORAN STOJANOVIC

A2III-P-TH-PS2-29 **Mechanosyntesis of multiferroic La-doped BiFeO3 perowskites in the entire composition range**
Pedro E. Sánchez Jiménez */ Instituto de Ciencia de Materiales-CSIC / Antonio Perejón*
LUIS A. PÉREZ MAQUEDA • JOSÉ M. CRIADO • NAHUM MASÓ • ANTHONY WEST

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AREA A / FUNCTIONAL MATERIALS

A3 / CARBON BASED MATERIALS

A3I / Carbon-containing Composites and Materials

A3I-P-TH-PS2-1
Porous nanocomposites based on carbon foam and intermetallic (Cu-Sn, Co-Sn, Ni-Sn) nanoparticles as funcional materials in the new generation energy storage systems
Ivania Markova / *University of Chemical Technology and Metallurgy, Department of Non-Ferrous Metals and Semiconductor Technologies*
TIHOMIR PETROV • VALENTINA MILANOVA • IVAN DE NEV

A3I-P-TH-PS2-2
Development and characterization of carbon-based composite materials for energy storage
Juan Carratalá-Abril / *AIJU*
LORENA REY-MARTÍNEZ • RUBÉN BENEITO-RUIZ • JOAQUÍN VILAPLANA-CERDÁ

A3I-P-TH-PS2-3
Kinetics of the generation and transport of the charge carriers in the PEPC-C60 system.
Olexandr Olasyuk / *Taras Shevchenko National University of Kyiv*
MYKOLA KULISH • OKSANA DMYTRENKO • MYKHAYLO ZABOLOTNYY • DMYTRO SLISARENKO

A3I-P-TH-PS2-4
Calculation of effective properties of graphite-polymer composites using a simple finite element method on graphics processing units
Giulio Scocchi / *Icimsi-Supsi*
ALBERTO ORTONA • LORIS GROSSI • GIOVANNI BIANCHI • CLAUDIO D'ANGELO • TIZIANO LEIDI • RAFFAELE GILARDI

A3I-P-TH-PS2-5
A New Method for Textural Characterizations of Various Carbon Fibers Using HRTEM
LianLong He / *Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Science*
GENGHENG ZHOU • YEQUN LIU

A3I-P-TH-PS2-6
Ag nanoparticles-coated CNF for electronics application
José María Gómez de Salazar / *Complutense University of Madrid*
Mª ISABEL BARRENA PEREZ • BEATRIZ PARRA • DAVID CONGOSTRINA

A3I-P-TH-PS2-7
Formation of graphitic rods with a carbon nanotube in the center
Shinn-Shyong Tzeng / *Tatung University*
YU-HON LIN

A3I-P-TH-PS2-8
Microstructure and properties of pure aluminum reinforced with carbon nanotubes
Marcin Rasinski / *Warsaw University of Technology*
MALGORZATA LEWANDOWSKA

A3I-P-TH-PS2-9
Nanodiamond Surface Functionalization by Phosphonic Dichloride de rivatives
Johan Alauzun / *Université Montpellier 2*
CHARLENE PRESTI • DANIELLE LAURENCIN • P. HUBERT MUTIN

A3I-P-TH-PS2-10
Calcium Phosphate Cements reinforced with Carbon Nanotubes for use as Biomaterial
Tiago Volkmer / *Unifra*
FERNANDO MACHADO • DAIANA SACILOTTO

A3I-P-TH-PS2-11
Thermal Properties of Copper Composites Reinforced with Carbon Nanotubes and Graphene
Andre Boden / *Freie Universität Berlin*
IZABELA FIRKOWSKA • STEPHANIE REICH

A3I-P-TH-PS2-12
Physicochemical studies of MWCNT reinforced hydroxyapatite-chitosan composites
Marek Wisniewski / *N. Copernicus University, Department of Chemistry, Physicochemistry of Carbon Materials Research Group, Torun, Poland*

A3I-P-TH-PS2-13
Improvement of dispersion and electromechanical properties of polyurethanes nanocomposites by grafting CNT
Mohamed Hedi Jomaa / *LGEF & MATEIS, INSA- Lyon*
MARIE CLAIRE DIB JAWHAR • LAURENCE SEVEYRAT • LAURENT LEBRUN • EMMANUEL BEYOU • JEAN YVES CAVAILLE • KARINE MASENELLI-VARLOT

A3I-P-TH-PS2-14
Electroplated copper composite films reinforced by MWCNT
Filomena Viana / *CEMUC, Faculdade de Engenharia Da Universidade Do Porto*
RÚBEN F. SANTOS • SÓNIA SIMÕES • MANUEL F. VIEIRA

A3I-P-TH-PS2-15 **Functionalized carbon nanofillers for hydrocarbon polymers**
Lucia Conzatti */ CNR, Institute for Macromolecular Studies (ISMAC) - UOS Genova*
MAURIZIO GALIMBERTI • VALERIA CIPOLLETTI • CRISTIAN GAMBAROTTI • MONICA GUENZI • MARCO MAURO • GIULIA SCALCIONE • INCORONATA TRITTO

A3I-P-TH-PS2-16 **Effect of single wall carbon nanotubes on the electrical properties of 3YTZP based ceramic nanocomposites**
Rosalía Poyato */ Inst. Ciencia de Materiales de Sevilla (CSIC-US).*
AURELIO GARCÍA-VALENZUELA • JULIO MACÍAS-DELGADO • ROBERT LUIS GONZÁLEZ-ROMERO • ÁNGELA GALLARDO-LÓPEZ • ANTONIO MUÑOZ • ARTURO DOMÍNGUEZ-RODRÍGUEZ

A3I-P-TH-PS2-17 **Microstructure and properties of Cu-graphene composites materials**
Szymon Malara */ Institute of Non-Ferrous Metals*
BARBARA JUSZCZYK • JOANNA KULASA • WITOLD MALEC • ŁUKASZ J. WIERZBICKI • JOANNA GOLĘBIEWSKA-KURZAWSKA

A3I-P-TH-PS2-18 **Poly(L-lactic acid)/GO nanocomposites: Preparation, thermal and dielectric study**
Dimitrios Bikiaris / *Aristotle University of Thessaloniki*
PANAGIOTIS KLONOS • ELIAS GIANNOULIDIS • GEORGE PAPAGEORGIOU • ZOE TERZOPOULOU • EVMORFIA DIAMANTI • DIMITRIOS GOURNIS • POLYCARPOS PISSIS

A3I-P-TH-PS2-20 **Effect of parameters of CVD process on characteristics of produced carbon nanomaterials**
Vasily Borisov */ Lomonosov Moscow State University*
RINAT ISMAGILOV • ALEXANDER OBRAZTSOV

A3I-P-TH-PS2-21 **Fabrication of mesophase pitch-derived open-pore carbon foams by replication processing**
José Miguel Molina */ University of Alicante*
RICHARD PRIETO • ENRIQUE LOUIS

A3I-P-TH-PS2-22 **Al/diamond composites: the influence of quality of the reinforcement on thermal conductivity**
José Miguel Molina Jordá */ Instituto Universitario de Materiales de Alicante, Universidad de Alicante*
IVONNE MONJE LOPEZ • ENRIQUE LOUIS CERECEDA

A3I-P-TH-PS2-23 **Anisotropy of graphite flakes-SiC particles/metal composites: electrical and thermal conductivities**
Richard Prieto */ Univerty of Alicante*
JOSÉ MIGUEL MOLINA • ENRIQUE LOUIS

A3I-P-TH-PS2-24 **Graphite flakes-(Fe/Co/Ni) particles/metal composites for power electronics**
Richard Prieto */ Univerty of Alicante*
ENRIQUE LOUIS • JOSÉ MIGUEL MOLINA

A3I-P-TH-PS2-25 **Imaging graphene at atom-scale in composite materials**
Nuria Baladés */ University of Cádiz*
DAVID SALES • PEDRO GALINDO • ANDRÉS RAYA • SERGIO MOLINA

A3I-P-TH-PS2-26 **Diels-Alder [4+2] cycloaddition between graphene oxide and maleic anhydride**
Mohamed Siaj */ Université du Québec à Montréal*
PATRICK BRISEBOIS • IZQUIERDO RICARDO

A3I-P-TH-PS2-27 **Mechanical properties of Si3N4-graphene multiplatelets prepared by the different processing routes**
Monika Kasiarová */ Institute of Materials Research, Slovak Academy of Sciences*
MONIKA MICHALKOVÁ • ALEXANDRA KOVALČÍKOVÁ • LENKA KVETKOVÁ • PAVOL SAJGALÍK • JÁN DUSZA

A3I-P-TH-PS2-28 **Preparation of new conductive thermosetting composites using low contents of particles**
Radouane Sellak */ Institut des Molécules et des Matériaux du Mans : UMR CNRS 6283, Département Polymères Colloïdes et Interfaces (PCI)-Université du Maine, Le Mans*
FREDERICK NIEPCERON • GUY LOUARN • JEAN-FRANÇOIS TASSIN

A3II / Carbon Nanotubes and Graphene

A3II-P-TH-PS2-1
Doping Graphene with Organic Molecules - A Theoretical Study
Angelos Giannakopoulos / *Chemistry of Novel Materials, UMONS*
LIPING CHEN • DAVID BELJONNE

A3II-P-TH-PS2-2
Effect of confined space reduction of graphite oxide followed by sulfur doping on oxygen reduction reaction in neutral electrolyte
Teresa Bandosz / *Department of Chemistry, the City College of New York*
MYKOLA SEREDYCH

A3II-P-TH-PS2-3
Control the edge structure of the nanographenes
Junzhi Liu / *Max Planck Institute for Polymer Research*
XINLIANG FENG • KLAUS MÜLLEN

A3II-P-TH-PS2-4
Hydrogen adsorption in cylindrical and planar graphene nanostructures and uncatalytic hydrogenation of decene-1 using this hydrogen
Anatoly Soldatov / *Topchiev Institute of Petrochemical Synthesis RAS*

A3II-P-TH-PS2-5
Comparing the multi-walled carbon nanotube functionalization produced by oxygen plasma and ozone in basic solutions and in the gas phase
F. Javier López-Garzón / *Universidad de Granada*
FRANCISCO MORALES LARA • MANUEL J. PÉREZ-MENDOZA • DE ISI ALTMAJER-VAZ • MIGUEL GARCÍA-ROMÁN • MANUEL MELGUIZO • MARÍA DOMINGO-GARCÍA

A3II-P-TH-PS2-6
Microwave cold plasma as a tool to chlorinate multi-wall carbon nanotubes
F. Javier López-Garzón / *Universidad de Granada*
VICTOR K ABDELKADER-FERNÁNDEZ • MANUEL J. PÉREZ-MENDOZA • CELESTE GARCÍA-GALLARÍN • MARÍA LUZ GODINO-SALIDO • MARÍA DOMINGO-GARCÍA

A3II-P-TH-PS2-7
Correlation between periodicity and growth activity of bimetallic Co-group VI/MgO catalysts for production of CNT by acetylene chemical vapor deposition
Ahmed Awadallah / *Egyptian Petroleum Research Institute*
ATEYYA ABOUL-ENEIN • NOHA ABOUL-GHEIT • OMNIA EL-AHWANY

A3II-P-TH-PS2-8
Hybrids materials for sensing devices: functionalised carbon nanotubes-based gas sensors for pollutants detection.
Amadou Ndiaye / *CNRS, UMR 6602, Institut Pascal*
JÉROME BRUNET • CHRISTELLE VARENNE • PIERRE BONNET • ALAIN PAULY • MARC DUBOIS • KATIA GUERIN • BERNARD LAURON

A3II-P-TH-PS2-9
Determination of the adsorption energy of a series of Polycyclic Aromatic Hydrocarbons (PAHs) on graphene
Maria Girolama del Rosso / *Institut de Science Et D'Ingénierie Supramoléculaires (I.S.I.S.) Université de Strasbourg*
CARLOS-ANDRES PALMA • ARTUR CIESIELSKI • PAOLO SAMORÌ

A3II-P-TH-PS2-10
Characterization of Carbon Nanomaterials with a confocal Raman-AFM
Elena Bailo / *WITec GmbH / Ute Schmidt*
THOMAS DIEING • OLAF HOLLRICHER

A3II-P-TH-PS2-11
Influence of the method of oxidation and the duration of the ultrasounds treatment on graphene characteristics
Patricia Alvarez Rodriguez / *Instituto Nacional de l Carbón, CSIC*
CRISTINA BOTAS • ANA PEREZ MAS • RICARDO SANTAMARIA • MARCOS GRANDA • CLARA BLANCO • LAURA ROMASANTA • RAQUEL VERDEJO • MIGUEL LOPEZ MANCHADO • ROSA MENENDEZ

A3II-P-TH-PS2-12
Surface modification of multiwalled carbon nanotubes by ball milling for the realization of polypropylene based nanocomposites
Pierfrancesco Cerruti / *Institute of Polymer Chemistry and Technology, National Council of Research of Italy*
VERONICA AMBROGI • GENNARO GENTILE • ROSA DI MAIO • CATERINA DUCATI • COSIMO CARFAGNA

A3II-P-TH-PS2-13
Special properties of carbon nanotubes (CNT) on the lateral surface of combustion engine piston
Maciej Babiak / *Poznan University of Technology*
ANTONI ISKRA • JAROSLAW KALUZNY

A3II-P-TH-PS2-14
The concept and research of the automotive oxidizing catalytic converter with carbon nanotube layer
Maciej Babiak / *Poznan University of Technology*
JAROSLAW KALUZNY • ANTONI ISKRA

