

Scientific Program

Global Summit on
Material Science & Engineering

Thursday
NOV 14, 2019

Conference Room 3B

08:30 - 09:00 Registrations

09:00 - 09:15 Introduction

Keynote Forum

09:15 - 09:40 Title: Plasma jets for nanostructured oxides
Claudia Riccardi, University of Milano-Bicocca, Italy

09:40 - 10:05 Title: Engineered nanomaterials for biomedical imaging and therapy
Gerard Tobias, Institut de Ciència de Materials de Barcelona, Spain

10:05 - 10:30 Title: Luminescence spectroscopy study of silicon carbide nanoparticles of 1-10 nm.
Complex analysis of spectroscopy measurements data
Janos Erostyak, University of Pecs, Hungary

10:30 - 10:50 @ Networking & Refreshments/Group Photo

Plenary Sessions

Sessions:

Advanced Nanomaterials | Materials Science and Engineering Physics | Nanobiomaterials |
Nanofabrication | Carbon Nanotechnology

Session Chair: **Janos Erostyak**, University of Pecs, Hungary

Session Co-Chair: **Takashi Matsuoka**, Tohoku University, Japan

10:50 - 11:10 Title: Separation of atomic-scale spin contrast on NiO(001) by magnetic resonance
force microscopy
Yasuhiro Sugawara, Osaka University, Japan

11:10 - 11:30 Title: Ultrasonic microwave and high pressure technology of nanoparticles for
nanomedicine and other applications
Witold Lojkowski, Polish Academy of Sciences, Poland

11:30 - 11:50 Title: Nano-imprinting and contact printing lithography for large-area micro/nano
fabrication in industry
Yung-Chun Lee, National Cheng Kung University, Taiwan

11:50 - 12:10 Title: A carbon nanoparticle enhanced electrolyte based seismic accelerometer
Hongyu YU, The Hong Kong University of Science and Technology, China

12:10 - 12:30 Title: Atomic-scale structural characterization of platinum nanoparticle catalysts for
polymer electrolyte fuel cells
Kun'ichi Miyazawa, Tokyo University of Science, Japan

12:30 - 12:50 Title: Novel magnetic material with large magnetic anisotropy
Masaki Mizuguchi, Tohoku University, Japan

12:50 - 13:10 Title: Surface modification of B₄C-SiC composite ceramics by mechanochemical
process and the effects on tribological properties
Hideki Kita, Nagoya University, Japan

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Sessions:

NanoFabrication | Nanobiomaterials | Nanocrystals | Graphene and its Applications | Nanotechnology in Tissue Engineering | Nanotechnology in Agriculture and Food Industry

Lunch (13:10 - 14:00)

Session Chair: **Imre Klebovich**, Semmelweis University, Hungary

Session Co-Chair: **Kun'ichi Miyazawa**, Tokyo University of Science, Japan

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| 14:00 - 14:20 | Title: Modeling of non-metallic inclusions removal during steel flow through the tundish
Marek Warzecha , Czestochowa University of Technology, Poland |
| 14:20 - 14:40 | Title: Quantum cones formation in semiconductors by laser radiation
Arturs Medvids , Riga Technical University, Latvia |
| 14:40 - 15:00 | Title: Nanotechnology in food and agriculture: Challenges and opportunities
Cecilia Bartolucci , National Research Council of Italy, Italy |
| 15:00 - 15:20 | Title: Nature's solution for a hard-soft-interface: Characterization of matrix structure of the tendon-bone interface for biomimetic and tissue engineering
Rainer H. Burgkart , Technical University Munich, Germany |
| 15:20 - 15:40 | Title: <i>In situ</i> analysis of metals on cryogenic temperatures using synchrotron light
Oswaldo Mitsuyuki Cintho , State University of Ponta Grossa, Brazil |
| 15:40 - 16:00 | Title: Data analysis for flexural behavior of Si-SiC foams with anisotropic structures
Iori Himoto , DY TEC Corp., Japan |

Networking & Refreshments (16:00 - 16:15)

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| 16:15 - 16:35 | Title: Multiscale numerical study on functional materials
Yasutomo Uetsuji , Osaka Institute of Technology, Japan |
| 16:35 - 16:55 | Title: Surface waves at nanostructured hyperbolic metamaterials and metasurfaces
Slobodan Vukovic , University of Belgrade, Serbia |
| 16:55 - 17:15 | Title: Recovery of metals from metallurgical dusts and slags
Harald Raupenstrauch , University of Leoben, Austria |
| 17:15 - 17:35 | Title: Elasto-caloric cooling effect in the Ti-Ni based alloys
Fei Xiao , Shanghai Jiao Tong University, China |
| 17:35 - 17:55 | Title: Metals property changes under effect of vacancy-cluster structures
Mark Levin , Corporate University "EFKO", Russia
Victor Novikov , National University of Science and Technology, Russia |

End of Day 1

Scientific Program

Global Summit on
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Friday
NOV 15, 2019

Conference Room 3B

09:00 - 09:10 Welcome and Introduction of Keynote Speakers

Keynote Forum

09:10 - 09:35 Title: New aspects and application potentials of nanostructured carbons
Katsumi Kaneko, Shinshu University, Japan

