

69th Conference
Scientific Federation



Final Scientific Program

3rd Global Congress & Expo on

Materials Science & Engineering

June 14-16, 2018 at Rome, Italy



Scientific Federation

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Venue: Holiday Inn Rome - Eur Parco Dei Medici, Rome

Day 1 June 14, 2018

Catullo

07:30-08:30 REGISTRATIONS
08:30-08:35 INTRODUCTION
08:35-09:00 OPENING CEREMONY

Plenary Forum

Session Chair: Masahiro YOSHIMURA, National Cheng Kung University, Taiwan

Session Co-Chair: Ajayan Vinu, University of Newcastle, Australia

09:00-09:50 **Title: Making the Hospital a safer place by the Sonochemical Coating of all its Textiles and Medical Devices with Antibacterial Nanoparticles**
Aharon Gedanken, Bar-Ilan University, Israel
09:50-10:40 **Title: Why Soft Processing(=Low-Energy Production) of Advanced Materials is Difficult but Necessary for Sustainable Society?**
Masahiro YOSHIMURA, National Cheng Kung University, Taiwan

Networking & Refreshments Break 10:40-10:55 @ Foyer

10:55-11:45 **Title: Defect Control to Eliminate Failures in Steels**
John Campbell, University of Birmingham, UK
11:45-12:35 **Title: Rhombohedral Super Hetero Epitaxy of Cubic SiGe on Trigonal C-plane Sapphire**
Sang H. Choi, NASA Langley Research Center, USA

Keynote Forum

Session Chair: Tohru Sekino, Osaka University, Japan

Session Co-Chair: Takeshi Morikawa, Toyota Central R&D Labs., Inc, Japan

12:35-13:15 **Title: Multifunctional materials for emerging technologies**
Federico Rosei, National Institute of Scientific Research(INRS), Canada

13:15-13:20 Group Photo

Lunch Break 13:20-14:20 @ La Serra Restaurant

14:20-15:00 **Title: Artificial Photosynthesis: Synthesis of Organic Chemicals from CO₂, H₂O and Sunlight Energy using Semiconductor/Molecular-Catalyst Hybrid Systems**
Takeshi Morikawa, Toyota Central R&D Labs., Inc, Japan
15:00-15:40 **Title: Advancement of Nanocellulose Multifunctional Composites**
Jaehwan Kim, Inha University, Republic of Korea
15:40-16:20 **Title: Development of Multifunctional Ceramic-based Nanocomposites by Metal Dispersion**
Tohru Sekino, Osaka University, Japan

Networking & Refreshments Break 16:20-16:35 @ Foyer

16:35-17:15 **Title: Advanced Photonic Polymers for High-Quality Display System**
Yasuhiro Koike, Keio University, Japan
17:15-17:55 **Title: Phase Change Materials Reinforced by Aluminium Foam – Breakthrough Solution for Thermal Energy Storage**
Jaroslav Jerz, Institute of Materials & Machine Mechanics, Slovak Academy of Sciences, Slovakia
17:55-18:25 **Title: Aerogel as an alternative bioactive ceramic in dentistry**
Csaba Hegedus, University of Debrecen, Hungary

19:00-20:00 Cocktails @ Poolside

Day 2 June 15, 2018

Catullo

Keynote Forum

Session Chair: Toshiyuki Itoh, Tottori University, Japan

Session Co-Chair: Tadafumi Adschiri, WPI-AIMR, Tohoku University, Japan

09:00-09:40 **Title: Ion-Diffusion Mechanism and Explanation of New Structure-Type Ion Conductors**
Masatomo Yashima, Tokyo Institute of Technology, Japan

09:40-10:20 Title: **Nanostructure Engineering in Oxide Thermoelectric Materials**
Michitaka Ohtaki, Kyushu University, Japan

Sessions: Advances in Dielectric Materials and Electronic Devices; Advances in Nano Materials Science; Nanomaterials and Nanocomposites; Carbon Nanomaterials

10:20-10:50 Title: **Atomic structure/configuration and physical properties studies of hybrid nanostructures by STEM-EELS**

Raul Arenal, University of Zaragoza, Spain

10:50-11:20 Title: **Development of High Performance Conducting-Bridge Random Access Memory (CB-RAM) using Ionic Liquid Engineering**

Toshiyuki Itoh, Tottori University, Japan

Networking & Refreshments Break 11:20-11:35 @ Foyer

11:35-11:55 Title: **Reversible Structural Transition in 2D-MoTe₂ Induced by Excess Charge Carriers**

Oleg Rubel, McMaster University, Canada

11:55-12:25 Title: **Magnetic sensing and imaging with NV centers in diamond**

Donghun Lee, Korea University, South Korea

12:25-12:55 Title: **Using a Single Soft Polymer to Transduce Mechanical Work**

Ruizheng Hou, Xi'an Jiaotong University, China

12:55-13:25 Title: **Titanium-zinc-bismuth oxides composite nanofibers with embedded graphene as high-performance photocatalyst for gas purification**