A3II-P-TH-PS2-15
CNTs/epoxy nanocomposites for heating systems application
Paulina Chabera / *Warsaw University of Technology*
RAFAL KOZERA • ANNA BOCZKOWSKA

A3II-P-TH-PS2-16 **Functionalization of Carbon Nanotubes With Conjugated Polyelectrolytes and Formation of Multilayers Thin Films by Layer-by-Layer de position**
Wai Kin Chan / *The University of Hong Kong*
KIN CHEUNG LO • SHEUNG YIN LI

A3II-P-TH-PS2-18 **Tribological behavior of single-walled carbon nanotubes reinforced Al2O3**
Felipe Gutierrez-Mora / *Universidad de Sevilla*
ROSALÍA POYATO • ÁNGELA GALLARDO-LÓPEZ • ANTONIO MUÑOZ • ARTURO DOMÍNGUEZ-RODRÍGUEZ

A3II-P-TH-PS2-19 **Electrochemical Sensing of Acetaminophen on Electrochemically Reduced Graphene Oxide-Nafion Composite Film Modified Electrode**
Hayati Filik / *Istanbul University*
GAMZE ÇETINTAÞ • ASIYE AVAN • SEKAN N. KOÇ • ÝSMAIL BOZ

A3II-P-TH-PS2-20 **Growth and chemical functionalization of SiC-derived graphene and their electronic properties**
Mira Baraket / *Cea*
B KUMAR • G LAPERTOT • F DUCLAIROIR • L DUBOIS • G BIDAN • P MALDIVI • F LEFLOCH

A3II-P-TH-PS2-21 **Electrophoretic deposition of carbon nanotubes and their dispersion in organic solvents**
Ali Can Zaman / *Kocaeli University*
FIGEN KAYA • CENGIZ KAYA

A3II-P-TH-PS2-22 **Few-Layer Graphene - Li Sandwich-Like Structures**
Arkady Ilyin / *National Nanolab Kazakh National University*

A3II-P-TH-PS2-23 **Electrochemical Reduction of Oxygen on Modified Multi-walled Carbon Nanotubes with Diazonium Salts**
Anca Dumitru / *School of Chemical Engineering and Advanced Materials, Newcastle University*
KEITH SCOTT

A3II-P-TH-PS2-24 **Unraveling the role of coated AuNP in P3HT-based organic field-effect transistors**
Thomas Mosciatti / *Nanochemistry Laboratory, Université de Strasbourg, France*
P SAMORÌ • C RAIMONDO • E ORGIU

THURSDAY 12 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A4 / FUNCTIONAL NANOSTRUCTURES AND SELF ASSEMBLED MATERIALS

A4I / Semiconductor Nanowires: Synthesis, Characterisation and Applications

A4I-P-TH-PS2-1 **Influence of the surface modification of SnO2 nanowires on their current-voltage curves**
Alan Man Ching Ng / *The University of Hong Kong*
XIANG LIU • XINYI CHEN • YU HANG LEUNG • ALEKSANDRA B DJURISIC • WAI KIN CHAN

A4I-P-TH-PS2-2 **Heat treatment conditions effect on optical and photocatalytic properties of refluxed nano-particles TiO2.**
Kamel Atamnia / *Département de Génie des Procédés, université de Jijel-Algérie.*
HAMID SATHA • ABDELKRIM CHEMSEDDINE

A4I-P-TH-PS2-3 **Correlation between structural and optical properties of ZnO nanowires irradiated with low energy Ar+ ions**
David González Robledo / *1Dpto. Ciencia de los Materiales e Ingeniería Metalúrgica y Q.I., Facultad de Ciencias,Puerto Real (Cádiz), Spain*
RABIE FATH ALLAH • TERESA BEN FERNÁNDEZ • JOSÉ LUIS PLAZA • VANESA HORTELANO • OSCAR MARTÍNEZ

A4I-P-TH-PS2-4 **Microstructural and optical characterization of ZnO/Ag crystals grown by laser assisted flow deposition**
Joana Rodrigues / *Departmento de Física & I3N, Universidade de Aveiro*
R. ALLAH • DAVID GONZALEZ • TERESA BEN • MARIA CORREIA • TERESA MONTEIRO • FLORINDA COSTA

A4I-P-TH-PS2-5 **Growth and luminescence properties of Al- and In- doped ZnS nanostructures**
Belén Sotillo / *Universidad Complutense de Madrid*
PALOMA FERNÁNDEZ • JAVIER PIQUERAS

A4I-P-TH-PS2-6 **Synthesis and Characterization of Symmetrical 3-D Structures of Conducting Polymer Polypyrrole**
Jitka Skodová / *Institute of Chemical Technology Prague*
DUŠAN KOPECKÝ • MARTIN VRÒATA • PØEMYSL FITL

A4I-P-TH-PS2-7 **Luminescence of rare earth-implanted MoO3 nanoplatelets and lamellar single crystals**
Carlos Díaz-Guerra / *de pto. Física de Materiales, Facultad de Físicas, Universidad Complutense de Madrid*
MARÍA VILA • DIANA JEREZ • KATHARINA LORENZ • JAVIER PIQUERAS • EDUARDO ALVES

A4I-P-TH-PS2-8 **Super-water and highly-oil repellent surfaces based on 1D organic and hybrid supported heterostructures**
A. Nicolas Filippin / *Institute of Materials Science of Seville (CSIC-U. Sevilla), Nanotechnology on Surfaces Laboratory*
MANUEL MACIAS-MONTERO • ANGEL BARRANCO • AGUSTIN R. GONZALEZ-ELIPE • ANA BORRAS

A4I-P-TH-PS2-9 **Growth of SnS van der Waals Epitaxy on Mica**
Charles Surya / *Department of Electronic and Information Engineering, The Hong Kong Polytechnic University*
SHIFENG WANG • WAI KEUNG FONG

A4I-P-TH-PS2-10 **Characteristic of hybrid bonding nature using Atomic force microscopy with carbon-nanotube Tip**
Eunmi Choi / *Department of NanoBio and Engergy Engineering, Graduate School Chung-Ang University*
SOON HYEONG KWON • YINHUA CHU • AREUM KIM • HEE SOO CHOI • SEONJEA LEE • SUNG GYU PYO

A4I-P-TH-PS2-11 **Selective growth of vertical ZnO nanowires arrays on patterned seeded substrates**
Marco Laurenti / *Istituto Italiano Di Tecnologia, Centre for Space Human Robotics*
ALESSIO VERNA • MARCO FONTANA • SAMUELE PORRO

A4I-P-TH-PS2-12 **Al incorporation effect on nanostructured AlInN deposited by RF sputtering at low temperature**
Arántzazu Nuñez / *Universidad de Alcalá*
LAURA MONTEAGUDO • MIGUEL GONZÁLEZ • FERNANDO B. NARANJO • ANTONIO J. LÓPEZ

A4I-P-TH-PS2-13 **Spatial distribution of optically active defects in self-catalyzed ZnO nanostructures**
Filippo Fabbri / *IMEM-CNR Institute, Parma (Italy)*
MARCO VILLANI • ALESSANDRA CATELLANI • ARRIGO CALZOLARI • BENJAMIN DIERRE • DAVIDE CALESTANI • ANDREA ZAPPETTINI • TAKASHI SEKIGUCHI • GIANCARLO SALVIATI

A4I-P-TH-PS2-14 **Mechanical Properties-Low Dimensionality de pendence in Silicon Nanowires (SiNWs) for Good Performance of Nanodevices.**
Linda Achou / *Université Badji-Mokhtar, Annaba (Algeria)*
ABDELLAZIZ DOGHMANE • ZAHIA HADJOUB

A4I-P-TH-PS2-15 **1D and 2D Cu-Si-Ge nanobjects prepared by the CVD method**
Mariana Klementová / *Institute of Physics of The AS CR, V.V.I.*
LUKÁŠ PALATINUS • FILIP NOVOTNÝ • RADEK FAJGAR • JAN ŠUBRT • VLADISLAV DØÍNEK

A4I-P-TH-PS2-16 **Specific features of Si-MOSFET technology with periodically doped channel based on self-forming nanostructures**
Oleg Orlov / *Molecular Electronics Research Institute, Moscow*
VALERY SMIRNOV • GENADY KRASNIKOV • VICTOR MURASHEV

THURSDAY 12 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A4 / FUNCTIONAL NANOSTRUCTURES AND SELF ASSEMBLED MATERIALS

A4II / Nanopowders for Applications in Biology, Medicine, Photonics and Photovoltaics

A4II-P-TH-PS2-1 **Preparation of Magnetic Nanocomposit on Graphitic Matrix**
Tural Mammadov / *Institute of Chemical Problems Academy of Science of Azerbaijan*

A4II-P-TH-PS2-2 **Raman study of surface optical phonons in ZnO(Co) nanoparticles**
Branka Hadzic / *Institute of Physics, University of Belgrade,Belgrade, Serbia*
NEBOJSA ROMCEVIC • MAJA ROMCEVIC • IZABELA KURYLISZYN-KUDELSKA • WITOLD DOBROWOLSKI • URSULA NARKIEWICZ • DANIEL SIBERA

A4II-P-TH-PS2-3 **Optical properties of Cd1-xMnxS nanoparticles**
Milica Petrovic Damjanovic / *Institute of Physics, University of Belgrade, Serbia*
MAJA ROMCEVIC • NEBOJSA ROMCEVIC • WITOLD DANIEL DOBROWOLSKI • MIRJANA COMOR

A4II-P-TH-PS2-4 **Optical properties of CdTe/ZnTe self-assembled quantum dots**
Martina Gilic / *Institute of Physics, University of Belgrade, Serbia*
NEBOJSA ROMCEVIC • MAJA ROMCEVIC • RADMILA KOSTIC • GRZEGORZ KARCZEWSKI • ROBERT GALAZKA

A4II-P-TH-PS2-5 **Luminescent Improvement of Al3+ Effect on (Gd, Eu)WO3 Phosphors**
Gil Jae Lee / *Korea Institute of Industrial Technology*
TAEK SOO KIM • BUM SUNG KIM

A4II-P-TH-PS2-6 **Characterization and Dielectric Properties of Two Dimensional PbGeSe disordered Alloys**
Zeinab Elmandouh / *National Research Center*

A4II-P-TH-PS2-7 **Hybrid core-shell gold nanoshell/silica nanomaterials for nanomedicine**
Joachim Allouche / *Iprem-Ecp Cnrs/uppa*
SAMANTHA SOULÉ • JEAN-CHARLES DUPIN • HERVÉ MARTINEZ

A4II-P-TH-PS2-8 **Hybrid semiconductor nanomaterial to be used in dye sensitized solar cells**
Teresa Aguilar / *de partamento de Química Física, Universidad de Cádiz*
JAVIER NAVAS • RODRIGO ALCÁNTARA • DE SIREÉ M. DE LOS SANTOS • JUAN JESÚS GALLARDO • ANTONIO SÁNCHEZ-CORONILLA • DAVID ZORRILLA • JESÚS SÁNCHEZ-MÁRQUEZ • JOAQUÍN MARTÍN-CALLEJA • CONCHA FERNÁNDEZ-LORENZO

A4II-P-TH-PS2-9 **A comparison between Cu and Al-doped Tio2 nanomaterials for photovoltaic and photocatalytic applications**
Teresa Aguilar / *de partamento de Química Física, Universidad de Cádiz*
JAVIER NAVAS • RODRIGO ALCÁNTARA • DE SIREÉ M. DE LOS SANTOS • JUAN JESÚS GALLARDO • ANTONIO SÁNCHEZ-CORONILLA • DAVID ZORRILLA • JESÚS SÁNCHEZ-MÁRQUEZ • JOAQUÍN MARTÍN-CALLEJA • CONCHA FERNÁNDEZ-LORENZO

A4II-P-TH-PS2-10 **How water adsorption influences a polarized (001) BTO slab: a DFT calculation**
Alistar Ottochian / *Lab. SPMS, Ecole centrale Paris, Chatenay-Malabry, France.*
GUILHEM DE ZANNEAU • IGOR KORNEV

A4II-P-TH-PS2-11 **CdS nanoparticles elaborated by chemical bath deposition**
Benghabrit Siham / *University of Science and Technology Mohamed Boudiaf*
CHAUMONT DE NIS • ADNANE MOHAMED

A4II-P-TH-PS2-13 **ZnO Nanostructures onto Chitosan Hydrogels**
Didem Omay / *Euromat 2013*
BAYRAM KILIÇ • NAZLI OZCAN • PINAR AKAY

A4II-P-TH-PS2-14 **Luminescent Down-Shifting via QD/PMMA films: The effect of QD concentration on optical performance.**
Stuart Irvine / *Centre for Solar Energy Research, Glyndwr University*
SIMON HODGSON • WILLIAM BROOKS • ANDREW CLAYTON • GIRAY KARTOPU • DANIEL LAMB • VINCENT BARRIOZ

A4II-P-TH-PS2-15 **Influence of InxGa1-xP composition modulation on the tunnel junctions of multi-junction solar cells**
Carlo Enzo Pastore / *Universidad de Cádiz*
MARINA GUTIERREZ PEINADO • DANIEL ARAUJO GAY • EGBERT RODRÍGUEZ-MESSMER

A4II-P-TH-PS2-16 **Self-organization of Cyanine Dye Molecules in Thin Films on Various Substrates**
Anton Starovoytov / *St. Petersburg National Research University of Information Technologies, Mechanics and Optics*
VALENTINA KRUTYAKOVA • ELENA KALITEEVSKAYA • TATIANA RAZUMOVA

