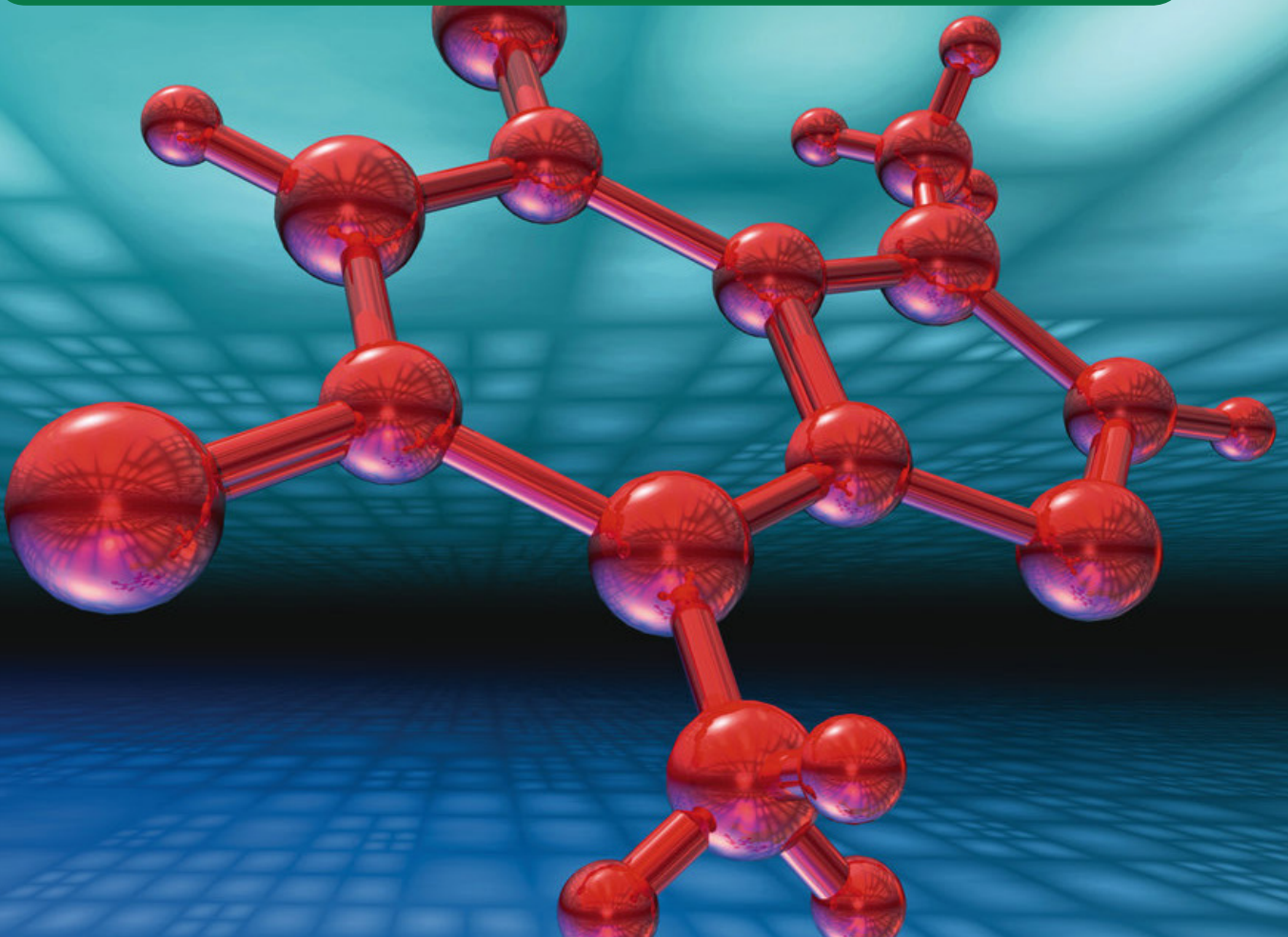


19th World Congress on
**Materials Science and
Engineering**

June 11-13, 2018 | Barcelona, Spain



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Meeting Room: Linate

conference**series.com** 09:00-09:25

Opening Ceremony

Keynote Forum

09:25-09:30 Introduction

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**

Session Introduction

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

Networking & Refreshment Break: 10:40-10:55 @ Lobby

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, Universite 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 @ Mediterraneo Restaurants

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 Khair, Universiti Sains Islam, Malaysia
YRF: Transport properties of a two-dimensional PbSe square superstructure in an electrolyte-gated transistor
15:20-15:35 **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