Wallace Leung, The Hong Kong Polytechnic University, Hong Kong

Lunch Break 13:25-14:25 @ La Serra Restaurant

14:25-14:55 Title: **Heterogeneous Dynamics in Porous Lithium Disilicate Systems Examined by Molecular Dynamics Simulations**

Junko Habasaki, Tokyo Institute of Technology, Japan

14:55-15:25 Title: **Hydrothermal Reforming using CeO₂ Nanocatalyst Synthesized by Supercritical Hydrothermal Method**

Tadafumi Adschiri, WPI-AIMR, Tohoku University, Japan

15:25-15:55 Title: **Thermal spike Engineering in the evolution of Nanostructures: Electronic, Optical, magnetic Properties**

Santanu Ghosh, Indian Institute of Technology Delhi, India

15:55-16:35 Title: **Will be updated**

Paula M. Vilarinho, University of Aveiro, Portugal

Networking & Refreshments Break 16:35-16:50 @ Foyer ARISTOTELE

Session2: Energy Materials; Materials Science & Engineering; Materials Chemistry and Sustainable Chemistry

Session Chair: Keiichi INOUE, Nagoya Institute of Technology, Japan

Session Co-Chair: Clara Piccirillo, CNR NANOTEC, Institute of Nanotechnology, Italy

10:20-10:50 Title: **Substrate type perovskite solar cells**

Peter Chen, National Cheng Kung University, Taiwan

10:50-11:20 Title: **The New Era of Marine Bacterial Photobiology- New types of Microbial rhodopsin**

Keiichi INOUE, Nagoya Institute of Technology, Japan

11:20-11:50 Title: **High thermally durable electronic textiles fabricated with silk for various applications**

Byung Hoon Kim, Incheon National University, Republic of Korea

11:50-12:20 Title: **Use of cork as template agent to prepare biomorphic ecoceramics**

Clara Piccirillo, CNR NANOTEC, Institute of Nanotechnology, Italy

12:20-12:50 Title: **Influence of surface preparation on oxidation behavior of Fe-base alloys**

Wojciech J. Nowak, Rzeszow University of Technology, Poland

12:50-13:20 Title: **Diffusion under external force field**

Bartek Wierzba, Rzeszow University of Technology, Poland

Lunch Break 13:20-14:20 @ La Serra Restaurant

14:20-14:50 Title: **Gate-voltage applied gas-desorption from a hydrogen-storage system in Metal-Oxide-Semiconductor**

Ken Hattori, Nara Institute of Science and Technology, Japan

14:50-15:20 Title: **Study of the angular momentum of light from plasmonic crystals**

Hock Chun Ong, The Chinese University of Hong Kong, Hong Kong

15:20-15:40 Title: **High Throughput Production of Carbon Materials by Molten Salt**

Fen-Tair Luo, Institute of Chemistry, Academia Sinica, Taiwan

15:40-16:00 Title: **Bottom-Up Silicon Nanotrees Electrodes for Integrated On-chip EDLCs**

Saïd Sadki, UMR SyMMES (CEA, CNRS, UJF), France

16:00-16:20 **Title: Effective and Simple Terpolymer Actuator based on Multilayered Concept for Next Generation Mirror**
Kritsadi Thetpraphi, LGEF, INSA Lyon, France

