### Day 1 June 11, 2018

#### 08:30-09:00 Registrations

### Meeting Room: Linate

**Opening Ceremony**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>09:25-09:30</td>
<td>Introduction</td>
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</tbody>
</table>
| 09:30-09:55 | **Title: Encoded SERS plasmonic NPs in nanomedicine**  
Nekane Guarrotxena, Spanish National Research Council, Spain |
| 09:55-10:20 | **Title: Biodegradable magnesium implant materials – state of the art**  
Karl Ulrich Kainer, Helmholtz-Zentrum Geesthacht, Germany |

**Sessions:** Electronic, Optical and Magnetic Materials | Polymer Science and Technology

**Session Chair:** Alberto Jiménez Suárez, Universidad Rey Juan Carlos, Spain  
**Session Co-Chair:** Michael Kaplan, Simmons College, USA

#### Keynote Forum

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#### Session Introduction

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| 10:20-10:40 | **Title: Material Science and Optics: Applications from Spectroscopy to Metrology, from Fundamental Physics to Space**  
Simone Borri, Istituto Nazionale di Ottica, Italy |

#### Group Photo

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<thead>
<tr>
<th>Time</th>
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| 10:55-11:15 | **Title: First-principles design of low-dimensional quantum materials with nontrivial band topology**  
Mina Yoon, University of Tennessee, USA |
| 11:15-11:35 | **Title: Role of Lamb and Horizontal Acoustic Waves in Microscopic Mechanism of Structural Phase Transitions in Crystal Plates**  
Michael Kaplan, Simmons College, USA |
| 11:35-11:55 | **Title: Coherent Phenomena in Multi-functional Materials**  
Giti Khodaparast, Virginia Tech, USA |
| 11:55-12:15 | **Title: High sensitivity metamaterial heterodyne detectors at \(\lambda = 9\mu\text{m}\) operating room temperature**  
Carlo Sirtori, Université Paris Diderot, France |
| 12:15-12:35 | **Title: Sandwich method to grow high quality AlN by MOCVD**  
Ilkay Demir, Cumhuriyet University, Turkey |
| 12:35-12:55 | **Title: Magnetic skyrmions: Spin torque induced motion and electrical detection at room temperature in metallic multilayers**  
Nicolas Reyren, Unité Mixte de Physique, France |
| 12:55-13:15 | **Title: Spinorbitronics at Interfaces for THz Emission**  
Henri Jaffrès, Unité Mixte de Physique, France |

#### Lunch Break: 13:15-14:00 @ Mediterráneo Restaurants

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| 14:00-14:20 | **Title: Zinc nitride material for the development of novel electronic sensors and flexible electronics**  
Jose Luis Pau, Universidad Autónoma de Madrid, Spain |
| 14:20-14:40 | **Title: Segmental dynamics in a polymer material studied by single molecule imaging**  
Hiroyuki Aoki, Japan Atomic Energy Agency, Japan |
| 14:40-15:00 | **Title: Atomic force microscopy of butadiene-nitrile rubber composites deformation**  
Nikolay Shadrinov, Institute of Oil and Gas Problems SB RAS, Russia |
15:00-15:20 Title: Conductivity Studies of Methyl Cellulose/Chitosan/1-butyl-3-methyl imidazolium bis(trifluoro sulfonyl) imide Doped With Ammonium Triflate Based Polymer Electrolyte
Azwani Sofia Ahmad Khiar, Universiti Sains Islam, Malaysia
YRF: Transport properties of a two-dimensional PbSe square superstructure in an electrolyte-gated transistor
Maryam Alimoradi Jazi, University of Utrecht, Netherlands

Sessions: Biomaterials and Medical Devices | Ceramics and Composite Materials
Session Chair: Lay Poh Tan, Nanyang Technological University, Singapore
Session Co-Chair: Guy Antou, University of Limoges, France

15:35-15:55 Title: Modulation of Cellular Differentiation and Behavior via Engineering Cell Microenvironment
Lay Poh Tan, Nanyang Technological University, Singapore
Title: Instrumentation and numerical modeling of the Spark Plasma Sintering process – Application to scale-up
G Antou, University of Limoges, France

Network & Refreshment Break 16:15-16:30 @ Lobby

16:30-16:45 YRF: Elaboration of Ti based biocompatible alloys using Nb, Fe and Zr as alloying elements
Cristian Pantilimon, University Politehnica of Bucharest, Romania
YRF: Sustained drug release mechanism for topical and subcutaneous applications
Bakhtawar Ghafoor, National University of Sciences and Technology, Pakistan
YRF: Designing and fabrication of anisotropic stent for the treatment of coronary heart disease
Hafsa Inam, National University of Sciences and Technology, Pakistan
YRF: Design and fabrication of a hydrogel based pH sensor array for physiological applications
Mariam Mir, National University of Sciences and Technology, Pakistan

