

6th International Conference on
**MATERIALS SCIENCE &
NANOTECHNOLOGY**

September 06-07, 2023 at Rome, Italy



Venue:

BELSTAY ROMA AURELIA

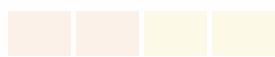
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SCIENTIFIC PROGRAM

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Day
1

WEDNESDAY

6th International Conference on
**MATERIALS SCIENCE &
NANOTECHNOLOGY**

September 06-07, 2023 at Rome, Italy

Meeting Hall: PARIOLI 1

Moderator: **Uladzimir Kalkouski**, *Fraunhofer Institute IPMS, Germany*

Registrations Open: 08:00-08:50

Opening Ceremony: 08:50-09:00

Keynote Talks

- 09:00-09:30 ----- Title: Entropy in multiple equilibria. Theory and applications to nonporous, microporous, and mesoporous materials
Gion Calzaferri, *University of Bern, Switzerland*
- 09:30-10:00 ----- Title: Redox Inspired Routes for Fabrication of HEAs and Novel Composites
Helen M. Chan, *Lehigh University, United States*
- 10:00-10:30 ----- Title: Key issues of multifluid side-by-side electrospun tri-layer Janus fiber
Sim-Wan Annie BLIGH, *Caritas Institute of Higher Education, Hong Kong*

**Group Photo
Refreshment Break @ 10:30-10:50**

Technical Session: 1

Session Chairs: **Gion Calzaferri & Sérgio De Souza Camargo Jr.**

- 10:50-11:10 ----- Title: Certified reference materials for number concentration of submicrometer particles
Paul C. DeRose, *National Institute of Standards and Technology (NIST), United States*
- 11:10-11:30 ----- Title: The future of bio-based bridges
Wouter Claassen, *Witteveen+Bos, The Netherlands*
- 11:30-11:50 ----- Title: Competition between chiral energy and chiral damping in the asymmetric expansion of magnetic bubbles
Gobind Das, *Khalifa University, Abu Dhabi, United Arab Emirates*

Day
1

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- 11:50-12:10 ----- Title: Monoclinic angle mediated negative thermal expansion behaviour of NiTi
Mengmeng (Dawn) Xu, *University of Western Australia, Australia*
- 12:10-12:30 ----- Title: Studies of Magnetic Domains and Magnetization Reversal Mechanism in Nickel Nano-particles
Arnab Ganguly, *Khalifa University, Abu Dhabi, United Arab Emirates*
- 12:30-12:50 ----- Title: Electricity-free lighting system bioinspired by *Haworthia obtusa*
Hiroki Gonome, *Yamagata University, Japan*
- 12:50-13:10 ----- Title: Thermal fatigue of high alloyed Ni hard cast iron for hot rolls
Milan Tercelj, *University of Ljubljana, FNSE, Slovenia*

Lunch Break @ 13:10-14:00

Technical Session: 2

Session Chairs: Paul DeRose & Wouter Claassen

- 14:00-14:20 ----- Title: Wave energy-assisted fluidic self-assembly of micro-LED chips for display module fabrication
Jae Soo Yoo, *Chung-Ang University, South Korea*
- 14:20-14:40 ----- Title: Development of high-entropy high-dielectric-constant Ba(Ti,Zr,Ta,Hf,Mo)O₃ film for metal-oxide-semiconductor field-effect transistors
Kao-Shuo Chang, *National Cheng Kung University, Taiwan*
- 14:40-15:00 ----- Title: Study of the interfacial effect of the hydration layer on fibrinogen adsorption and fibroblast adhesion states on nanoparticulated hydroxyapatite films
Tania Guadalupe Peñaflor Galindo, *National Institute of Technology, Nagaoka College, Japan*
- 15:00-15:20 ----- Title: Formulation of bituminous emulsions from binder materials with the presence of inorganic solids
Silvia Juliana Rincón Pérez, *Universidad Industrial de Santander, Colombia*

Day
1

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- 15:20-15:40 ----- Title: Study of Atomic Hydrogen Concentration in Grain Boundaries of Polycrystalline Diamond Thin Films for energy storage applications
Elida De Obaldia, *Universidad Tecnológica de Panamá, Panama*
- 15:40-16:00 ----- Title: Effect of fluorine atom position in Fmoc-Phe derivatives on its physical and antimicrobial properties
Moran Aviv, *Afeka College of Engineering and Tel-Aviv University, Israel*
- 16:00-16:20 ----- Title: Achievements of Capillary Electrophoresis in Analytical Nanometrology
Ángel Ríos, *University of Castilla - La Mancha, Spain*
- Refreshment Break @ 16:20-16:30**
- 16:30-16:50 ----- Title: Integrated modelling and simulation of laser powder bed fusion
Liangxing Lu, *Harbin Institute of Technology, China*
- 16:50-17:10 ----- Title: A Simple Model for Pickering Emulsion Polymerization: Styrene in a Semicontinuous Process as a Case Example
Francisco López-Serrano, *Universidad Nacional Autónoma de México, Mexico*
- 17:10-17:30 ----- Title: Establishing a data-driven structure-wicking relationship for porous membranes
Willfried Kunz, *Hochschule Karlsruhe University of Applied Sciences, Germany*
- 17:30-17:50 ----- Title: Biomass waste as porous carbon materials for application in energy storage devices
Carlos M. Pereira, *Faculdade de Ciências da Universidade do Porto, Portugal*

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THURSDAY

6th International Conference on
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Moderator: Eliane Trovatti, *University of Araraquara, Brazil*

