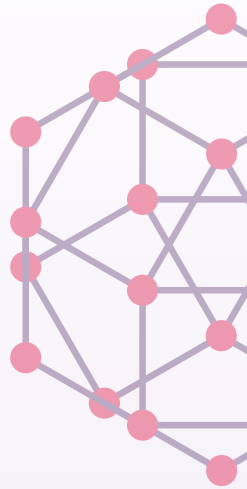


# International Congress on **Materials Science and Nanotechnology**



20

21

22

**November, 2025**  
**Singapore**

**CONFERENCE  
PROGRAM**



**IN-PERSON**

Village Hotel Changi  
1 Netheravon Rd, Singapore 508502



**VIRTUAL**

Greenwich Mean Time  
(GMT Time Zone)

# DAY 1

# THU 20

IN-PERSON

08:00-08:50	Registrations
08:50-09:00	Inaugural Session
09:00-11:00	In-person Keynote Presentations
11:20-18:20	In-person Oral Presentations

11:00-11:20 Coffee Break | 13:00-13:40 Lunch Break | 16:20-16:40 Coffee Break

# DAY 2

# FRI 21

IN-PERSON

09:00-10:50	In-person Keynote Presentations
11:10-16:10	In-person Oral Presentations
16:30-17:30	In-person Poster Presentations

10:50-11:10-Coffee Break | 12:50-13:30 Lunch Break | 16:10-16:30 Coffee Break

# DAY 3

# SAT 22

VIRTUAL

07:30-08:00	AV Testing
08:00-10:00	Virtual Keynote Presentations
10:00-14:40	Virtual Oral Presentations
14:40-15:10	Virtual Poster Presentation
15:10-16:30	Virtual Keynote Presentations
16:30-18:30	Virtual Oral Presentations

## Conference Timing & Participation Guidelines

- The conference will follow Singapore Time (SGT) for in-person sessions and Greenwich Mean Time (GMT) for virtual sessions.
- When the program mentions Local Timings, it refers to the presenter's own country time zone.
- In-person presentations will take place at Village Hotel Chango, located at 1 Netheravon Rd, Singapore 508502, while virtual presentations will be conducted via Zoom.
- Please remain available in the conference hall or Zoom meeting throughout the day, as the program may experience minor adjustments due to technical issues or presenter changes.

# DAY 01/AGENDA

## THURSDAY, NOVEMBER 20 @SPHERE 1

 IN-PERSON

**Zoom Meeting Link:** <https://us06web.zoom.us/j/81397583802?pwd=cNpV1zaHcLBJdfLXjq3EgJL2SVod2c.1>

**Moderator:** Manoj Kumar, IFTM University, India

**Chairs:** Mohd. Ghulam Haider Zaidi, G.B. Pant University of Agriculture & Technology, India  
Nasimuddin, Institute for Infocomm Research, A\*STAR, Singapore

08:00-08:50 Registrations

08:50-09:00 Inaugural Session

### Keynote Presentations

- 09:00-09:40 **Sergey Suchkov, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Russian Federation**  
Title: Personalized and Precision Medicine (PPM) as a unique healthcare model through biodesign-inspired & biotech-driven translational applications and upgraded business marketing to secure the human healthcare and biosafety
- 09:40-10:20 **Nasimuddin, Institute for Infocomm Research, A\*STAR, Singapore**  
Title: Exploring tunable materials for reconfigurable antenna technology
- 10:20-11:00 **Mohd. Ghulam Haider Zaidi, G.B. Pant University of Agriculture & Technology, India**  
Title: Supercritical fluids in polymer science and engineering

