



# 2<sup>nd</sup> International Conference on **Materials Science and Nanotechnology**

**July 05-07, 2021 | Virtual Event**

Paris, France  
Central European Time, GMT+2

Time  
CET

08:45-08:55 Join the meeting (AV Check)

08:55-09:00 Welcome & Introductory Comments

## Plenary Presentation

09:00-09:40 **Next Generation Antibiotics**  
Ada E. Yonath, *Weizmann Institute of Science, Israel*

## Keynote Presentations

**Chair:** David Jones, *University of Melbourne, Australia*

09:40-10:20 **Plasmonics in DNA Amplification and Intra-Particle Reactivity Modulation**  
Murali Sastry, *Monash University, Australia*

10:20-11:00 **Skin Electronics for Medical Applications**  
Takao Someya, *University of Tokyo, Japan*

11:00-11:40 **Chemically Modified Graphene for Real-World Applications: 2D Graphene Oxide Liquid Crystal & Single Atom Catalyst**  
Sang Ouk Kim, *KAIST, Republic of Korea*

11:40-12:20 **Ductile Inorganic Semiconductors and Their Applications in Flexible Thermoelectrics**  
Lidong Chen, *Chinese Academy of Sciences, China*

12:20-13:00 **2D Energy Nanomaterials at Atomic Scale**  
Jordi Arbiol, *ICREA & ICN2, Spain*

13:00-13:10 **Break**

## Session: Electronic Materials

**Chair:** Eray Aydil, *New York University, USA*

13:10-13:30 **Non-Traditional Singlet Fission Materials**  
David Jones, *University of Melbourne, Australia*

13:30-13:50 **Ab Initio Exciton and Phonon Dynamics in Transition Metal Dichalcogenides**  
Matthieu Verstraete, *University of Liege, Belgium*

## Invited Presentations

13:50-14:20 **Addressing the Dendrite Challenge in Lithium and Potassium Metal Batteries**  
Nikhil Koratkar, *Rensselaer Polytechnic Institute, USA*

14:20-14:50 **Quantum Cutting with Rare-Earth Doped Halide Perovskites**  
Eray Aydil, *New York University, USA*

## Keynote Presentations

**Chair:** Azzah Dyah Pramata, *Institut Teknologi Sepuluh Nopember, Indonesia*

- 14:50-15:30    **2D Materials for Soft 3D Smart Structures**  
Ester Vazquez, *Institute for Applied Scientific Research, Spain*
- 15:30-16:10    **Up- and Down-Converting Materials; Breaking the Barrier of 100% Charge Transfer**  
Dirk Guldi, *Friedrich-Alexander-Universitaet Erlangen-Nuernberg, Germany*

## Session: Nanotechnology and Nanomaterials

- 16:10-16:30    **The Photochemistry in Visible-Light-Induced Redox Reaction of Polyoxometalate by  $\text{CuInS}_2$  Quantum Dots**  
Azzah Dyah Pramata, *Institut Teknologi Sepuluh Nopember, Indonesia*
- 16:30-16:50    **Single-Photon Emission from Two-Dimensional Indium Selenide: A Theoretical Study**  
Francesca Risplendi, *Politecnico of Torino, Italy*
- 16:50-17:10    **Elastic and Rheological Properties of Fullerenes as Applied to Natural and Artificial Friction-Lubrication Systems**  
Jacek Siódmiak, *UTP University of Science and Technology, Poland*

## Invited Presentation

- 17:10-17:40    **TBA**  
Elvira Fortunato, *Universidade NOVA de Lisboa, Portugal*

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09:25-09:30 Join the meeting (AV Check)

## Keynote Presentations

- 09:30-10:10 **Biointegrated Interfaces with Carbon Nanostructures**  
Maurizio Prato, *University of Trieste, Italy*
- 10:10-10:50 **Multi-Responsive 2D Materials : From Multi-Functional Opto-Electronic Devices to Physical Sensors for Health Monitoring**  
Paolo Samori, *University of Strasbourg & CNRS, France*
- 10:50-11:30 **Materials Space-Tectonics: A Conceptual Paradigm for Creating Second-Generation Porous Materials**  
Yusuke Yamauchi, *The University of Queensland, Australia*
- 11:30-12:10 **Engineering at the Nanoscale: A Strategy for Developing High Performance Functional Materials**  
Sabu Thomas, *Mahatma Gandhi University, India*