Networking & Refreshments Break 16:20-16:35 @ Foyer

Poster Presentations on Day 2 June 15, 2018 @ 17:00-19:00

- P-001** **Title: Diffusion calculations with two atomic models in h.c.p Zr-Nb diluted alloys**
Viviana Ramunni, CONICET, Argentina
- P-002** **Title: Investigation of the Thermal Diffusivity of Condensed Materials Based on Photometric Analysis of their Reflection Brightness Spectra**
Ermishkin Vyacheslav Alexandrovich, Baykov's Institute of Metallurgy and Materials science of Russian Academy of Sciences, Russia
- P-003** **Title: Evaluation of the Surface Quality of PbBi₄Te₇ and PbSb₂Te₄ Single Crystals by Computer Photometry**
Ermishkin Vyacheslav Alexandrovich, Baykov's Institute of Metallurgy and Materials science of Russian Academy of Sciences, Russia
- P-004** **Title: Investigation of Diffusion Processes in Multi Component Alloys from the Photometric Analysis of the Spectra of the Brightness of the Visible Light Reflection from Their Surface**
Ermishkin Vyacheslav Alexandrovich, Baykov's Institute of Metallurgy and Materials science of Russian Academy of Sciences, Russia
- P-005** **Title: Pyroprotein-based electronic textiles with high thermal durability**
Jun Woo Jeon, Incheon National University, Republic of Korea
- P-006** **Title: Influence of mechanical alloying on sintering process of copper modified with nanotubes addition**
M. Hebda, Cracow University of Technology-IMR, Poland
- P-007** **Title: Hydrogen Storage using Phyllostachys bambusoides-based Porous Blue Carbon**
Hyun-Seok Jang, Incheon National University, Incheon, Republic of Korea
- P-008** **Title: Hybrid silica coatings with antireflective and water repellent properties**
Attila Ábrahám, Budapest University of Technology and Economics, Hungary
- P-009** **Title: Lignin-Containing Coupling Agent for Improvement of Wood-Polymer Composite Properties**
Jevgenijs Jaunslavietis, Latvian State Institute of Wood Chemistry, Latvia
- P-010** **Title: Construction of iron sulfide-carbon interconnected graphene nanocomposites for superior lithium & sodium-ion storage**
Wei Huang, Technical University of Denmark, Denmark
- P-011** **Title: Liposome-based nanovesicles systems for drug delivery in cancer therapy**
Clara Piccirillo, CNR NANOTEC, Institute of Nanotechnology, Italy
- P-012** **Title: Quantum behavior of water confined in nano-cavities**
Raymond Moreh, Ben-Gurion University of the Negev, Israel

Day 3 June 16, 2018

Catullo

Sessions: Electronic, Optical and Magnetic Materials; Photonic & plasmonic nanomaterials; Polymer Science and Materials

Session Chair: Kyo D. Song, Norfolk State University, USA

Session Co-chair: Jaehwan Kim, Inha University, Republic of Korea

- 09:00-09:30** **Title: Review of smart optical materials development and systems for space applications**
Kyo D. Song, Norfolk State University, USA
- 09:30-10:00** **Title: Few-layer transition metal dichalcogenides as semiconductor quantum wells**
Vladimir Fal'ko, National Graphene Institute, The University of Manchester, UK
- 10:00-10:20** **Title: Design and Synthesis of All-Inorganic Perovskite Nanowires as a Photonic Material for UV Detectors**
Yingying Tang, Technical University of Denmark, Denmark
- 10:20-10:50** **Title: A bias-free, Schottky photo-diode Hall sensor**
Antonio Ruotolo, City University of Hong Kong, Hong Kong

Networking & Refreshments Break 10:50-11:05 @ Foyer

Plenary Forum

11:05-11:55 Title: Tendon and Muscle Regenerative Engineering to meet Grand Challenges: New Paradigms for Treatment of Shoulder Rotator Cuff Tear Injury
Cato T. Laurencin, University of Connecticut, USA

Sessions: Electronic, Optical and Magnetic Materials; Photonic & plasmonic nanomaterials; Polymer Science and Materials

11:55-12:25 Title: Photoluminescence Enhancement by Plasmonic Nanoparticles and Arrays
Shunsuke Murai, Kyoto University, Japan

12:25-12:55 Title: Photonic and Plasmonic Designs for the Enhanced Raman and Brillouin Scatterings
Qiang Liu, Shenzhen University, China

12:55-13:25 Title: Green polymer blend from polylactic acid and polyethylene vinyl acetate
Medhat Lotfy Tawfic, National Research Centre, Cairo-Egypt

Lunch Break 13:25-14:25 @ La Serra Restaurant

14:25-14:55 Title: Electrical breakdown enhancement of electrostrictive polymers via synthesis and processing control

Francesco PEDROLI, University of Lyon, INSA-Lyon, France

14:55-15:25 Title: Tin sulphides nanostructured layers for thin-film solar cells
Aliaksandr Khodin, Optics, Optoelectronics and Laser Techniques Association, National Academy of Sciences of Belarus, Belarus

15:25-15:45 Title: Small Organic Multiheterocycles: Molecular Hybridisation for the Design and Synthesis of Multifunctional Molecular Materials

K G Sreejalekshmi, Indian Institute of Space Science and Technology, India

15:45-16:05 Title: Strong and Stretchable Superabsorbent Smart Hydrogels
Dibyendu S. Bag, DMSRDE P. O., Kanpur, INDIA

Networking & Refreshments Break 16:05-16:20 @ Foyer

Certificate Felicitation @ Closing Ceremony

Bookmark Your Dates

4th Global Congress & Expo on

Materials Science and Nanoscience

October 15-17, 2018 at Amsterdam, Netherlands

<https://Scientificfederation.com/Materials-Nanoscience-2018/>

5th Global Congress & Expo on

Materials Science & Engineering

June 10-12, 2019 in Osaka, Japan

<https://scientificfederation.com/gcemse-2019/>

6th Global Congress & Expo on

Materials Science and Nanoscience

October 07-09, 2018 at Dubai, UAE