Group Photo

11:00-11:20 | Coffee Break @Foyer

### Oral Presentations

- 11:20-11:40 **Mitra Mosharraf, HTD Biosystems, United States**  
Title: Artificial intelligence in nano drug delivery: From formulation design to clinical translation
- 11:40-12:00 **Rajiv Nayar, HTD Biosystems, United States**  
Title: Designing a pharmaceutically acceptable drug delivery system: Importance of defining the Target Product Profile (TPP)
- 12:00-12:20 **Shamil Akhmedov, Russian Academy of Sciences, Russia**  
Title: Potential of using chemically modified iron nanocomposites with a carbon layer (Fe@C) in the treatment of atherosclerosis
- 12:20-12:40 **Wei Zhang, Taiyuan University of Technology, China**  
Title: Forging-mediated microstructural control and enhanced properties in lightweight refractory high-entropy alloys  $Al_{20}Nb_{15}Ti_{35}Zr_{30}$
- 12:40-13:00 **Atlang Gild Mpolokang, Botswana International University of Science and Technology, Botswana**  
Title: Analysis of exhaled human breath for diagnosis of Tuberculosis disease from human breath

13:00-13:40 | Lunch Break @Restaurant

- 13:40-14:00 **Mineo Hiramatsu, Meijo University, Japan**  
Title: Three-dimensional graphene: Synthesis and application
- 14:00-14:20 **Muhammet Toprak, KTH Royal Institute of Technology, Sweden**  
Title: Development of nanoparticle-based contrast agents for X-Ray fluorescence computed tomography bioimaging
- 14:20-14:40 **Shenmin Zhu, Shanghai Jiao Tong University, China**  
Title: Functionalization of cellulose nanocrystals and its application as biomaterials
- 14:40-15:00 **Sathish Sundar Dhilip Kumar, University of Johannesburg, South Africa**  
Title: Advancing PBM with nanobiomaterials: From lab to life
- 15:00-15:20 **Dan Sathiaraj, IIT Indore, India**  
Title: Laser shock peening-induced nanostructure evolution and mechanical response of LDED-fabricated CoCrNi medium-entropy alloy
- 15:20-15:40 **Huixue Ren, Shandong JianZhu University, China**  
Title: Optimization and mechanistic insights into electromagnetic shielding performance of nano-carbon composite films fabricated via magnetron sputtering
- 15:40-16:00 **Manoj Kumar, IFTM University, India**  
Title: Microwave assisted fabrication of poly butyl methacrylate reinforced biocomposites with improved mechanical properties solvent and chemical resistance
- 16:00-16:20 **Mohammed S. Al-Ghamdi, King Abdulaziz University, Saudi Arabia**  
Title: Temperature-dependent carrier dynamics in InAsP/AlGaInP quantum dot lasers: Threshold current behavior and emission state contributions
- 16:20-16:40 | Coffee Break @Foyer
- 16:40-17:00 **Cristina Pachiu, National Institute for Research and Development in Microtechnologies (IMT-Bucharest), Romania**  
Title: Spray deposition of Carbon-Zinc Oxide nanomaterials: A scalable approach for advanced electroshielding and flexible electronics
- 17:00-17:20 **Deepa Sharma, SUS Government College, India**  
Title: Doping and co-doping as optical engineering tools for Graphene
- 17:20-17:40 **Nikolai Kargin, National Research Nuclear University MEPhI, Russia**  
Title: Nanosensor for weak magnetic fields based on the Kramers degenerate spin system of  $^{14}\text{NV}-^{13}\text{C}$
- 17:40-18:00 **Shizheng ZHOU, University of Macau, China**  
Title: Label-free spatiotemporal decoding of single-cell fate via acoustic driven 3D tomography
- 18:00-18:20 **Seiichi TAGUCHI, Shinshu University, Japan**  
Title: Lactate-based polyester (LAHB) as a multi-functional modifier of non biodegradable polylactide

**Zoom Meeting Link:** <https://us06web.zoom.us/j/81397583802?pwd=cNpV1zaHcLBJdfLXjq3EgJL2SVod2c.1>

**Moderator:** Yashu Swami, Manav Rachna International Institute of Research and Studies, India

**Chairs:** Maria VISA, Transilvania University of Brasov, Romania

Thomas J. Webster, Hebei University of Technology, China

## Keynote Presentations

- 09:00-09:30 **Maria Visa, Transilvania University of Brasov, Romania**  
Title:  $\text{TiO}_2$  and  $\text{WO}_3$  semiconductor particles in contact with fly ash for removal the pollutants from wastewater
- 09:30-10:10 **Oleg Dimitriev, V. Lashkaryov Institute of Semiconductor Physics, Ukraine**  
Title: Management of light emission of near-infrared dyes mediated by nanomaterials: From anti-stokes to anti-kasha fluorescence
- 10:10-10:50 **Thomas J. Webster, Hebei University of Technology, China**  
Title: 30,000 Nanotextured implants in human: No cancer, no infection, only success