THURSDAY 12 SEPTEMBER 2013

AREA A / FUNCTIONAL MATERIALS

A4 / FUNCTIONAL NANOSTRUCTURES AND SELF ASSEMBLED MATERIALS

A4IV / Functional Nanostructures Oxides and Hydroxides

A4IV-P-TH-PS2-1 **Influence of outdoor temperatures on the self-cleaning performance of photocatalytic dense, mesoporous and nanoparticled TiO2 films**
Erika Iveth Cedillo González / *Università de gli Studi Di Modena E Reggio Emilia*
RAFFAELE RICCO' • MAURO MONTORSI • MONIA MONTORSI • CRISTINA SILIGARDI • PAOLO FALCARO

A4IV-P-TH-PS2-2 **Synthesis and characterisation of Self-organised TiO2 nanotubes on Ti13Nb13Zr**
Juan Manuel Hernández López / *CENIM/CSIC*
ANA CONDE DEL CAMPO • JUAN DE DAMBORENEA GÓNZALEZ • MARÍA ANGELES ARENAS VARA

A4IV-P-TH-PS2-3 **Influence of annealing temperature on the structure of TiO2 nanomaterials synthesized using 2Ball Mill" method**
Desireé M. de Los Santos / *Universidad de Cadiz*
CONCHA FERNÁNDEZ-LORENZO • RODRIGO ALCÁNTARA • JAVIER NAVAS • TERESA AGUILAR • ANTONIO SÁNCHEZ-CORONILLA • DAVID ZORRILLA • JESÚS SÁNCHEZ-MARQUEZ • JOAQUÍN MARTÍN-CALLEJA

A4IV-P-TH-PS2-4 **High Temperature Oxidation of NiZrY Powder and Bulk Material for Producing Functional Metal-Ceramic-Compounds**
Lars Fuhrmann / *University Bayreuth*
RAINER VÖLKL • UWE GLATZEL

A4IV-P-TH-PS2-5 **Enhacement of the photocatalytic activity of a-Fe2O3 nanoparticles through the preparation of composites with resorcinol-formaldehyde fibers**
Almudena Benítez / *Universidad de Córdoba*
RAFAEL SUGRÁÑEZ • LUIS SÁNCHEZ • JULIÁN MORALES

A4IV-P-TH-PS2-6 **Tuning a-Fe2O3 particles size and morphology to obtain advanced photocatalyst materials**
Rafael Sugráñez / *Universidad de Córdoba*
LUIS SÁNCHEZ • JULIÁN MORALES • JOSÉ BALBUENA

A4IV-P-TH-PS2-7 **Structural and electronic structure studies of the TaxOy and Pt/TaxOy thin films**
Anna Nowak / *A. Chelkowski Institute of Physics, University of Silesia, Katowice, Poland*
KRZYSZTOF SZOT • JACEK SZADE • SEBASTIAN SCHMELZER

A4IV-P-TH-PS2-8 **Elaboration of AFM lithography of nanostructured Ti/TiOx/Ti tunnel junction**
Martine Le Berre / *Lyon Institute of Nanotechnology (INL), University of Lyon*
Nicolas Guillaume / Etienne Puyoo / David Albertini / Nicolas Baboux
CÉLINE CHEVALIER • KHALIL EL HAJJAM • BRICE GAUTIER • FRANCIS CALMON

A4IV-P-TH-PS2-9 **Resonant Photocurrent Generation in nanostructured Sensitized TiO2 Photoconductors by Optical Field Confinement Effects**
Miguel Anaya / *Instituto de Ciencias de Materiales Sevilla (CSIC-US)*
MAURICIO CALVO • JOSÉ MIGUEL LUQUE • HERNÁN MÍGUEZ

A4IV-P-TH-PS2-10 **Ni-Zr-Y with addition of Pt – Characterization of an in-situ produced catalyst**
Michael Terock / *Universität Bayreuth, Lehrstuhl Metallische Werkstoffe*
CHRISTIAN KONRAD • RAINER VÖLKL • UWE GLATZEL

A4IV-P-TH-PS2-11 **Compoaitional and structural study of nanostructured ZNO thin films grown by oblique angle reactive spottering deposition: control of the refractive index**
Ramon Escobar Galindo / *Instituto de Ciencia de Materiales de Madrid,(ICMM-CSIC) (Spain)*
DIANA TOLEDANO • ANA ISABEL PEREZ-CHECA • OLGA SANCHEZ

A4IV-P-TH-PS2-12 **Mn3O4 Magnetic Nanocomposites for de gradation of Methylene Blue**
Gabriela Silva / *UFMG*
VIRGINIA CIMINELLI • ANGELA FERREIRA

A4IV-P-TH-PS2-13 **Designing a "Green" Nanostructured Catalytic Material for the Sustainable Production of Hydrogen**
Antonio Chica / *Instituto de Tecnología Química UPV-CSIC*
JAVIER FRANCISCO DA COSTA-SERRA • JUAN CARRATALA • RUBEN BENEITO • LUIS REY

A4IV-P-TH-PS2-14 **Formation nanotubes and phase transformations kinetic in Ti-Nb-Sn alloys**
Alessandra Cremasco / *Unicamp*
NATALIA C VERISSIMO • CHRISTIANE A RODRIGUES • RODNEI BERTAZOLLI • RITA JACON • RUBENS CARAM

A4IV-P-TH-PS2-15 **Structural and magnetic properties of ZrO2(Fe, Mn) nanoparticles**
Izabela Kuryliszyn-Kudelska / *Institute of Physics Polish Academy of Sciences*
MONIKA ARCISZEWSKA • ARTUR MALOLEPSZY • MARTA MAZURKIEWICZ • LESZEK STOBINSKI • VICTOR DOMUKHOVSKI • NATALIA NEDELKO • AGNIESZKA GRABIAS • MICHAL KOPCEWICZ • WITOLD DOBROWOLSKI

A4IV-P-TH-PS2-16 **Effect of sodium silicate modification with nanoparticles of magnesium oxide on its wettability of quartz grains and viscosity.**
Angelika Kmita / *AGH University of Science and Technology. Faculty of Foundry Engineering.*
BARBARA HUTERA • DARIUSZ DROZYNSKI • ARTUR BOBROWSKI

A4IV-P-TH-PS2-17 **Electronic properties of nano-WO3 thin films determined by photoelectrochemistry, soft x-ray spectroscopy ans density functional calculations**
Malin B Johansson / *Division of Solid State Physics, Department of Engineering Sciences, The Ångström Laboratory,Uppsala University,Sweden*
PAW KRISTIANSEN • GUSTAVO BALDISSERA • STEN-ERIC LINDQVIST • LAURENT DUDA • CLAS PERSON • GUNNAR A NIKLASSON • LARS ÖSTERLUND

THURSDAY 12 SEPTEMBER 2013

AREA B / STRUCTURAL MATERIALS

B4 / COMPOSITE, HYBRID AND MULTI-SCALED STRUCTURAL MATERIALS

B4I / Hybrid and Metal-Organic Framework Materials

B4I-P-TH-PS2-1 **New generation of hybrid material for integrated optics based on vinyl ether alkoxysilane**
Saly Yaacoub / *Charles Coulomb Laboratory, University of Montpellier 2,France*
SYLVIE CALAS-ETIENNE • JIHANE JABBOUR • RABIH TAUK • AHMAD MEHDI • ANTONIO KHOURY • PASCAL ETIENNE

B4I-P-TH-PS2-2 **Ab Initio Investigation into the Hydration Mechanism of IRMOFs**
François-Xavier Coudert / *Chimie ParisTech & CNRS*
MARTA DE TONI • PLUTON PULLUMBI • ALAIN FUCHS

B4I-P-TH-PS2-3 **Hierarchical porosity in metal-organic frameworks (MOFs) using block copolymer templates**
Shuai Cao / *de pt of Materials Science, University of Cambridge*
GUILLAUME GODY • WEI ZHAO • SÉBASTIEN PERRIER • JING WEI • DONGYUAN ZHAO • ANTHONY CHEETHAM

B4I-P-TH-PS2-4 **ZIF flexibility through experiments and simulations: swing effect of imidazolate rings on SOD topology**
David Fairen-Jimenez / *University of Cambridge*

B4I-P-TH-PS2-5
Inclusion of transition metal cations into RhoZMOF structure
Jose Antonio Villajos / *Rey Juan Carlos University*
GUILLERMO CALLEJA • CARMEN MARTOS • JUAN ÁNGEL BOTAS • GISELA ORCAJO

B4I-P-TH-PS2-7
New porous M4+ (Zr, Ti) based MOFs: from poly-carboxylate to naturally occurring -carboxyphenolate ligands
Thomas de Vic / *Institut Lavoisier, CNRS - Universite de Versailles*
FLORENCE RAGON • LUCY COOPER • LAURA PARDO • ANA LAGO • NATHALIE GUILLOU • CHARLOTTE MARTINEAU • CHRISTIAN SERRE • GUILLAUME CLET • ALEXANDRE VIMONT

B4I-P-TH-PS2-8
Covalent functionalization of carbon nanotubes with iridium-NHC complexes for catalisys applications
Patricia Alvarez Rodriguez / *Instituto Nacional de I Carbón, CSIC*
MATIAS BLANCO • CLARA BLANCO • VICTORIA JIMENEZ • JAVIER FERNANDEZ TORNOS • JESUS PEREZ TORRENTE • LUIS ORO • ROSA MENENDEZ

B4I-P-TH-PS2-9
Thin films of acridine-based compounds grown by laser techniques
Ileana Cristina Vasiliu / *INOE 2000 - National Institute for Optoelectronics*
ANDREEA MATEI • CATALIN CONSTANTINESCU • ION IONITA • MARIA MARINESCU • V. ION • MARIA DINESCU • MIHAI ELISA • RALUCA IORDANESCU • ANA EMANDI

B4I-P-TH-PS2-10
Uncovering the Elasticity of a Prototypical Imidazole-Based MOF Material: An Experimental and Computational Study
Jin-Chong Tan / *University of Oxford, UK*
BARTOLOMEO CIVALLERI • CC LIN • LOREDANA VALENZANO • TONY CHEETHAM • THOMAS BENNETT • CAROLINE MELLOT-DRAZNIEKS • RAIMONDAS GALVELIS • CM ZICOVICH-WILSON

B4I-P-TH-PS2-11
Adsorption of N/S heterocycles in the flexible metal-organic framework MIL-53(FeIII) studied by in situ energy dispersive X-ray diffraction
Ben Van de Voorde / *Centre for Surface Chemistry and Catalysis, Katholieke Universiteit Leuven*
ALEXIS S. MUNN • NATHALIE GUILLOU • FRANCK MILLANGE • DIRK DE VOS • RICHARD I. WALTON

B4I-P-TH-PS2-12
CO2 adsorption on Mixed Ligand Zr-MOFs
Jayashree Ethiraj / *University of Torino*
SACHIN CHAVAN • FRANCESCA BONINO • JENNY G. VITILLO • STIAN SVELLE • KARL PETTER LILLERUD • SILVIA BORDIGA

B4I-P-TH-PS2-13
Kinetic study of the thermal decomposition of the diethanolamine (DEA) free and incorporated in solid matrices of mesoporous ordered silica
Simone Avila / *Instituto de Quimica-USP*
JIVALDO MATOS

B4I-P-TH-PS2-14
MOFs for the capture and catalytic decomposition of warefare agents
Elena López-Maya / *Universidad de Granada. Departamento de Química Inorganica*

B4I-P-TH-PS2-15
Isoreticular metal-organic framework series based on Ni8-hydroxo clusters and pyrazolate ligands: control of hydrophobicity
Elsa Quartapelle Procopio / *Universidad de Granada. Granada, Spain*
NATALIA MUÑOZ • CARMEN MONTORO CANO • ELENA LÓPEZ MAYA • ENRIQUE OLTRA • VALENTINA COLOMBO • NORBERTO MASCIOCCHI • STEFAN KASKEL • ELISA BAREA MARTÍNEZ • JORGE RODRÍGUEZ NAVARRO

B4I-P-TH-PS2-16
Photocatalytic behavior of phosphonate-based hybrid materials on dyes and phenols degradation
Antonia Montserrat Bazaga García / *de partamento de Química Inorgánica*
ROSARIO MERCEDES PEREZ COLODRERO • PASCUAL OLIVERA PASTOR • ISABEL SANTACRUZ MUÑOZ • AURELIO CABEZA DIAZ • MIGUEL ÁNGEL GARCÍA ARANDA

B4I-P-TH-PS2-17
Investigating the structural changes of Sc-based metal-organic frameworks upon adsorption of different guest molecules
Jorge Sotelo / *University of Edinburgh*
SCOTT MCKELLAR • STEPHEN MOGGACH • JOHN MOWAT • PAUL WRIGHT

B4I-P-TH-PS2-18
Luminescent mechanochromic and thermochromic materials based on copper iodide clusters
Sandrine Perruchas / *Laboratoire PMC - CNRS UMR 7643*
QUENTIN BENITO • XAVIER LEGOFF • ALAIN GARCIA • THIERRY GACOIN • JEAN-PIERRE BOILOT

B4I-P-TH-PS2-19
Molecular Simulations for separation of carbon dioxide in Room Temperature Ionic Liquid/ Metal-Organic Frameworks Composite
Jose Manuel Vicent-Luna / *University Pablo de Olavide*
JUAN JOSE GUTIÉRREZ-SEVILLANO • JUAN ANTONIO ANTA • SOFÍA CALERO