Panel Discussion

Day 2 June 12, 2018
Meeting Room: Linate

Keynote Forum

09:00-09:25 Introduction
Title: New concept of bioresorbable polymer-based ceramic hybrids for cardiovascular stent applications
Xiang Zhang, University of Cambridge, UK

09:25-09:50 Title: Multifunctional materials stemming out of coordination compounds
Nick Gerasimchuk, Missouri State University, USA

09:50-10:15 Title: Multiscale 3D printing with polymers
Geoffrey Mitchell, CDRSP-IPLeiria, Portugal

Sessions: Materials Science and Engineering | Metals, Mining, Metallurgy and Materials
Session Chair: Floricica Barvinschi, Politehnica University Timisoara, Romania
Session Chair: Arnaud Caron, KoreaTech, Republic of Korea
Session Co-Chair: Nobufumi Ueshima, Tohoku University, Japan

10:15-10:35 Title: Thermodynamic effects on metals tribology at the nanometer scale
Arnaud Caron, KoreaTech, Republic of Korea

Network & Refreshment Break 10:35-10:50 @ Lobby
10:50-11:10 Title: Relationship between grain distribution and strain localization in Cu-Al alloys
Nobufumi Ueshima, Tohoku University, Japan

11:10-11:30 Title: Numerical modeling of transport phenomena during the solidification of materials
Florica Barvinschi, Politehnic University Timisoara, Romania

11:30-11:50 Title: Influence of temperature on mechanical properties of a Fe-22Mn-0.6C TWIP steel
Alberto Monsalve, Universidad de Santiago de Chile, Chile

11:50-12:10 Title: Atomic defect-engineering at complex oxide surfaces and interfaces for electrolysis, sensing, and electronics applications
Felix Gunkel, RWTH Aachen University, Germany

12:10-12:30 Title: Deformation microstructure of surface layers of Ag, Cu, Ni and Al under friction in lubricant conditions
Lev Rapoport, Holon Institute of Technology, Israel

12:30-12:50 Title: Flaxseed mucilage as an eco-friendly inhibitor for ASTM A335 P11 steel in HCl
Luis Manuel Angelats Silva, Universidad Antenor Orrego, Peru

12:50-13:10 Title: InGaAs/InAlAs SLs via MOCVD for QCL Applications
Sezai Elagoz, Cumhuriyet University, Turkey

Lunch Break 13:10-13:55 @ Mediterráneo Restaurants

Sessions: Nanomaterials and Nanotechnology | Graphene and 2D Materials
Session Chair: Hajo Dieringa, Helmholtz-Zentrum Geesthacht, Germany
Session Co-Chair: Gennady N Panin, Gennady N Panin, IMT RAS, Russia / NITA, Dongguk University, South Korea

13:55-14:15 Title: Magnesium based Nanocomposites – Challenges and Potential
Hajo Dieringa, Helmholtz-Zentrum Geesthacht, Germany

14:15-14:35 Title: Phonons and their interaction with electrons in layered nanomaterials
Sergiu Cojocaru, NIPNE, Romania

14:35-14:55 Title: Solid Lipid nanoparticles for brain delivery of Paliperidone: Drug Release Kinetics, Therapeutic efficacy and Cyto-toxicity studies
Jaspreet Kaur Randhawa, Indian Institute of Technology Mandi, India

14:55-15:15 Title: Nanomaterials for optoelectronic and electronic applications
Valerio F Gili, Paris Diderot University, France

15:15-15:35 Title: Ferroelectricity in BaTiO₃ nanocrystals: towards future applications
Xiaohui Wang, Tsinghua University, China

Network & Refreshment Break 15:35-15:50 @ Lobby

Poster Presentations 16:30-18:00 @ Foyer
Poster Judge: Volodkin Dmitry, Nottingham Trent University, UK

MSE01 Title: Electrospraying of active carrier matrix systems with varying hydrophobicities
Aliyah S. Zaman, De Montfort University, UK

MSE02 Title: Hot corrosion behavior of 4.5 wt. % YSZ coatings elaborated by suspension plasma spraying
Andrés González-Hernández, Universidad Industrial de Santander, Colombia
MSE03  Title: First-principles study on the crystal structure of ZrTi$_2$ under pressure
Andrés González-Hernández, Universidad Industrial de Santander, Colombia