Keynote Talks

- 09:00-09:30 ----- Title: Protein interaction analysis by surface plasmon resonance
Dennis G. Drescher, *Wayne State University, United States*
- 09:30-10:00 ----- Title: Experimental and computer simulation study of calcium carbonate surface scale deposition
Sérgio De Souza Camargo Jr., *Federal University of Rio de Janeiro, Brazil*

Technical Session: 3

Session Chairs: Francisco López-Serrano & Robert Honkanen

- 10:00-10:20 ----- Title: Exosome-dendrimer Hybrid Nanoparticles for Effective Delivery of Combination Therapeutics
Seungpyo Hong, *University of Wisconsin-Madison, United States*
- 10:20-10:40 ----- Title: Crosslinking starch with Diels–Alder reaction: water-soluble materials and water-mediated processes
Eliane Trovatti, *University of Araraquara, Brazil*
- 10:40-11:00 Refreshment Break
- 11:00-11:20 ----- Title: Novel advances in ocular impression cytology: Applications to translational studies and drug discovery
Robert Honkanen, *Stony Brook Ophthalmology, United States*
- 11:20-11:40 ----- Title: Geometric flow control in lateral flow assays
Farshid Jamshidi, *Karlsruhe University of Applied Sciences, Germany*
- 11:40-12:00 ----- Title: Graphene sensor arrays for rapid and accurate detection of pancreatic ductal adenocarcinoma cancer exosomes in plasma samples
Sami Ramadan, *Imperial College London, United Kingdom*
- 12:00-12:20 ----- Title: Grafting of Polyaniline by a Dynamic Inverse Emulsion Polymerization Technique onto Membranes as an Anti-Biofouling Agent: An Innovative Approach
Ran Suckeveriene, *Kinneret Academic College on the Sea of Galilee, Israel*

Day
2

TUESDAY

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12:20-12:40 ----- Title: In situ 4D tomography image analysis framework to follow sintering within 3D-printed glass scaffolds

Angelo Karunaratne, University of Moratuwa, Sri Lanka

12:40-13:00 ----- Title: Defects in oxides and semiconductors in modern microelectronics

Uladzimir Kalkouski, Fraunhofer Institute IPMS, Germany

13:00-13:45 Lunch Break

Day 2 - Poster Presentations @ 13:45-14:30

Posters Judges: Seungpyo Hong & Dennis G. Drescher

ICMSN-01 ----- Title: Ferroelectric Properties and Domain Structure of $\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3$ - SrTiO_3 Based Ceramics

Jeong-Ho Cho, Korea Institute of Ceramic Engineering and Technology, South Korea

ICMSN-02 ----- Title: Two-dimensional ultrathin Ti_3C_2 MXene nanosheets coated intraocular lens for synergistic photothermal and NIR-controllable rapamycin releasing therapy against posterior capsule opacification

Yang Huang, Department of Ophthalmology, Shanghai East Hospital, Tongji University School of Medicine, Shanghai, China

ICMSN-03 ----- Title: The effect of shell additives on $\text{Bi}_{0.5}(\text{Na}_{0.78}\text{K}_{0.22})_{0.5}\text{TiO}_3$ based piezo-electric ceramics

Seokhun Jang & Namhun Kim, Haven Co, Utd., South Korea

ICMSN-04 ----- Title: A comparative study of calcium phosphate coatings for biomedical applications

Dimka Ivanova Fachikova, University of Chemical Technology and Metallurgy, Bulgaria

ICMSN-05 ----- Title: Synthesis, dyeing ability and photostability of new reactive triazine dyes

Polya Mihaylova Miladinova, University of Chemical Technology and Metallurgy, Bulgaria

ICMSN-06 ----- Title: Study on hydrothermal technology for preparation of the heteroatom doped Mn_3O_4 -carbon electrode for supercapacitor

Wein-Duo Yang, National Kaohsiung University of Science and Technology, Taiwan

Award Ceremony

Day
2

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Technical Session: 4

Session Chairs: Dennis G. Drescher & Seungpyo Hong

- 14:30-14:50----- Title: The Potential of Wood for the Automotive Engineering of the Future
Ulrich Müller, *BOKU - University of Natural Resources and Life Sciences, Austria*
- 14:50-15:10----- Title: Electrodeposition of graphene oxide on dental implants: an alternative for surface treatment
Bruno Martins De Souza, *Military Institute of Engineering, Brazil*
- 15:10-15:30----- Title: Demonstration of effectiveness: plant extracts in the tuning of BiOX photocatalysts' activity
Nikita Sharma, *University of Miskolc, Hungary*
- 15:30-15:50----- Title: Accelerated development of materials using high-throughput strategies and AI/ML
Surya R. Kalidindi, *Georgia Institute of Technology, Atlanta, United States*
- 15:50-16:10----- Title: Magnetic and biocompatible polyurethane nanofiber biomaterial for tissue engineering
Brandon J. Tefft, *Medical College of Wisconsin, United States*
- 16:10-16:20 Refreshment Break
- 16:20-16:40----- Title: Nano-fiber technology for high-performance H₂ / fuel cell system
Shuichiro Hirai, *Tokyo Institute of Technology, Japan*
- 16:40-17:00----- Title: Effect of GO nano sheets on human leukocytes
Stefania Mardente, *Sapienza University of Rome, Italy*

Day-2 Concludes



We wish to see you again at



7th International Conference on

MATERIALS SCIENCE & NANOTECHNOLOGY

Sept 13-14, 2024 at Lisbon, Portugal

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