09:35 - 10:00 Title: Synthesis of nanomaterials by pulsed plasma in liquid
Tsutomu Mashimo, Kumamoto University, Japan

10:00 - 10:25 Title: Nanoscaled structures with partial ordering
Shin-ichi Shamoto, Japan Atomic Energy Agency, Japan

Networking & Refreshments (10:25 - 10:45)

Sessions:

Nano Materials Synthesis and Characterisation | Nanostructures | Nanophysics | Nanotech for Energy and Environment | Carbon Nanotubes | Nano Computational Modelling

Session Chair: **Janos Erostyak**, University of Pecs, Hungary

Session Co-Chair: **Takashi Matsuoka**, Tohoku University, Japan

Plenary Session

10:45 - 11:05 Title: Unveiling the chemical reactions for weakening the aluminum-epoxy resin adhesion strength: Large-scale, hybrid quantum-classical dynamics simulation
Shuji Ogata, Nagoya Institute of Technology, Japan

11:05 - 11:25 Title: Mechanical characterization of polymer nanostructures by AFM-nanoindentation
Anthimos Georgiadis, Leuphana University, Germany

11:25 - 11:45 Title: Josephson effect in superconducting nanograins with scale-free fractal-like distributions
Takashi Uchino, Kobe University, Japan

11:45 - 12:05 Title: Regulating wetting of refrigerant mixture droplet using nano structured surfaces
Zhen Yang, Tsinghua University, China

12:05 - 12:25 Title: Development of metrological-grade terahertz sources based on frequency down-conversion in lithium niobate nonlinear waveguides
Michele De Regis, Istituto Nazionale di Ottica-CNR, Italy

12:25 - 12:45 Title: Investigation of superhydrophobic and amphiphobic surface on the flexible polymer substrates
Young-Rae Cho, Pusan National University, South Korea

12:45 - 13:05 Title: History of nitride semiconductors, its current status and its future
Takashi Matsuoka, Tohoku University, Japan

Lunch (13:05 - 13:50)

Session Chair: **Witold Lojkowski**, Polish Academy of Sciences, Poland

Session Co-Chair: **Kun'ichi Miyazawa**, Tokyo University of Science, Japan

13:50 - 14:10 Title: Stereolithographic additive manufacturing of electromagnetic structures
Soshu Kirihara, Osaka University, Japan

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14:10 - 14:30 Title: Frequency upconversion imaging and spectroscopy: Principles and applications
Peter Tidemand-Lichtenberg, Technical University of Denmark, Denmark

14:30 - 14:50 Title: Towards physical biomimetic and neuromorphic device consisting of nanomaterials
Megumi Akai-Kasaya, Osaka University, Japan

14:50 - 15:10 Title: Molecular behaviors in nano lubricating film
Liran Ma, State Key Laboratory of Tribology, Tsinghua University, China

15:10 - 15:30 Title: Laser interference patterned growth of quantum structure arrays by molecular beam epitaxy
Changsi Peng, Soochow University, China

15:30 - 15:50 Title: Graphene biosensors testing osteogenic potency to enhance human cell therapy
Jorge S. Burns, University Politehnica of Bucharest, Romania

Poster Session & Refreshments (15:50 - 16:30)

16:30 - 16:50 Title: Effects of length of single molecular bridge on thermal rectification ratio at Gold/CNT interface
Chenghao Diao, Tsinghua University, China

16:50 - 17:10 Title: The varied amplitude cyclic heating effect on property and microstructure of quick additive manufactured Mg alloy
Gaofeng Quan, Southwest Jiaotong University, China

17:10 - 17:30 Title: 4D printing bases: A closer look at each base
Farhang Momeni, University of Michigan-Ann Arbor, USA

Posters

NN001 Title: A Water-surface floating PV integrated with double water-saturated MEPCM layers
Chi-Ming Lai, National Cheng-Kung University, Taiwan
Rong-Hong Chen, National Chiayi University, Taiwan

NN002 Title: Contact angle analysis of nanosized water droplet spreading on chemically heterogeneous surface using molecular dynamics simulation
Jiawei Di, Tsinghua University, China

NN003 Title: Targeting tumor microenvironment by bioreduction-activated nanoparticles for light-triggered virotherapy
S.-Ja Tseng, National Taiwan University, Taiwan

NN004 Title: Molecular dynamics simulation on evaporation of R32/R1234yf nanodroplet
Xinghui Wu, Tsinghua University, China

NN005 Title: Repolarization of M2 to M1 macrophages triggered by lactate oxidase released from methylcellulose hydrogel
Zi-Xian Liao, National Sun Yat-sen University, Taiwan

NN006 Title: New metallic ordered phase of perovskite CsPbI₃ under pressure
Yongfu Liang, Jilin University, China

NN007 Title: Influence of silver nanoparticles on fluorescence resonance energy transfer between dyes intercalated in DNA
Tamar Giorgadze, Ivane Javakhishvili Tbilisi State University, Georgia

Panel Discussion - Awards & Closing Ceremony

End of Day 2