MSE04  Title: Lightweight filler for EMI shielding: carbon materials decorated with silver nanonparticle
Chae Lin Kim, Inha University Republic of Korea

MSE05  Title: Protein loading into vaterite CaCO$_3$ crystals by co-synthesis
Volodkin Dmitry, Nottingham Trent University, UK

MSE06  Title: Multilayer biopolymer-based capsules made using vaterite CaCO$_3$ crystals
Volodkin Dmitry, Nottingham Trent University, UK

MSE07  Title: Synthesis and properties of porous carbon derived from coffee waste as a supercapacitor electrode
Eunbeen Na, Inha university, Republic of Korea

MSE08  Title: Facile synthesis of oxygen defective yolk-shell BiO$_{2-x}$ for visible light-driven photocatalytic inactivation of Escherichia coli
Hongli Sun, The Chinese University of Hong Kong, Hong Kong

MSE09  Title: Cost-effective polyaminal polymer for the heavy metal removal
Jihyeong Ryu, Inha University, Republic of Korea

MSE10  Title: Fibrous NSAID Buccal films
Kazem Nazari, De Montfort University, UK

MSE11  Title: Ceramic/camphene based three-dimensional co-extrusion for biomimetic structure
Jong Woo Kim, Korea University, Korea

MSE12  Title: Effect of carbon-based nanomaterials on flexible polyurethane foaming process and foam fire behavior
Mª del Pilar Muñoz, CETEM, Spain

MSE13  Title: Observations on the effect of forging temperature on the microstructure of super-duplex stainless steel UNS S32760
Mariana Lucia Angelescu, University Politehnica of Bucharest, Romania

MSE14  Title: Development of more sustainable viscoelastic polyurethane foam
Marta Muñoz Martí, CETEM, Spain

MSE15  Title: Effect of surface treatment on wettability of tetragonal zirconia polycrystals (TZP)
Masao Yoshinari, Tokyo Dental College, Japan

MSE16  Title: Synthesis via hydrothermal route, morphology control, and luminescent properties of rare-earth doped GdPo4 particles
Matas Janulevicius, Vilnius University, Lithuania

MSE17  Title: Gradually porous bio ceramic scaffolds using ceramic/camphene-based three-dimensional co-extrusion
Min-Kyung Ahn, Korea University, Korea

MSE18  Title: Stretchable and flexible thermoelectric polymer composites for self-powered volatile organic compound vapors detection
Petr Slobodian, Tomas Bata University in Zlin, Czech Republic

MSE19  Title: Self-sensing of strain in a fiber glass/epoxy composite by built-in stripe of carbon nanotubes with Ag nanoparticles
Petr Slobodian, Tomas Bata University in Zlin, Czech Republic

MSE20  Title: Development of electrospun timolol maleate-loaded fibrous nanocoatings for ocular lenses
Prina Mehta, De Montfort University, UK

MSE21  Title: Electrospun coatings for micron scaled medical devices
Radeyah Ali, De Montfort University, UK

MSE22  Title: Sonicated decellularised xenograft – a perfect scaffold for cell adhesion
Swathy R, Frontier Lifeline & KM Cherian Heart Foundation Hospital, India

MSE23  Title: Facile biosensor for detecting norovirus using specific binding probes
Tae Jung Park, Chung-Ang University, Republic of Korea

MSE24  Title: Manufacturing of gasket sheet using paper manufacturing process without organic solvent
Yoonjong Yoo, Korea Institute of Energy Research, Republic of Korea
Title: Pickering emulsion droplets for thermally expandable microcapsule with core-shell structure using β-cyclodextrin
Ji-Young Jung, Inha University, Republic of Korea

Panel Discussion
Day 3 June 13, 2018
Meeting Room: Linate

Keynote Forum

Introduction
09:00-09:25
Title: A framework of materials for 4d printing
Saba Abdulghani Oliveira da Silva, CDRSP-IPLeiria, Portugal

09:25-09:50
Title: Development of biopolymers and biomaterials from lipids
Aman Ullah, University of Alberta, Canada

09:50-10:15
Title: Two- and three-dimensional multilayer bio-coatings as novel drug delivery systems. From nano to micro
Dmitry Volodkin, Nottingham Trent University, United Kingdom

10:15-10:40
Title: Optimising the acceleration of cell proliferation in a bioreactor for scaffold-based tissue engineering
Nuno Alves, CDRSP-IPLeiria, Portugal