B4I-P-TH-PS2-20
Dielectric properties of Co-MOF74
Claudia Gómez-Aguirre / *Universidad de A Coruña*
SUSANA YÁÑEZ-VILAR • BREOGÁN PATO-DOLDÁN • MANUEL SÁNCHEZ-ANDÚJAR • SOCORRO CASTRO-GARCÍA • MARIA-ANTONIA SEÑARÍS-RODRÍGUEZ

B4I-P-TH-PS2-21 **Synthesis, characterization and dielectric properties of a novel series of [G][Cd(HCOO)3] compounds templated by different alkylammonium cations**
Juan Manuel Bermúdez García / *Universidad de A Coruña*
BREOGAN PATO DOLDÁN • CLAUDIA GÓMEZ AGUIRRE • SUSANA YÁÑEZ VILAR • MANUEL SÁNCHEZ ANDÚJAR • SOCORRO CASTRO GARCÍA • Mª ANTONIA SEÑARÍS RODRÍGUEZ

B4I-P-TH-PS2-22 **Insights in the synthesis mechanism of organometallic grafting on TiO2**
Pieter Van Heetvelde / *University of Antwerpen*
SARA MAURELLI • MARCO TASSI • KENNY WYNS • ANITA BUEKENHOUDT • PETER ADRIAENSENS • SABINE VAN DOORSLAER • VERA MEYNEN

B4I-P-TH-PS2-23 **A Homochiral Metal-Organic Framework for the Separation of Organic Solvents**
Rocio Bueno-Pérez / *University Pablo de Olavide*
SOFIA CALERO • PATRICK J. MERKLING

B4I-P-TH-PS2-24 **Effect of metal and oxygen substitutions on the adsorption in IRMOF-1**
Juan Jose Gutierrez-Sevillano / *University Pablo de Olavide*
SAID HAMAD • LUCA BELLAROSA • NURIA LÓPEZ • SOFÍA CALERO

B4I-P-TH-PS2-25 **Amorphization of metal organic frameworks**
Emma Baxter / *University of Cambridge*

B4I-P-TH-PS2-26 **Selective adsorption of xylene isomers in metal-organic frameworks**
Francisco David Lahoz-Martín / *de p. Physical Chemical and Natural Systems, University Pablo de Olavide*
ANA MARTÍN-CALVO • SOFÍA CALERO

B4I-P-TH-PS2-27 **Increasing the carbon dioxide capacity of Al-MIL-101-NH2 by introducing donor-acceptor groups**
Thomas Wittmann / *Universität Bayreuth*
TIM AHNFELDT • JULIA WACK • JÜRGEN SENKER

B4I-P-TH-PS2-28 **Ab-inito study of MOFs with open metal sites for gas sensing applications**
Bartolomeo Civalleri / *Department of Chemistry - University of Torino*
ELISA ALBANESE • MATTEO FERRABONE • ROBERTO ORLANDO

B4I-P-TH-PS2-29 **Tuning the Kinetic Water Stability of Zn-Based Pillared MOFs**
Krista Walton / *Georgia Institute of Technology*
HIMANSHU JASUJA • NICHOLAS BURTCH • YOU-GUI HUANG • YANG CAI

B4I-P-TH-PS2-30 **Ball-Milling Induced Amorphization of Zeolitic Imidazolate Frameworks (ZIFs) for the Irreversible Trapping of Iodine**
Thomas Douglas Bennett / *University of Cambridge*

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AREA B / STRUCTURAL MATERIALS

B4 / COMPOSITE, HYBRID AND MULTI-SCALED STRUCTURAL MATERIALS

B4II / Highly Porous Metals and Ceramics

B4II-P-TH-PS2-1 **Elaboration and characterization of the mechanical behavior in tensile of cellular materials Sn50-Pb50**
Abd-Elmouneïm Belhadj / *University of Science and Technologie USTHB*
MOHAMMED AZZAZ

B4II-P-TH-PS2-2 **Superalloy Foams for Transpiration Cooling**
Cécile Davoine / *ONERA French Aerospace Lab*
FABIENNE POPOFF • PIERRE BEAUCHÊNE

B4II-P-TH-PS2-3 **Si3N4 Foams from Emulsions: processing and microstructure**
Paolo Colombo / *University of Padova, Dept. Industrial Engineering*

B4II-P-TH-PS2-4 **Synthesis of the MgAl2O4 spinel obtained via combustion reaction using glycerin from the biodiesel as a fuel for producing cellular ceramics**
Antonio Pedro Novaes de Oliveira / *Federal University of Santa Catarina*
GRAZIELA GUZZI DE MORAES • KAIO CÉSAR BARP • FABIANO RAUPP-PEREIRA

B4II-P-TH-PS2-5 **Valorization of a solid waste as an alternative mineral source for the production of refractory filters**
Fabiano Raupp-Pereira / *Federal University of Santa Catarina*
Anelise Cristiana Carvalho / Humberto Dal Bó Filho
ANTONIO PEDRO NOVAES DE OLIVEIRA

B4II-P-TH-PS2-6 **Fabrication and Microstructural Characteristics of Porous Ti by Freeze-Drying Process of TiH2/Camphene Slurry**
Myung-Jin Suk / *Kangwon National University*
SUNG-TAG OH • YOUNG-DO KIM

B4II-P-TH-PS2-7 **Contribution of osmosis on the swelling in porous materials: application to bituminized waste materials**
Alfonso Garcia / *E.U. Arquitectura Técnica (U.P.M.), Sensors and Actuators Group / Carlos Moron*
ENRIQUE TREMPS • JOSE ANDRES SOMOLINOS

B4II-P-TH-PS2-8 **Formation of thermal barrier coatings from aluminium microparticles investigated by in situ high temperature SEM (HT-SEM)**
Fernando Pedraza / *University of La Rochelle*
ROLAND PODOR

B4II-P-TH-PS2-9 **Corrosion behavior of magnesium alloys AZ91D produced by different method in 0.5M NaCl**
Anna Dobkowska / *Warsaw University of Technology*
BOGUSLAWA ADAMCZYK-CIESLAK • JANUSZ KAMINSKI • JERZY SMOLIK • JAROSLAW MIZERA

B4II-P-TH-PS2-10 **Thermal and mechanical properties of mesoporous silica for thermal insulation**
J Zhang / *Polytech, Université de Nantes*
Y BELMOUJAHID • M BONNE • D SCHLEICH • F TANCRET • Y GROHENS • B LEBEAU • Y SCUDELLER

B4II-P-TH-PS2-11 **Highly porous ceramic materials for the environmental technologies**
Ruta Svinka / *Riga Technical University Faculty of Materials Science and Applied Chemistry, Institute of Silicate Technology*
VISVALDIS SVINKA • LIGA DABARE

B4II-P-TH-PS2-12 **Plate-type anodic alumina supports**
Kristina Bockute / *Kaunas University of Technology*
IGORIS PROSYÈEVAS • VALENTINAS BALTRUÐAITIS • ALGIMANTAS JURAITIS • GIEDRIUS LAUKAITIS

B4II-P-TH-PS2-13 **Biomorphic porous SiC obtained from gas infiltration of carbonized wood preforms**
Joaquín Ramírez Rico / *Universidad de Sevilla - CSIC / Rafael Cabezas Rodriguez*
JULIÁN MARTINEZ FERNANDEZ

B4II-P-TH-PS2-14 **Manufacture of Ti-Al-C Based, Electrically Conductive Micro and Macro Porous MAX-phase Ceramic**
T. Thomas / *Materials Research Centre, Department of Mechanical Engineering, University of Bath*
C.R. BOWEN

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AREA C / PROCESSING

C2 / JOINING AND INTERFACE DE SIGN

C2I / Wetting

C2I-P-TH-PS2-1 **Lattice Boltzmann simulation of the surface growth effects for the infiltration of molten Si in carbon preforms**
GIULIO SCOCCHI • SUPSI-ICIMSI • DANILO SERGI • ALBERTO ORTONA

C2I-P-TH-PS2-2 **Wetting and thermal properties of Sn-Zn-xIn alloys (x = 0.5, 1, 1.5, 4 wt.%)**
Tomasz Gancarz / *Institute of Metallurgy and Materials Science PAS*
PRZEMYSLAW FIMA • JANUSZ PSTRUS

C2I-P-TH-PS2-3 **Grain boundary wetting phase transitions in the Al-based alloys**
Pawel Zieba / *Institute of Metallurgy and Materials Science, Polish Academy of Sciences*
BORIS STRAUMAL • SVETLANA PROTASOVA • OLGA KOGTENKOVA • TOMASZ CZEPPE • ANNA KORNEVA

C2I-P-TH-PS2-4 **Bulk and Grain Boundary Phase Transformation in Cu-Ni Alloys Driven by the Severe Plastic de formation**
Pawel Zieba / *Institute of Metallurgy and Materials Science, Polish Academy of Sciences*
BORIS STRAUMAL • ANDREJ MAZILKIN • LILIA KURMANAEVA • BRIGITTE BARETZKY • ANNA KORNEVA

C2I-P-TH-PS2-5 **Wetting of silicon surface by liquid Au-Si alloys**
Fiqiri Hoda*j* / *Grenoble Institute of Technology*

C2I-P-TH-PS2-6 **Kinetics of wetting of solid copper by liquid tin: influence of temperature**
Oleksii Liashenko / *SIMaP, Grenoble INP - UJF*
ANDRIY GUSAK • FIQIRI HODAJ

C2I-P-TH-PS2-7 **Wetting and microstructure evolution of the Sn-Zn-Ag/Cu interface**
Katarzyna Berent / *Institute of Metallurgy and Materials Science, Polish Academy of Sciences*
PRZEMYSLAW FIMA • TOMASZ GANCARZ • JANUSZ PSTRUS

C2I-P-TH-PS2-8 **Grain Boundary Wetting Transition in the Zr-Nb Alloys**
Alexander Straumal / *Ruhr-Universität Bochum*
YURIY KUCHEEV • ALENA GORNAKOVA

C2I-P-TH-PS2-9 **Wetting and interface interaction in the Ta2O5/Cu-Al system**
Orel Kish / *Department of Material Engineering, Ben-Gurion University, Beer-Sheva, Israel*
NATALYA FROUMIN • MICHAL GELBSTEIN • MICHAEL AIZENSHTEIN • NACHUM FRAGE

C2I-P-TH-PS2-10 **Wettability of glassy carbon by Barium containing salt mixture**
Peter Baumli / *University of Miskolc, Dept. of Nanotechnology/Bay Zoltan Applied Research Nonprofit Ltd*
JOZSEF PALKOVACS • GEORGE KAPTAY

C2I-P-TH-PS2-11 **Phenomena occurring at the interface of soldered joints Al/solder/Al, Al/solder/Cu, Cu/solder/Cu, where solder is Al-Zn with Ag and Cu addition**
Janusz Pstrus / *Institute of Metallurgy and Materials Science PAS*
PRZEMYSLAW FIMA • TOMASZ GANCARZ

C2I-P-TH-PS2-12 **Interfacial phenomena in Al-Si-Bi system**
Jozsef T. Szabo / *University of Miskolc*
ZOLTAN HARANGI • PETER BAUMLI • GEORGE KAPTAY

C2I-P-TH-PS2-13 **Assessing the wetting of bitumen emulsions on mineral substrates to improve pavement durability**
Layella Ziyani / *Ifsttar*
VINCENT GAUDEFROY • VALÉRY FERBER • FERHAT HAMMOUM

C2I-P-TH-PS2-14 **Wettability of cold zinc coated steel products by Cu-Si and Al-Si brazing alloys**
Alexey Koltsov / *ArcelorMittal Maizières Process Research Centre*
LAURENT CRETTEUR

C2I-P-TH-PS2-15 **High temperature interaction of Y2O3, YAP and YAG substrates with liquid Ni and its alloys**
Robert Purgert / *Energy Industries of Ohio, USA*
NATALIA SOBCZAK • JERZY J. SOBCZAK • RAFAL NOWAK • EDMUND SIENICKI

C2I-P-TH-PS2-16 **Grain boundary wetting in the Ti-Fe alloys**
Boris Straumal / *Max-Planck-Institute for Intelligent Systems / Alena Gornakova*
VALERI SEMENOV

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AREA C / PROCESSING

C2 / JOINING AND INTERFACE DE SIGN

C2III / Joining Technologies

C2III-P-TH-PS2-1 **Metallurgical and Mechanical Characterization of Aluminum Alloy 6061-T6 weld joint**
Maamar Hakem / *Centre de Recherche Scientifique Et Technique En Soudage Et Controle CSC*
SOLTANE LEBAILI • JAMEL MIROUD

C2III-P-TH-PS2-2 **Evolution of an interfacial layer between Ti-6Al-4V and carbon steel joined by Spark Plasma Sintering technology**
Aslan Miriyev / *Ben-Gurion University of The Negev*
SERGEY KALABUKHOV • ERAN TUVAL • ADIN STERN • NACHUM FRAGE

C2III-P-TH-PS2-3 **X-Ray diffraction analysis of UNS S32707 Steel Welded by TIG Process**
José Brant de Campos / *Rio de Janeiro State University*
MARÍLIA GARCIA DINIZ • VIVIANE SANTOS ROCHA • ANDRÉ DA ROCHA PIMENTA

C2III-P-TH-PS2-4 **Development of Highly Moisture Resistant Silane Modified and Cyanogen-Free Type Optical Adhesives and Their Reliability**
Seiko Mitachi / *Tokyo University of Technology*
KAZUSHI KIMURA

C2III-P-TH-PS2-5 **Lap joints of YBCO coated conductors: process and characteristics**
Carlos Baldan / *EEL/USP*
CARLOS SHIGUE • ERNESTO RUPPERT