## Invited Presentation

- 12:10-12:40 **One Dimensional Nanomaterials for Emerging Energy Storage**  
Liqiang Mai, *Wuhan University of Technology, China*

12:40-12:50 Break

## Session: Biomaterials and Bio Devices

- 12:50-13:10 **The Role of Lipid Bilayer in the Joints Viewed by the Lens of Molecular Dynamics**  
Natalia Kruszewska, *UTP University of Science and Technology, Poland*

## Invited Presentations

**Chair:** Domenico Sagnelli, *ISASI-CNR, Italy*

- 13:10-13:40 **Low-Dimensional Heterostructures for Advanced Logic and Memory Devices**  
Deep Jariwala, *University of Pennsylvania, USA*
- 13:40-14:10 **Accelerating Future Photovoltaic Materials Innovation with the Help of Automation and Robotics**  
Aram Amassian, *North Carolina State University, USA*

## Keynote Presentations

- 14:10-14:50 **Raman Spectroscopy in Two-Dimensional (2D) Materials**  
Marcos Pimenta, *Universidade Federal de Minas Gerais, Brazil*
- 14:50-15:30 **Smart 2D Materials and Devices Based on Interfacing a Molecular Spin-Crossover Layer With Graphene**  
Eugenio Coronado, *Valencia University, Spain*

### Session: Materials Chemistry

- 15:30-15:50 **Characterization of Novel Photomobile Polymer Formulations for Future and Smart Materials**  
**Domenico Sagnelli**, *ISASI-CNR, Italy*
- 15:50-16:05 **Synthesis and Characterization of Titanium/Molybdenum Solid Solution MXenes for Hydrogen Evolution Reaction**  
**Lola Loupias**, *University of Poitiers, France*

### Keynote Presentation

- 16:05-16:45 **Design of an Optimal Microenvironment for the Attainment of High Yields of C<sub>2</sub>+ Products via the Electrochemical Reduction of CO<sub>2</sub>**  
**Alexis Bell**, *University of California, USA*

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## Keynote Presentation

11:30-12:10 **Materials, the Activators and Accelerators of our Progress**  
Rodrigo Martins, *Universidade NOVA de Lisboa, Portugal*

Sessions: Energy and environmental materials | Ceramics, Polymers and  
Composite Materials | Structural Materials

**Chair:** Suresh Aluvihara, *University of Peradeniya, Sri Lanka*

12:10-12:30 **The Outstanding Characteristics of Earth Materials and Further Developments in Materials Technology**  
Suresh Aluvihara, *University of Peradeniya, Sri Lanka*

12:30-12:50 **Photochromic Films Based on Photoactive Nanostructures Dispersed in Hybrid Organic-Inorganic Materials**  
Ubirajara Pereira Rodrigues Filho, *University of Sao Paulo, Brazil*

12:50-13:10 **Synergistic Effects of Halloysite Nanotubes on the Tensile Dynamic Fracture Toughness of Polyurethane**  
Rafaela Aguiar, *Carleton University, Canada*

13:10-13:30 **Effect of the Solidification Processing on Al-Si-Fe-(Cr, Mn and Ti) Alloys**  
Ignacio Alejandro Figueroa, *National Autonomous University of Mexico, Mexico*

## Poster Presentations

13:30-13:40 **Thermally Stable SiO<sub>2</sub>@TiO<sub>2</sub> core@shell Nanoparticles for Application in Photocatalytic Self-cleaning Ceramic Tiles**  
Ubirajara Pereira Rodrigues Filho, *University of Sao Paulo, Brazil*

13:40-13:50 **Inkjet Printing of 2D Perovskites for Solar Cells Applications**  
Barbara Wilk, *Saule Research Institute, Poland*

## Invited Presentation

13:50-14:20 **Engineering Macromolecules for Cancer and Infectious Diseases**  
Yi Yan Yang, *Institute of Bioengineering and Nanotechnology, Singapore*

**We wish to see you  
at  
FUTURE MATERIALS 2021**

**Organising Partner**

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