Sessions:
Materials for Energy and Environmental Sustainability | Emerging Smart Materials |
Nanomaterials and Nanotechnology | Graphene and 2D Materials

Session Chair: Takashi Tokumasu, Tohoku University, Japan
Session Co-Chair: Alberto Jiménez Suárez, Universidad Rey Juan Carlos, Spain

Session Introduction
10:40-11:00
Title: Stacking Fault Energies for fcc Co-based Binary Alloys: A first principles study
Raquel Lizárraga, Royal Institute of Technology, Sweden

11:40-11:55
Title: Nanoscale transport phenomena of reaction materials in polymer electrolyte fuel cell
Takashi Tokumasu, Tohoku University, Japan

11:55-12:10
Title: Development of nanoreinforced resins with self-heating capabilities for 3D printing technologies
Alberto Jiménez Suárez, Universidad Rey Juan Carlos, Spain

11:55-12:10
Title: Manganese acetylacetonate as the precursor of high capacitance manganese oxides nanoparticles – the only active component in the supercapacitor electrode
Alice W M Chan, The Chinese University of Hong Kong, Hong Kong

12:10-12:25
Title: Highly charge polarized elemental phosphorus microbelt photocatalyst growing on liquid bismuth substrate
Yang Liu, The Chinese University of Hong Kong, China

12:25-12:40
Title: Microstructure evolution of A356 aluminum alloy reinforced with Si3N4 particles during mechanical milling
Heydi Fernandez, Universidad de Santiago de Chile, Chile

Lunch Break: 12:40-13:25 @ Mediterráneo Restaurants

13:25-13:40
Title: Defect States in Hexagonal Boron Nitride: Assignments of Observed Properties and Prediction of Properties relevant to Quantum Computation
A Sajid, University of Technology Sydney, Australia

13:40-13:55
Title: Isolation of 2D Material by sand paper abrasion
Peetam Mandal, National Institute of Technology Agartala, India
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<tr>
<td>13:55-14:15</td>
<td>Preparation and Characterization of Novel NLO Solids in As-O-Mo, As(P)-O-Mo(W) and As(P)-O-Nb(W) systems</td>
<td>Nick Gerasimchuk</td>
<td>Missouri State University, USA</td>
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<td>14:15-14:35</td>
<td>Combining computational design and soft synthesis to a resource efficient green chemistry of novel functional materials</td>
<td>Richard Weihrich</td>
<td>University of Augsburg, Germany</td>
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<td>14:35-14:55</td>
<td>Ultra-low energy SEM/STEM of graphene</td>
<td>Ludek Frank</td>
<td>Czech Academy of Sciences, Czech Republic</td>
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<td>14:55-15:15</td>
<td>Prediction of intermetallic phase layer thickness in laser assisted hybrid friction stir welding of aluminium to steel</td>
<td>Hee Seon Bang</td>
<td>Chosun University, Korea</td>
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<td>15:15-15:30</td>
<td>Correlation between magnetic saturation and component in WC-Ni85Fe15 alloys</td>
<td>Ruiwen Xie</td>
<td>Royal Institute of Technology, Sweden</td>
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<td>15:45-16:00</td>
<td>Analysis of strengthening mechanisms in nano-ODS Steel depending on preparation route</td>
<td>Alessandra Fava</td>
<td>University of Rome “Tor Vergata”, Italy</td>
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<td>16:00-16:15</td>
<td>Development of CNT-reinforced ceramic matrix composites for wear-resistance application and light-weight high strength CNT-reinforced epoxy composite</td>
<td>Dipanjana De</td>
<td>National Institute of Technology Agartala, India</td>
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<td>16:15-16:30</td>
<td>Study of a Fluidized Bed Reactor to Produce Green-Carbon Nanotubes at Pilot Scale</td>
<td>Andrés Muñoz</td>
<td>University of Antioquia, Colombia</td>
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<td>16:30-16:45</td>
<td>Complementary comparison of epitaxially grown gan layer grown on conventional sapphire and patterned sapphire substrates</td>
<td>Ismail ALTUNTAS</td>
<td>Cumhuriyet University, Turkey</td>
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<td>16:45-17:00</td>
<td>On the efficiency of Cycloextrin Inclusion complexes with Ibuprofen and Naproxen</td>
<td>Stiliyana Pereva</td>
<td>Sofia University, Bulgaria</td>
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<td>17:00-17:15</td>
<td>The influence of Nb content on the mechanical properties of micro alloyed low carbon steels</td>
<td>Tamara Aleksandrov Fabijanic</td>
<td>University of Zagreb, Croatia</td>
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