C2III-P-TH-PS2-6 **Elimination of voids by hot forging and thermal treatment for ultrahigh carbon workroll**
Seong-Hoon Kang / *Korea Institute of Materials Science*
HOWON LEE

C2III-P-TH-PS2-7 **Corrosion resistance of SnZn and SnAgCu solders**
Marcin Grobelny / *Motor Transport Institute, Centre for Material Testing and Mechatronics*
NATALIA SOBCZAK

C2III-P-TH-PS2-8 **Studies on phosphorous content influence on the microstructure development at the ENIG/ SAC interface**
Joanna Wojewoda-Budka / *Polish Academy of Sciences, Institute of Metallurgy and Materials Science*
ZBIGNIEW HUBER • ANNA WIERZBICKA-MIERNIK • ANNA SYPIEŃ • PAWEL ZIĘBA

C2III-P-TH-PS2-9 **Effect of Heat Treatment Parameters on Mechanical Properties of Sn-Zn-based Lead-Free Solders**
Adam Klasik / *Motor Transport Institute*
NATALIA SOBCZAK • KRYSTYNA PIETRZAK • KATARZYNA MAKOWSKA • DARIUSZ RUDNIK • ANDRZEJ WOJCIECHOWSKI • ARTUR KUDYBA • EDMUND SIENICKI

C2III-P-TH-PS2-10 **Technological aspects of the production of silver-based layered materials for brazing**
Wieslaw Kazana / *Institute of Non-Ferrous Metals / Ludwik Ciura*
MALGORZATA KAMINSKA • WITOLD MALEC

C2III-P-TH-PS2-11 **Effect of oxidation and mechanical damage of PCBs with OSP finish on their solderability by SAC305 alloy**
Natalia Sobczak / *Foundry Research Institute*
ALEKSANDRA SIEWIOREK • ARTUR KUDYBA

C2III-P-TH-PS2-12 **Use of testing techniques for failure diagnosis in metallic components**
Ana María Furlani / *Fac. Ingeniería - Universidad Nacional de Cuyo*
FEDERICO MARTINEZ • MARÍA SUSANA BERNASCONI • DE L PÓPOLO MARCELO • MARÍA GABRIELA FRETES • HUGO LUCAS • SERGIO SANTAMARINA

C2III-P-TH-PS2-13 **Morgphology, Growth Kinetitics and Physical Properties of the Intermetalic Compounds Formed at the Interface between Sn-Cu Solders and a Cu Substrate Due to a Minor Addition of Ni and P**
Petr Harcuba / *Charles University In Prague*
MICHAL HÁJEK • MICHAL JANEÈEK

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AREA C / PROCESSING

C3 / NANO-POWDER AND SOLUTION ROUTES: SYNTHESIS TO MATERIALS

C3II / Advanced Processing Methods to maintain Nano-Features from the Powder

C3II-P-TH-PS2-1 **Hot Explosive Consolidation on Nano-structural Tungsten-Silver Composite Billets and Investigation their Structure**
Bagrat Godibadze / *G.Tsulukidze Minig Institute*
AVTANDIL DGEBUADZE • AKAKI PEIKRISHVILI • ELGUJA CHAGELISHVILI • MERAB TSIKLAURI

C3II-P-TH-PS2-2 **Refining the microstructure of a Fe matrix cermet reinforced with TiCN by mechanical milling**
Paula Alvaredo / *Universidad Carlos III de Madrid*
ELENA GORDO

C3II-P-TH-PS2-3 **The use of Spark Plasma Sintering (SPS) to prepare glass-ceramics in the Cu-As-Te system**
Judith Monnier / *Institut de Chimie et des Matériaux de Paris Est (ICMPE), UMR 7182 CNRS-Université Paris-Est Créteil*
JEAN-BAPTISTE VANEY • GAËLLE DE LAIZIR • ERIC ALLENO • ANDREA PIARRISTEGUY • MICHEL RIBES AND ANNIE PRADEL • ANTONIO P. GONÇALVES • ELSA B. LOPES • CLAUDE GODART • BERTRAND LENOIR

C3II-P-TH-PS2-4 **Effect of number passes on properties of silver powders consolidated by Cyclic Extrusion Compression Method**
Beata Leszczyńska-Madej / *AGH University of Science and Technology, Faculty of Non-Ferrous Metals*
MARIA RICHERT • JAN RICHERT • ŁUKASZ KUCZEK • MARCIN MROCZKOWSKI

C3II-P-TH-PS2-5 **Mechanisms of spark plasma sintering in metallic materials**
Zofia Trzaska / *Cemes-Cnrs Upr 8011*
JEAN-PHILIPPE MONCHOUX

C3II-P-TH-PS2-6 **In situ formation of ceramic micro reinforcement on Ti based composites**
Lisa Biasetto / *Università Di Padova-DTG*
ALBERTO FABRIZI • FRANCO BONOLLO • PAOLO COLOMBO

C3II-P-TH-PS2-7 **Modification of a powder metallurgy gamma-TiAl alloy microstructure by heat treatments**
Rocío Muñoz Moreno / *Carlos III University*
MARÍA TERESA PÉREZ PRADO • ELISA MARÍA RUIZ NAVAS • JOSÉ MANUEL TORRALBA

C3II-P-TH-PS2-8 **Influence of ionic radius values of rare earths substitution on Y3Fe5-xO12Rex (YIG: RE) structure and properties**
Rocío Estefanía Rojas Hernandez / *Instituto de Cerámica Y Vidrio*
JUAN JOSE ROMERO • JOSE FRANCISCO FERNANDEZ LOZANO • MIGUEL ANGEL RODRIGUEZ BARBERO • MIGUEL ANGEL GARCIA GARCIA

C3II-P-TH-PS2-9 **WC-ASI 304 cemented carbides consolidated by selective laser sintering**
Cristina Fernandes / *University of Aveiro*
ANDRÉ CAVALEIRO • JAMASP JHABVALA • ERIC BOILLAT • ANA SENOS • TERESA VIEIRA

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AREA C / PROCESSING

C3 / NANO-POWDER AND SOLUTION ROUTES: SYNTHESIS TO MATERIALS

C3III / Processing of Ceramics and their Mechanical Properties

C3III-P-TH-PS2-1
Utilization of paper sludge by partial replacement of feldspar into clays bricks to obtain lightweight building material
Bachir Chemani / *University of Boumerdes*
HALIMA CHEMANI

C3III-P-TH-PS2-2
Modeling of heat and mass transfer in SiC CVD reactor as a tool for design of modern ceramic materials for high power electronics applications
Jakub Skibinski / *Warsaw University of Technology*
TOMASZ WEJRZANOWSKI • DOMINIKA TEKLINSKA • KRZYSZTOF KURZYDLOWSKI

C3III-P-TH-PS2-3
High-temperature Young's moduli of porous alumina-zirconia composites prepared with starch as a pore former
Eva Gregorová / *ICT Prague*
WILLI PABST • JAKUB ÈERNÝ

C3III-P-TH-PS2-4
Mechanical properties of silicon nitride under contact stresses at temperatures below 1500°C both in air and controlled atmospheres
Luis Ángel Ortiz / *University of Extremadura*
PEDRO MIRANDA • ANTONIA PAJARES • JESÚS RODRÍGUEZ-SÁNCHEZ • ESTÍBALIZ SÁNCHEZ-GONZÁLEZ

C3III-P-TH-PS2-5
Aqueous colloidal processing of submicrometric SiC plus Y3Al5O12 with diamond nanoparticles
Angel L. Ortiz / *University of Extremadura*
VICTOR M. CANDELARIO • FERNANDO GUIBETEAU • RODRIGO MORENO • ANGEL L. ORTIZ

C3III-P-TH-PS2-6
Microwave sintering of fully dense HAP nanostructured and HAP/TCP composites: Enhancement of mechanical and microstructural properties
Amparo Borrell / *Polytechnic University of Valencia, Instituto de Tecnología de Materiales*
MARIA DOLORES SALVADOR • GEMA IRANZO • MIRIAM MIRANDA • FELIPE PENARANDA-FOIX • JOSE MANUEL CATALA-CIVERA

C3III-P-TH-PS2-7
Elaboration of bulk titanium nitride from the spark eroded Ti powder obtained in liquid nitrogen
Andrii Gilchuk / *National technical university 'Kyiv polytechnic institute'*
PATRICK OCHIN • L. PIÈRRE • GENNADY MONASTYRSKY • YURII KOVAL

C3III-P-TH-PS2-8
Mechanical characterization of extruded clay-bricks containing steel-making dust
Vayos Karayannis / *Technological Education Institution of West Macedonia - Greece*

C3III-P-TH-PS2-9
Dynamic compaction of WC-Ni powders using explosives
Alexandre Pires / *ESTGA/UA - Águeda High School of Technology and Management*
JOSÉ RIBEIRO • JOAQUIM SACRAMENTO • ANA SENOS

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AREA C / PROCESSING

C3 / NANO-POWDER AND SOLUTION ROUTES: SYNTHESIS TO MATERIALS

C3IV / Additive Manufacturing and other Near Net Shape Techniques

C3IV-P-TH-PS2-1
Heat treating of Ti6Al4V components produced by Electron Beam Melting or Direct Metal Laser Sintering
Patricia Franconetti / *Universitat Politècnica Valencia*
JOSÉ MORENO • JUAN JOSÉ CANDEL • VICENTE AMIGÓ

C3IV-P-TH-PS2-2
Reduction of oxide during vacuum sintering of water atomised 17-4 PH stainless steel [powder
Jan Kazior / *Cracow University of Technology*
TADEUSZ PIECZONKA • ANETA SZEWCZYK-NYKIEL • MAREK HEBDA • MAREK NYKIEL

C3IV-P-TH-PS2-3
Manufacturing of porous and dense parts according the fabrication parameters by Additive Layer Manufacturing (ALM)
Antonio Periñán / *Fada-Catec*
FERNANDO LASAGNI • EVA MARÍA PÉREZ • AMADÍS ZORRILLA • MIGUEL CALVO • JOSE MARÍA GALLARDO

C3IV-P-TH-PS2-4
Selective Laser Melting in A201 Alloy
Wei Wang / *School of Metallurgy and Materials, University of Birmingham*
MOATAZ ATTALLAH • NORIKO READ

C3IV-P-TH-PS2-5 **Mechanical characterization of AISI316L lattice structures manufactured by Additive Layer Manufacturing (ALM).**
Antonio Periñán / *Fada-Catec*
FERNANDO LASAGNI • AMADÍS ZORRILLA • PEDRO RUIZ

C3IV-P-TH-PS2-6 **Heat treatment of Ti6Al4V alloy manufactured by direct metal laser sintering (DMLS): microstructural and mechanical characterization**
Maria A. Larosa / *Institute of Biofabrication (INCT-BIOFABRIS), Campinas, Brazil*
ANDRÉ L. JARDINI • CECÍLIA A. C. ZAVAGLIA • MARIA C. F. IERARDI • RUBENS MACIEL FILHO

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AREA C / PROCESSING

C4 / ADVANCED COATING AND SURFACE STRUCTURING

C4IV / Laser Micro-/Nanoengineering

C4IV-P-TH-PS2-1 **Stem Cell Adhesion and Orientation on Laser Treated Polyurethane for Ventricular Assist de vices**
Denise Langheinrich / *Institute of Manufacturing Technology, Technische Universität Dresden*
LUCAS CORTELLA • EDUARDO DE SÁ • HELENA OYAMA • IDAGENE CESTARI • ISMAR CESTARI • ANDRÉS LASAGNI

C4IV-P-TH-PS2-2 **Low-cost fabrication of compositionally-tunable Cu-Ni alloy nanopillar arrays onto e-beam lithographed substrates for magnetic applications**
Maria Dolores Baro / *Dept. Física; Fac. Ciencies, Universitat Autònoma de Barcelona*
AÏDA VAREA • EVA PELLICER • SALVADOR PANE • BRADLEY J. NELSON • SANTIAGO SURIÑACH • JOSEP NOGUES • JORDI SORT

C4IV-P-TH-PS2-3 **Microfabrication processes for microfluidic devices on a single laser workstation: direct writing lithography on SU-8, laser ablation on polymers and mask manufacturing**
Francisco Javier Sanza / *Centro Láser- Universidad Politécnica de Madrid*
DIEGO RODRÍGUEZ • MARÍA FÉ LAGUNA • RAFAEL CASQUEL • ÁLVARO LAVÍN • ANA LÓPEZ • MIGUEL HOLGADO

C4IV-P-TH-PS2-4 **Direct laser interference patterning of tetrahedral amorphous carbon thin films**
Andres Lasagni / *Fraunhofer Institute for Material and Beam Technology (IWS)*
TEJA ROCH

C4IV-P-TH-PS2-5 **Manufacturing chain for flexible micro fluidic devices based on laser and imprint technology**
Niels Schilling / *Fraunhofer Institute for Material and Beam Technology (IWS)*
JIAN HE • STEFFEN HOWITZ • UDO KLOTZBACH

C4IV-P-TH-PS2-6 **Microstructural characterization of copper after laser cleaning**
Tomasz Onyszczuk / *Warsaw University of Technology, Faculty of Materials Science and Engineering*
HALINA GARBACZ • JAN MARCZAK • ANDRZEJ KOSS

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AREA D / CHARACTERISATION AND MODELLING

D3 / MATERIALS MODELLING ON ALL LENGTH SCALES

D3I / Materials Discovery and High-Throughput Methods in Modelling and Experiments