Session Introduction

- 15:35-15:55** Title: **Modulation of Cellular Differentiation and Behavior via Engineering Cell Microenvironment**
Lay Poh Tan, Nanyang Technological University, Singapore
15:55-16:15 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
16:45-17:00 **YRF: Synthetization and characterization of natural biocompatible composite having sustained drug release mechanism for topical and subcutaneous applications**
Bakhtawar Ghafoor, National University of Sciences and Technology, Pakistan
17:00-17:15 **YRF: Designing and fabrication of anisotropic stent for the treatment of coronary heart disease**
Hafsa Inam, National University of Sciences and Technology, Pakistan
17:15-17:30 **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: Florica Barvinschi, Politehnica University Timisoara, Romania

Session Chair: Arnaud Caron, KoreaTech, Republic of Korea

Session Co-Chair: Nobufumi Ueshima, Tohoku University, Japan

Session Introduction

- 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, Politehnica 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

Session Introduction

- 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: High-contrast monolithic photonic nanostructures in the AlGaAs-on-insulator platform**
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

- 15:50-16:10 **Title: First-principles study of optoelectronic, transport and ionic sieving properties of Ti₃C₂X₂ (X=O, OH and F) Mxene**
Golibjon R. Berdiyrov, Hamad bin Khalifa University, Qatar
- 16:10-16:30 **Title: Memristive nanostructures based on 2D crystals**
Gennady N Panin, IMT RAS, Russia / NITA, Dongguk University, South Korea

Poster Presentations 16:30-18:00 @ Foyer

Poster Judge: Volodkin Dmitry, Nottingham Trent University, UK

MSE01 **Title: Electro spraying 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 silvernanoparticle**
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**
M^a 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 $GdPo_4$ 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**
Radayah 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

MSE25 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-IPLLeiria, 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-IPLLeiria, 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 Jimenez Suarez, 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

Network & Refreshment Break 11:00-11:15 @ Lobby

- 11:15-11:35** Title: **Nanoscale transport phenomena of reaction materials in polymer electrolyte fuel cell**
Takashi Tokumasu, Tohoku University, Japan
- 11:35-11:55** 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** YRF: **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** YRF: **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** YRF: **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** YRF: **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** YRF: **Isolation of 2D Material by sand paper abrasion**
Peetam Mandal, National Institute of Technology Agartala, India

- 13:55-14:15 **Title: Preparation and Characterization of Novel NLO Solids in As-O-Mo, As(P)-O-Mo(W) and As(P)-O-Nb(W) systems**
Nick Gerasimchuk, Missouri State University, USA
- 14:15-14:35 **Title: Combining computational design and soft synthesis to a resource efficient green chemistry of novel functional materials**
Richard Wehrich, University of Augsburg, Germany
- 14:35-14:55 **Title: Ultra-low energy SEM/STEM of graphene**
Ludek Frank, Czech Academy of Sciences, Czech Republic
- 14:55-15:15 **Title: Prediction of intermetallic phase layer thickness in laser assisted hybrid friction stir welding of aluminium to steel**
Hee Seon Bang, Chosun University, Korea
- 15:15-15:30 **YRF: Correlation between magnetic saturation and component in WC-Ni85Fe15 alloys**
Ruiwen Xie, Royal Institute of Technology, Sweden

Network & Refreshment Break 15:30-15:45 @ Lobby

- 15:45-16:00 **YRF: Analysis of strengthening mechanisms in nano-ODS Steel depending on preparation route**
Alessandra Fava, University of Rome "Tor Vergata", Italy
- 16:00-16:15 **YRF: Development of CNT-reinforced ceramic matrix composites for wear-resistance application and light-weight high strength CNT-reinforced epoxy composite**
Dipanjana De, National Institute of Technology Agartala, India
- 16:15-16:30 **YRF: Study of a Fluidized Bed Reactor to Produce Green-Carbon Nanotubes at Pilot Scale**
Andrés Muñoz, University of Antioquia, Colombia
- 16:30-16:45 **YRF: Comprehensive comparison of epitaxially grown gan layer grown on conventional sapphire and patterned sapphire substrates**
Ismail ALTUNTAS, Cumhuriyet University, Turkey
- 16:45-17:00 **YRF: On the efficiency of Cyclodextrin Inclusion complexes with Ibuprofen and Naproxen**
Stiliyana Pereva, Sofia University, Bulgaria
- 17:00-17:15 **YRF: The influence of Nb content on the mechanical properties of micro alloyed low carbon steels**
Tamara Aleksandrov Fabijanic, University of Zagreb, Croatia

Panel Discussion

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