D3I-P-TH-PS2-1 **Mechanical stability of cubic crystals under uniaxial, biaxial and triaxial loading**
Petr Rehak / *Faculty of Mechanical Engineering, Brno University of Technology*
MIROSLAV CERNY • MOJMIR SOB

D3I-P-TH-PS2-2 **Numerical methods for high-dimensional problems and large computational screening in rational material design**
Jan Hamaekers / *Fraunhofer Institute for Algorithms and Scientific Computing SCAI*

D3I-P-TH-PS2-3 **The stability of Bi-Sb-Te layered structures: a first-principles study**
Kirsten Govaerts / *EMAT, Universiteit Antwerpen, Belgium*
MARCEL SLUITER • BART PARTOENS • DIRK LAMOEN

D3I-P-TH-PS2-4 **Effect of C impurities on the structural stability of TCP phases in the Fe-Nb system**
Alvin Noe Ladines / *ICAMS, Ruhr Universität Bochum*
THOMAS HAMMERSCHMIDT • RALF DRAUTZ

D3I-P-TH-PS2-5 **Modelling the structure and electronic properties of amorphous ZnO:Rh and ZnO:Ir**
David Munoz Ramo / *University of Cambridge*

PAUL BRISTOWE

D3I-P-TH-PS2-6 **Ab initio study of phase stability, magnetic and structural properties of Fe2(Zr1-xNbx) Laves Phases**
Lyacine Rabahi / *Laboratory 'Physique des Matériaux'University of Science and Technology Houari Boumediene*
ABDELHAFID KELLOU • DJAMEL BRADAI • THIERRY GROSDIDIER

D3I-P-TH-PS2-8 **Energetic Study of Boron effect on Precipitation in Tempered Ferritic Steel Using First-Principles Calculations**
H. C Wang / *Ruhr University Bochum*
V. YARDLEY • T. HAMMERSCHMIDT • A. BIALON • G. EGGELER

D3I-P-TH-PS2-9 **Synthesis of Au microwires by selective oxidation of Au-W thin-film composition spreads**
Steffen Salomon / *Institute for Materials, Ruhr-University Bochum*
SVEN HAMANN • HAYO BRUNKEN • ROBERT MEYER • ALAN SAVAN • ALFRED LUDWIG

D3I-P-TH-PS2-11 **Steel alloy compression and torsion test performed with finite element analysis (FEA), using Garofalo Equation and automatic remeshing**
Rafael Barea de l Cerro / *Nebrija Universidad*
JOSE LUIS GONZALEZ SANCHEZ • BEATRIZ ACHIAGA MENOR • MONTSERRAT PICHEL MARTINEZ • NURIA CANDELA VAZQUEZ

D3I-P-TH-PS2-12 **Ab initio investigation of layered alloys: a roadmap for improved magneto-caloric effect**
Biswanath Dutta / *Max-Planck-Institut Für Eisenforschung GmbH*
TILMANN HICKEL • JÖRG NEUGEBAUER • ANDREAS HÜTTEN

D3I-P-TH-PS2-13 **Vacancies in High-Manganese Steels**
Sarah Lintzen / *Institute of Inorganic Chemistry, RWTH Aachen University*
JÖRG VON APPEN • RICHARD DRONSKOWSKI

D3I-P-TH-PS2-14 **Electronic localization and magnetism in intermetallic alloys from ab initio calculations.**
Matteo Cococcioni / *University of Minnesota*
BURAK HIMMETOGLU

D3I-P-TH-PS2-15 **Calculation of the shear modulus of metals at high temperatures and pressures**
Evgeny Kraus / *Khristianovich Institute of Theoretical and Applied Mechanics Siberian Branch of RAS*
IVAN SHABALIN

D3I-P-TH-PS2-16 **Molecular dynamics simulation of organic compounds adsorption from aqueous solution in finite and infinite carbon slit-like pores**
Karolina Werengowska-Cieæwierz / *N. Copernicus University, Department of Chemistry, Physicochemistry of Carbon Materials Research Group*
PIOTR GAUDEN • ARTUR TERZYK • WOJCIECH ZIELIŃSKI • SYLWESTER FURMANIAK • MAREK W¶NIEWSKI • JERZY WLOCH • PIOTR KOWALCZYK

D3I-P-TH-PS2-17 **Biocompatible Ti-Nb-× (X=Sn, In, Si, Pd, Ca) alloys from ab initio calculations**
Jose Julio Gutierrez Moreno / *University of Loannina*
DIMITRIS PAPAGEORGIOU • GEORGE EVANGELAKIS • CHRISTINA LEKKA

D3I-P-TH-PS2-18 **Reduced and full Cosserat media as a possible model for solid granular materials. Waves and instabilities**
Elena Grekova / *Institute for Problems In Mechanical Engineering of Russian Academy of Sciences / Group PAI*

D3I-P-TH-PS2-19 **Building up a phase diagram for low dimensional Fe oxides**
Silvia Gallego / *Instituto de Ciencia de Materiales de Madrid, CSIC*
IVAN BERNAL

D3I-P-TH-PS2-20 **VHDL-AMS modeling of a transmission system based on optical fiber**
Fatima Zohra Baouche / *InESS-UMR 7163 ULP/CNRS laboratory, ENSPS pôle API, France*
FARIDA HOBAR • YANNICK HERVE

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AREA E / ENERGY AND ENVIRONMENT

E1 / MATERIALS FOR RENEWABLE ENERGY

E1II / Materials for Solar Energy Conversion

E1II-P-TH-PS2-1 **Effect of Crosslinking on Thermal Properties of EVA Encapsulant Material During Photovoltaïc Module Encapsulation Process**
Agroui Kamel / *Crtse*

E1II-P-TH-PS2-2 **Si-SiC foams and lattices for high temperature volumetric receivers**
Ortona Alberto / *Supsi / Barbato Maurizio*
FERRARI LUCA

E1II-P-TH-PS2-3 **Short acidic surface texturization of mc-Si wafers for specific crystallographic orientations and its impact on opto-eletrical parameters of solar cells.**

Grazyna Kulesza / *Institute of Metallurgy and Materials Science of Polish Academy of Sciences*
PIOTR PANEK • MAREK FARYNA • PAWEL ZIEBA

E1II-P-TH-PS2-4 **The variation of efficiency of p-type EWT silicon solar cell by the application of passivation layer using Atlas (Silvaco) device simulator**
Batoul Benabadji / *University of Tlemcen*
ABDELLATIF ZERGA • HANANE LACHACHI

E1II-P-TH-PS2-5 **Electronic structure investigations of CZTS powders.**
Catherine Guillot-Deudon / *Institut de s Matériaux Jean Rouxel*
SYLVIE HAREL • LÉO CHOUBRAC • ALAIN LAFOND

E1II-P-TH-PS2-6 **Analysis of reduction step potential on thermochemical cycle efficiency**
Stefan Brendelberger / *German Aerospace Center DLR*
JAN FELINKS • MARTIN ROEB • CHRISTIAN SATTLER

E1II-P-TH-PS2-7 **Characterization of the reaction pathway of Cu2ZnSnS4 monograin formation**
Filipe Neves / *Laboratório Nacional de Energia e Geologia (LNEG)*
VANESSA LIVRAMENTO • ISABEL MARTINS • LUIS ESPERTO • MARIO SANTOS • JOSÉ BRITO • KATRI MUSKA • TIMO HOLOPAINEN

E1II-P-TH-PS2-8 **Durability testing of SiC volumetric air receiver cups**
Florian Sutter / *Dlr*
ALEXANDER OSCHEPKOV • WOLFGANG REINALTER • MIRIAM EBERT

E1II-P-TH-PS2-9 **Low temperature annealing effect on electrical properties of multicrystalline silicon wafers for photovoltaic application**
Abdelghani Boucheham / *Centre de Recherche En Technologie de s Semi-Conducteurs Pour L'Energétique*
DJOUDI BOUHAFS • NABIL KHELIFATI • BAYA PALAHOUANE

E1II-P-TH-PS2-10 **Synthesis of Cu2ZnSnS4 monograin powders in liquid phase of cadmium iodide for photovoltaic applications**
Maris Pilvet / *Tallinn University of Technology*
MARIT KAUK-KUUSIK • JAAN RAUDOJA • MARE ALTOSAAR • MAARJA GROSSBERG • KRISTI TIMMO • TIIT VAREMA • MATI DANILSON

E1II-P-TH-PS2-11 **Structure and microstructure of Cu2ZnSn(S,Se)4 thin films**
Alexandra Franz / *Helmholtz Centre Berlin for Materials and Energy*
GALINA GURIEVA • SUSAN SCHORR

E1II-P-TH-PS2-12 **Investigation of transport properties of Cu2ZnSiSe4 single crystals**
Galina Gurieva / *Helmholtz Zentrum Berlin fur Materialien und Energie*
MAXIM GUC • KONSTANTIN LISUNOV • SERGEJ LEVCENKO • DUMITRU DUMCENCO • YING-SHENG HUANG • SUSAN SCHORR • ERNEST ARUSHANOV

E1II-P-TH-PS2-13 **Microstructural, optical and electrical characterization of TiO2 thin films grown by APCVD for photovoltaic application**
Dalila Hocine / *Laboratory of Advanced Technologies of Electrical Engineering (LATAGE). Faculty of Electrical and Computer Engineering. Mouloud Mammeri University (UMMTO), Algeria.*
MOHAMMED SAID BELKAID • MARCEL PASQUINELLI • LUDOVIC ESCOUBAS • PHILIPPE TORCHIO • ANTONIN MOREAU

E1II-P-TH-PS2-14 **Properties of Granular Materials as Heat Transfer and Storage Medium for CSP Plants with Thermal Energy Storage and Moving Bed Heat Exchanger**
Torsten Baumann / *German Aerospace Center*
STEFAN ZUNFT

E1II-P-TH-PS2-15 **Cu2ZnGexSn1-xSe4 MONOGRAIN POWDERS AS ABSORBER MATERIALS FOR SOLAR CELLS**
Teoman Taskesen / *Tallinn University of Technology,Institute of Materials Science*
KRISTI TIMMO • JAAN RAUDOJA • INGA LEINEMANN • MAARJA GROSSBERG • TAAVI RAADIK • MARIT KAUK-KUUSIK • TIIT VAREMA • MARE ALTOSAAR

E1II-P-TH-PS2-16 **Vibrational properties of wurtzstannite Cu2ZnSiS4 and Cu2ZnSiSe4 single crystals**
Sergej Levcenko / *Institute of Applied Physics, Academy of Sciences of Moldova / Maxim Guc*
VICTOR IZQUIERDO-ROCA • XAVIER FONTANE • MIKHAIL VALAKH • ERNEST ARUSHANOV • ALEJANDRO PéREZ RODRíGUEZ

E1II-P-TH-PS2-17 **Transport properties of flash evaporated Cu2ZnSnS4 thin films**
Raquel Caballero / *Universidad Autonoma de Madrid*
M. GUC • K.G. LISUNOV • NAIR LÓPEZ • JOSÉ MANUEL MERINO • MÁXIMO LEÓN • ERNEST ARUSHANOV

E1II-P-TH-PS2-18 **The spectroscopic ellipsometry study of Cu2ZnSn(SexS1-x)4 crystals**
Sergiu Levcenko / *1Helmholtz-Zentrum Berlin Fuer Materialien Und Energie*
M LEÓN • R SERNA • A NATEPROV • I BODNAR • G GURIEVA • S SCHORR • M MERINO • R CABALLERO • E ARUSHANOV

E1II-P-TH-PS2-19 **Optimization of the boron diffusion profile during emitter on n-type silicon substrate**
Hanane Lachachi / *Tlemcen University*
ABEDELLATIF ZERGA • BATOUL BENABADJI

E1II-P-TH-PS2-20 **Structural aspects and point defects in CZTS/Se**
Susan Schorr / *Helmholtz Centre Berlin for Materials and Energy*
Galina Gurieva

E1II-P-TH-PS2-21 **Characterization of electron transport in titania electrodes for photoelectrochemical**

applications
Claudia Paoletti / *ENEA, Renewable Energy Unit / Serena Gagliardi*
ROSARIA D'AMATO • MAURO FALCONIERI

E1II-P-TH-PS2-22 **Low-temperature magnetic properties investigations of haycockite, Cu4Fe5S8**
Susan Schorr / *Helmholtz Centre Berlin for Materials and Energy*
Barys Korzun / L. S. Lobanovski / V. R. Sobol / A. N. Gavrilenko / V. L. Matukhin

E1II-P-TH-PS2-23 **First-principles investigation of electronic and optical properties of Ga doped Zn1-xMgxO**
Rachid Belkada / *Centre de Recherche En Technologie de s Semi-Conducteurs Pour L'Energie (CRTSE)*
MASAOUD BOUMAOUR

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AREA E / ENERGY AND ENVIRONMENT

E3 / ENERGY CONVERSION AND TRANSPORT

E3I / Materials for Power Plants: Energy Conversion and CO2 Capture

E3I-P-TH-PS2-1 **Microstructure and properties of thermal barrier coatings obtained from different nanostructured feedstocks by atmospheric plasma spraying**
Pablo Carpio / *Instituto de Tecnología Cerámica (ITC) - Asociación de Investigación de Las Industrias Cerámicas (AICE). Universitat Jaume I (UJI). Castellón, Spain*
RODRIGO MORENO • CARMEN ALCAZAR • MARIA DOLORES SALVADOR • RUT BENAVENTE • ENRIQUE SÁNCHEZ

E3I-P-TH-PS2-2 **High temperature protection of nickel-based superalloys: a comparison between industrial aluminizing processes and a new slurry aluminizing**
Gilles Bonnet / *University of La Rochelle*
MAËL MOLLARD • JOSSELINE BALMAIN • FERNANDO PEDRAZA

E3I-P-TH-PS2-3 **Beyond nickel-aluminide coatings for Ni-based superalloys: new concept of functional oxide-based coatings providing enhanced oxidation resistance.**
Baptiste Bouchaud / *LaSIE FRE- CNRS 3474. UNIVERSITY OF LA ROCHELLE*
GILLES BONNET • FERNANDO PEDRAZA

E3I-P-TH-PS2-4 **Research on thermal decomposition processes of waste substances in the direction of receiving alternative fuels**
Ewa Rostek / *Motor Transport Institute*
KRZYSZTOF BIERNAT

E3I-P-TH-PS2-6 **Stability of blended polymeric materials for CO2 separation**
Jelena Lillepaerg / *Helmholtz-Zentrum Geesthacht*
PROKOPIOS GEORGOPANOS • SERGEY SHISHATSKIY • JAN WIND

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AREA E / ENERGY AND ENVIRONMENT

E3 / ENERGY CONVERSION AND TRANSPORT

E3IV / Materials for Nuclear Applications

E3IV-P-TH-PS2-1 **Purification of Th1-xUxSiO4 uranothorite samples from oxide mixtures**
Nicolas Dacheux / *ICSM - UMR 5257 CEA/CNRS/UM2/ENSCM*
NICOLAS CLAVIER • STÉPHANIE SZENKNECT • DAN TIBERIU COSTIN • CHRISTOPHE POINSSOT

E3IV-P-TH-PS2-2 **Multi-technique monitoring of Ce1-xNdxO2-x/2 dissolution in nitric acid media**
Denis Horlait / *Institut de Chimie Séparative de Marcoule*
STÉPHANIE SZENKNECT • NICOLAS DACHEUX • ADEL MESBAH • NICOLAS CLAVIER • JOHANN RAVAUX • RENAUD PODOR

E3IV-P-TH-PS2-3 **Phosphates of NaZr2(PO4)3 family resistant to thermal stress**
Santiago García-Granda / *Universidad de Oviedo*
VALERIYYU. VOLGUTOV • ALBINA.I. ORLOVA • SERGUEI A. KHAINAKOV

E3IV-P-TH-PS2-4 **Fabrication of CeO2 pellets as spent fuel matrix analogue for corrosion studies.**
Joaquin Cobos / *Ciemat*
NIEVES RODRÍGUEZ • JOSE ANTONIO RODRÍGUEZ • CRISTINA AREVALO • YADIR TORRES • CARMEN PALOMO

E3IV-P-TH-PS2-5 **Critical Al content required to form a protective alumina layer on Fe-Cr-Al alloys exposed to oxygen-containing molten lead**
Adrian Jianu / *Karlsruhe Institute of Technology*
GEORG MUELLER • RENATE FETZER • ANNETTE HEINZEL • ALFONS WEISENBURGER • IONELIA VOICULESCU • VICTOR GEANTA

E3IV-P-TH-PS2-6 **Grain size refinement of advanced austenitic steels envisaged for use as fuel cladding**
Laurine Courtin / *CEA (Atomic Energy Commission)*
DIDIER BOSSU • STEPHANE URVOY • SOPHIE BOSONNET • SYLVIE POISSONNET • PATRICK OLIER • BOUZID KEDJAR • LUDOVIC THILLY

E3IV-P-TH-PS2-7 **Alteration of BISO and TRISO Particles under geological disposal conditions**
Abdelouahed Ait Chaou / *SUBATECH, Ecole de s Mines de Nantes- Université de Nantes*
ABDESSELAM ABDELOUAS • GÖKHAN KARAKURT • BERND GRAMBOW

E3IV-P-TH-PS2-8 **Vibrational spectroscopy of mixed actinide dioxides**
Dario Manara / *European Commission JRC ITU*
ROBERT BOHLER • PELIN CAKIR

E3IV-P-TH-PS2-9 **Investigation of the Na-U-O, Na-Np-O and Na-Pu-O phase diagrams.**
Anna Smith / *Institute for Transuranium Elements*
PHILIPPE RAISON • DE NIS BYKOV • JEAN-YVES COLLE • ONDREJ BENES • ATTILA KOVACS • CHRISTOS APOSTOLIDIS • EMMANUELLE SUARD • ANTHONY CHEETHAM • RUDY KONINGS

E3IV-P-TH-PS2-10 **Characterization of arc melted yttrium- reinforced vanadium for fusion applications**
Vanessa de Castro / *Universidad Carlos III de Madrid*
SHEILA SERRANO • CRISTINA AREVALO • RAMIRO PAREJA

E3IV-P-TH-PS2-11 **Composite zones obtained by in situ synthesis in steel castings**
Beata Grabowska / *AGH-University of Science and Technology, Faculty of Foundry Engineering*
EWA OLEJNIK • SEBASTIAN SOBULA • TOMASZ TOKARSKI

E3IV-P-TH-PS2-12 **The Jominy quench-end test applied to Zirconium alloys**
Michel Darrieulat / *Ecole Nationale Supérieure de s Mines de Saint-Etienne*
YAMEN BEN AMMAR • ASDIN AOUFI

E3IV-P-TH-PS2-13 **Influence of Si and Ta content on the microstructure of reduced activation ferritic martensitic steels**
Cristina Arevalo / *Universidad de Sevilla*
VANESSA DE CASTRO • ISABEL MONTEALEGRE • ANTONIO PAUL

E3IV-P-TH-PS2-14 **From ACTINET to TALISMAN: Networking and Pooling Facilities de dicated to Actinide Science in Europe**
Philippe Raison / *European Commission*
NICOLAS DACHEUX • STÉPHAN BOURG

E3IV-P-TH-PS2-15 **Low temperature phase transition of CsMgPO4**
Maria Orlova / *University of Innsbruck, Innsbruck, Austria*
VOLKER KAHLENBERG • DMITRIY MICHAILOV • ALBINA ORLOVA

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AREA E / ENERGY AND ENVIRONMENT

E4 / ENERGY HARVESTING AND STORAGE

E4I / Energy Harvesting and Storage

E4I-P-TH-PS2-1 **Characterization of Hydrothermally Synthesized Piezoelectric Nanogenerators with a Variation of Applied Frequency and Amplitude**
Hyo-Soo Lee / *KITECH*
SO-YOUNG LEE • SANG-WOO KIM

E4I-P-TH-PS2-2 **Thermochemical calculations of thermodynamic characteristics of lanthanides borohydrides**
Abdulkhair Badalov / *Tajik Technical University*
BOBOMUROD GAFUROV • ILKHOM MIRSAIDOV • DILAFRUZ NASRULLOEVA

E4I-P-TH-PS2-3 **Nanoinclusions of TiNi2Sn in TiNiSn alloys from DFT study**
David Fuks / *Ben Gurion University of The Negev*
YANIV GELBSTEIN • KIRILL KIRIEVSKY

E4I-P-TH-PS2-4 **Supported Co catalysts prepared by magnetron sputtering for hydrogen production through sodium borohydride or ammonia borane hydrolysis**
Mariana Paladini San Martín / *Instituto de Ciencia de Materiales (ICMS), CSIC-Universidad de Sevilla*
GISELA MARIANA ARZAC • VANDA FORTIO GODINHO • ASUNCIÓN FERNÁNDEZ CAMACHO

E4I-P-TH-PS2-5 **Inclusion of bismuth- and carbon nanotubes in Bi1-xSbx-alloys and the characterization of their thermoelectric properties**
Ekrem Günes / *Institute for Inorganic and Analytical Chemistry, Justus-Liebig-Universität Giessen*
BERNADETTE LANDSCHREIBER • DAVID HARTUNG • MATTHIAS T. ELM • CHRISTIAN WILL • PETER J. KLAR • SABINE SCHLECHT

E4I-P-TH-PS2-6 **Improvement of Hydrogen Permeability of Pt-Gd Film by Removal of Inclusion Particles**
Ryo Inoue / *Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*
YOSHIHIRO ODA • SHIGERU UEDA • SHUN-ICHIRO TANAKA

E4I-P-TH-PS2-7 **Fabrication of thermoelectric layers by magnetron sputtering**
Krzysztof Mars / *AGH University of Science and Technology*
ELZBIETA GODLEWSKA • TOMASZ BALICKI • MATEUSZ AUGUSTYNIAK • KATARZYNA NIEMIEC

E4I-P-TH-PS2-8 **Natural ageing of the lead alloys used in batteries**
Ludwik Ciura / *Institute of Non-Ferrous Metals*
JAN WESOLOWSKI • SZYMON MALARA • WIESLAW KAZANA

E4I-P-TH-PS2-9 **New approach in nanoionics: Ion-transport processes on solid electrolyte/electronic conductor blocking heterojunctions**
Alexandr de spotuli / *Institute of Microelectronics Technology and High Purity Materials, Russian Academy of Sciences (IMT RAS)*
ALEXANDRA ANDREEVA

E4I-P-TH-PS2-10 **Modeling and Validation of Hydrogen Storage Tanks based on Hydride-Graphite-Composites**
Kai Herbrig / *Institute of Materials Science, Technische Universität Dresden*
LARS RÖNTZSCH • BERND KIEBACK

E4I-P-TH-PS2-11 **Nickelboride Catalyzed Hydrodechlorination of Aminechloroboranes in a Self-Contained Recycling Scheme for Spent Ammonia Borane**
Florian Mertens / *Technische Universität Bergakademie Freiberg*
CHRISTIAN RELLER • CHRISTIAN SCHMIDT

E4I-P-TH-PS2-12 **Investigation of Li-ion diffusion rates using GITT in cells with 3D structured intercalation cathode materials**
Petronela Gotcu-Freis / *Karlsruhe Institute of Technology, IAM-AWP, Germany*
HANS J. SEIFERT • WILHELM PFLEGING

E4I-P-TH-PS2-13 **Processing and microstructure optimisation of Fe2VAl-based compounds for thermoelectric applications**
Pascal J. Jacques / *UCL/iMMC/IMAP*
C VAN DER REST • G ROY • A SIMAR

E4I-P-TH-PS2-14 **Hydrogen Storage in the mesoporous silice MCM-41 functionalized with copper**
Lala Setti Belaroui / *University of Oran*

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AREA F / BIOMATERIALS AND HEALTHCARE

F1 / MATERIALS FOR HEALTHCARE APPLICATIONS

F1I / Micro- and Nano-Engineered Materials for Medical Application

F1I-P-TH-PS2-1 **Influence of the fabrication process on the electrochemical behavior of Ti-6Al-4V alloy for biomedical applications**
Alba Dalmau Borras / *Institute for Industrial, Radiophysical and Environmental Safety, Universidad Politécnica de Valencia*
VIRGINIA GUIÑON PINA • FRANCISCO DE VESA • VICENTE AMIGO • ANNA IGUAL MUÑOZ

F1I-P-TH-PS2-2 **Antimicrobial activity of titanium dioxide-polyamide-composites depending on hygroscopicity**
Teresa Huppmann / *Institute of Medical and Polymer Engineering, Technical University of Munich*
STEFAN LEONHARDT • MARKUS SCHÖNBERGER • ERICH WINTERMANTEL

F1I-P-TH-PS2-3 **Influence of surface treatment on early osseointegration of dental implants installed without primary stability**
Maria Cristina Rosifini Alves-Rezende / *UNESP - Dental Materials and Prosthesis Department, Araçatuba, Brazil*
MÁRIO JEFFERSON QUIRINO LOUZADA • CARLOS ROBERTO GRANDINI • ANA PAULA ROSIFINI ALVES-CLARO

F1I-P-TH-PS2-4 **The effect of structure and chemical composition of anodic film on corrosion behaviour of anodised AZ61 alloy**
Alicja Balkowiec / *Materials Engineers Group Sp. z o.o., Warsaw, Poland*
LECH KWIATKOWSKI • ANNA KAPUSCIŃSKA • JAKUB MICHALSKI • RAFAL LUTZE • PIOTR TOMASSI

F1I-P-TH-PS2-5 **Multivalent presentation of potential selectin-inhibitors using bioactive nanoparticles**
Isabella Tavernaro / *Institute of Inorganic and Analytical Chemistry Justus-Liebig-University Giessen*
FIGEN BECEREN-BRAUN • LÉA BOUCHÉ • HANS-U. REISSIG • JENS DE RNEDDE • SABINE SCHLECHT

F1I-P-TH-PS2-6 **Influence of particle size on mechanical properties of calcium phosphate cements based on alpha-tricalcium phosphate**
Mônica Beatriz Thürmer / *Federal University of Rio Grande do Sul*
CARLOS EDUARDO DIEHL • LUÍS ALBERTO SANTOS

F1I-P-TH-PS2-7 **Effect of pH on the properties of biphasic calcium phosphate for bone cement**
Sirirat Rattanachan / *Suranaree University of Technology*
NUAN LA-ONG SRAKAEW

F1I-P-TH-PS2-8 **Synthesis and evaluation of antibacterial activity of silver doped hydroxyapatite via wet precipitation**
Tiago Volkmer / *Unifra*
MONICA THÜRMER • JÉSSICA ROSSATO • RENATO KERSTING

F1I-P-TH-PS2-9
Cellular investigation on Ti-30Ta for biomedical fields
Patricia Capellato / *Department of Material and Technology , Faculty of Engineering , UNESP, Brazil*
BARBARA S SMITH • KETUL C POPAT • ANA P R ALVES CLARO

F1I-P-TH-PS2-10
Microstructural de velopment of Titanium Alloys Produced by Arc Melting and Powder Metallurgy Techniques
Raissa Pereira / *University of Sao Paulo*
VINICIUS HENRIQUES

F1I-P-TH-PS2-11
Production of titanium alloys for surgical implants by powder metallurgy
Miriã Espurio / *University of Sao Paulo*
Vinicius Henriques

F1I-P-TH-PS2-12
Microstructural assessment of biological alloy Ti6Al4V submitted conventional and severe shot peening
Inés Fernandez-Pariente / *Universidad de Oviedo, Asturias, Spain*
REBECA ORVIZ PALACIO • AMADO QUINTERO-HERNÁNDEZ • SARA BAGHERIFARD • MARIO GUAGLIANO

F1I-P-TH-PS2-13
Syntering of undoped and silicon doped hydroxyapatite whiskers obtained by hydrothermal method
Bojan Jokic / *Faculty of Technology and Metallurgy, University of Belgrade*
MIODRAG MITRIC • ZELJKO RADOVANOVIC • RADA PETROVIC • DJORDJE JANACKOVIC

F1I-P-TH-PS2-14
Fatigue behaviour of an ultra-fine grained titanium alloy
Kadir Ozaltin / *Warsaw University of Technology*
MALGORZATA LEWANDOWSKA

F1I-P-TH-PS2-15
Mechanical Alloying of Porous and Full de nse Titanium for Bone Replacement: Influence of Processing Conditions
José A. Rodríguez / *Grupo de Metalurgia e Ingeniería de Materiales, E.T.S. de Ingeniería, Universidad de Sevilla, España*
RANIER E. SEPÚLVEDA • JUAN J. PAVÓN • VICENTE AMIGÓ • TORRES

F1I-P-TH-PS2-16
Mechanical Alloying of Porous and Full de nse Ti-15Mo for Bone Replacement: Influence of Processing Conditions
José A. Rodríguez / *Universidad de Sevilla*
RANIER E. SEPÚLVEDA • JUAN J. PAVÓN • VICENTE AMIGÓ • YADIR TORRES

F1I-P-TH-PS2-17
Mechanical Behaviour by Finite Element Method (FEM) of Titanium with Graded Porosity Obtained by Space-Holder Technique
Yadir Torres / *Universidad de Sevilla*
SERGIO MUÑOZ • JOSÉ A. RODRÍGUEZ • JUAN J. PAVÓN

F1I-P-TH-PS2-18
Antimicrobial hydrogels based on 2-hydroxyethyl acrylate, itaconic acid and poly(vinyl pyrrolidone)
Simonida Tomic / *Faculty of Technology and Metallurgy*
JOVANA JOVASEVIC • BOJANA KREZOVIC • SUZANA DIMITRIJEVIC • JOVANKA FILIPOVIC

F1I-P-TH-PS2-19
Influence of nanostructurization of titanium Grade2 substrate on TiO2 nanotubes layer and proteins adsorption.
Agata Roguska / *Warsaw University of Technology, Faculty of Material Science / Marta Zwolinska*
HALINA GARBACZ • KRZYSZTOF.J. KURZYDLOWSKI

F1I-P-TH-PS2-20
Comparative study of classical and nano-engineered photonic materials for RGP contact lenses by Nanoprobe and spectroscopy
Ivana Mileusnic / *NanoLab, Biomedical Engineering, Faculty of Mechanical Engineering, University of Belgrade*
IVAN DURICIC • JOVANA SAKOTA • DRAGOMIR STAMENKOVIC • D. KORUGA

F1I-P-TH-PS2-21
Finite Element Analysis of Titanium with Graded Porosity Obtained by Conventional Powder Metallurgy
Cristina Arevalo / *Universidad de Sevilla / Sergio Muñoz*
JOSÉ A. RODRÍGUEZ • JUAN J. PAVÓN • YADIR TORRES

F1I-P-TH-PS2-22
Growth of Calcium Phosphate coating on nanotubular anodized titanium
Ana Lucia Do Amaral Escada / *UNESP - São Paulo State University*
JOÃO PAULO MACHADO • ROBERTO NAKAZATO • ANA PAULA ALVES CLARO

F1I-P-TH-PS2-23
Characterization of a calcium phosphate after TiO2 nanotube growth
Ana Lucia Do Amaral Escada / *UNESP - São Paulo State University*
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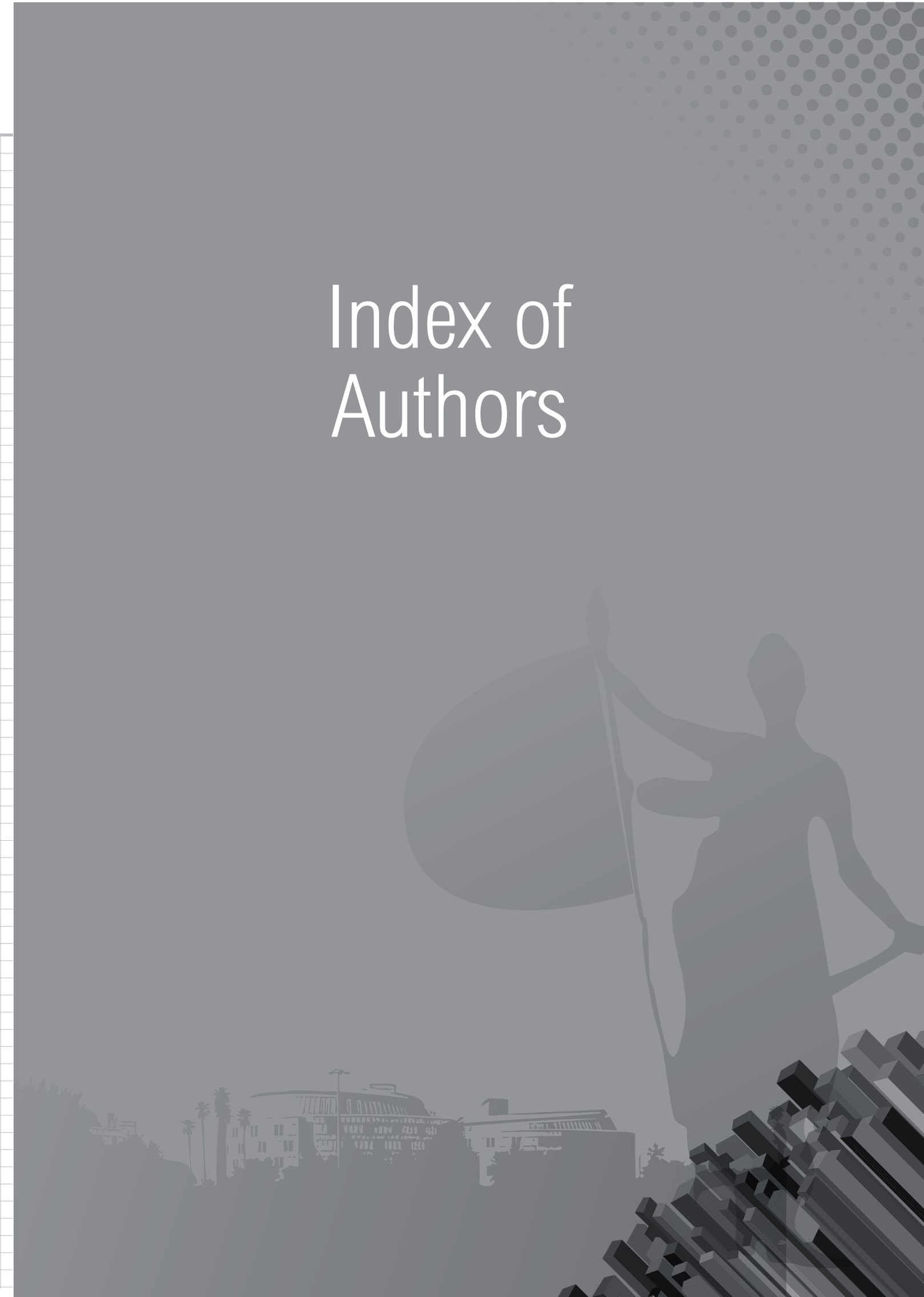

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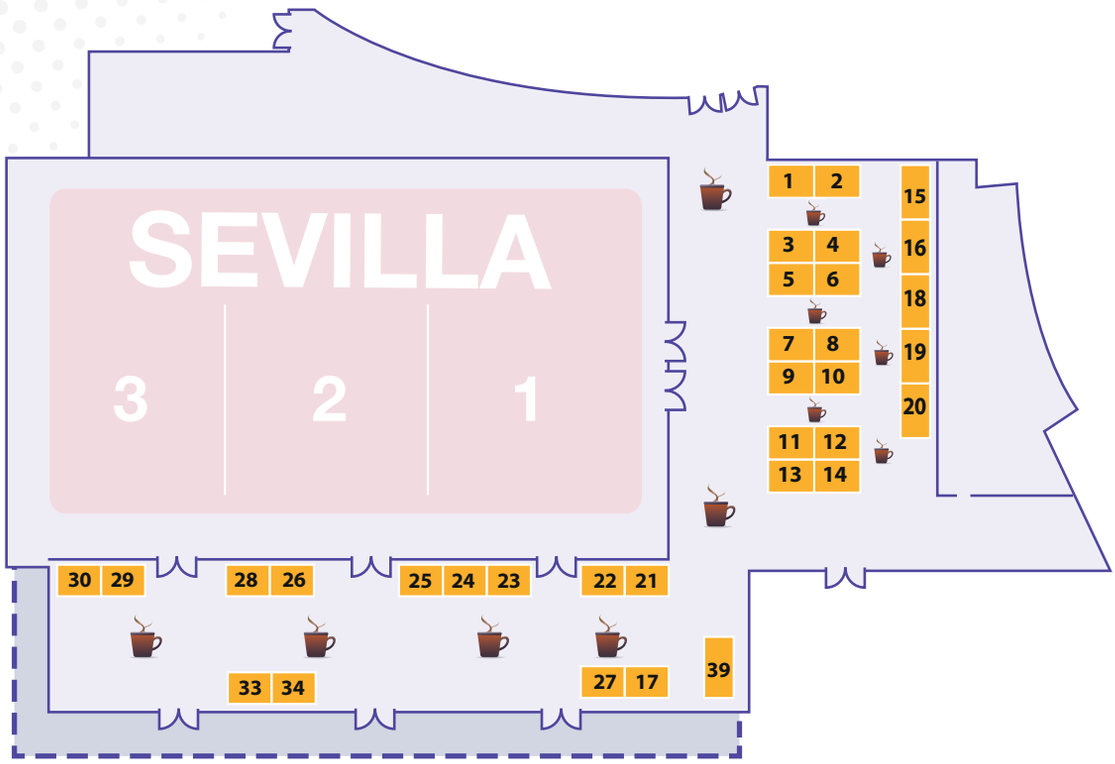

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- Selection of the possible courses of action, which bring together a critical mass of scientists important of the Moncloa Campus, in the attempt to perform excellent research as to reach applied in a reasonable time.
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- Development of patents
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Networking for European Materials Scientists and Engineers
FEMS is an association of 28 European Materials Societies in 23 different countries. The total number of materials scientists and engineers represented by the FEMS member societies is approximately 25,000.
The most important aim of FEMS is to overcome the fragmentation of the materials science and engineering discipline in Europe by strengthening interactions between the different European Materials Societies. As a founder member of the European Materials Forum, FEMS works closely with the European Parliament and Commission for safeguarding future funding for materials research and to guarantee a platform for knowledge exchange. FEMS also contributes to developing links and collaboration between RTO's and industry.
The Federation is well known for its series of EUROMAT conferences. These are held biennially and have grown significantly in size since that first held in Aachen in 1989 with 800 delegates to EUROMAT 2011 in Montpellier, attended by over 2150 delegates. They provide a unique networking opportunity for workers in the materials field.
On alternate years, FEMS also organises Junior EUROMAT, the major event for young materials scientists. This dedicated poster conference takes place in Lausanne, attracting more than 300 young people.
Eight years ago FEMS introduced an annual FEMS Presidents' Day, giving senior representatives of its member societies the forum to exchange views on important topics and to provide feedback to the Federation.
FEMS Awards – Every two years FEMS recognizes excellence in MSE with the prestigious European Materials Gold Medal, the Materials Science and Technology Prize, and the Materials Innovation Medal. It also gives visibility to outstanding young researchers every two years with the FEMS Lecturer Awards.

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Thermo-Calc Software AB (www.thermocalc.com) of Stockholm, Sweden is a global leader in computational thermodynamics software tools within the area of material science. Its flagship software tool Thermo-Calc has been used for more than 25 years by leading industrial, governmental and academic researchers and engineers to create multi-component thermodynamic and phase diagram calculations, and more than 1,000 licenses of Thermo-Calc software are currently in place. Its diffusion simulation tool DICTRA, which uses Thermo-Calc as its engine, has been widely utilized since its introduction more than 14 years ago. Thermo-Calc Software AB was founded as an independent company in 1997 as an off-spring from the Royal Institute of Technology (KTH), Department of Materials Science, in Stockholm, Sweden. for more information, contact Carl Lindqvist: info@thermocalc.se.

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The University of Coimbra (UC), one of the oldest Universities in Europe with more than 700 years old, is a reference in higher education and research in Portugal. Very recently UC was awarded by QS Intelligence Unit in the QS Stars University Ratings with maximum ranking, i.e. 5 stars in the fields of research, innovation, internationalization, facilities and accessibilities. UC also explores its knowledge transference and scientific potential through Pedro Nunes Institute (IPN), the 2011 Best Science Based Incubator in the World.
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