10:50-11:10 | Coffee Break @Foyer

## Oral Presentations

- 11:10-11:30 **Li Jun, The First Affiliated Hospital of Xinjiang Medical University, China**  
Title: Oral delivery of liver-targeting nanodrug against hepatic alveolar echinococcosis
- 11:30-11:50 **Xinlong Zhang, Taiyuan University of Technology, China**  
Title: Core equipment and key technologies for near-isothermal rolling forming of titanium-based difficult-to-form alloys
- 11:50-12:10 **Yashvi Vijaybhai Sheth, Indian Institute of Technology Bombay, India**  
Title: Mg-doped hydroxyapatite and its impregnation on nylon-6 fabric for effective uptake of Pb(II) and Cd(II) from wastewater
- 12:10-12:30 **Yashu Swami, Manav Rachna International Institute of Research and Studies, India**  
Title: Transforming VLSI circuit design through artificial intelligence: A review and future outlook
- 12:30-12:50 **Sergey Suchkov, N.D. Zelinskii Institute for Organic Chemistry of the Russian Academy of Sciences, Russian Federation**  
Title: The promise of nanotechnology in personalized & precision medicine: Drug discovery & development being partnered with nanotechnologies via the revolution at the nanoscale
- 12:50-13:30 | Lunch Break @Restaurant
- 13:30-13:50 **Zhou Yinning, University of Macau, China**  
Title: Acousto-optogenetics bandpass stabilizer: A programmable platform for mapping single-cell phenotypic life trajectories
- 13:50-14:10 **Ruonan Miao, Southeast University, China**  
Title: Photoluminescence properties of  $\text{Cs}_3\text{Cu}_2\text{Cl}_5$  and  $\text{CsCu}_2\text{Cl}_3$  with 1D-polyhedron-chain structure

- 14:10-14:30 **Huaxin Wu, Southeast University, China**  
Title: Molecule intercalation molds supramolecular assembly of crowned octahedrons into extremely thermally-anomalous two-family hybrid semiconductors
- 14:30-14:50 **Yusha Luo, Southeast University, China**  
Title: Design of near- $\beta$  Ti-Zr-Mo-Cu multi-principal element alloys with low elastic modulus and enhanced corrosion resistance
- 14:50-15:10 **Nazym Akhmediyeva, Institute of Metallurgy and Ore Beneficiation, Kazakhstan**  
Title: Alternative sources of alumina
- 15:10-15:30 **Yerkezhan Abikak, Institute of Metallurgy and Ore Beneficiation, Kazakhstan**  
Title: Innovative processing of red mud for recovery of valuable and rare elements
- 15:30-15:50 **Aleksandra Lobnik, University of Maribor, Slovenia**  
Title: Nanomaterials for sensor applications: Challenges, opportunities and risks
- 15:50-16:10 **Daniel José da Silva, Palacký University Olomouc, Czech Republic**  
Title: Biomimetic toolkit: Amino acids as modifiers for tunable cellulose nanofibril morphology

16:10-16:30 | Coffee Break @Foyer

## Poster Presentations (16:30-17:30)

**Poster Judge:** Mohd. Ghulam Haider Zaidi, G.B. Pant University of Agriculture & Technology, India

- P1 **Mihaela BADEA, Transilvania University of Brasov, Romania**  
Title: Challenges of nanotechnologies in medicine
- P2 **Hayato Hamashima, Chuo University, Japan**  
Title: Improving the performance of carbon nanotube sensors by selective noise removal
- P3 **Wen-Ta Su, National Taipei University of Technology, Taiwan**  
Title: MgO and SrO nanoparticle synthesized from Hemerocallis fulva extract for bone tissue regeneration
- P4 **Jae Won Lee, Chungbuk National University, Republic of Korea**  
Title: Synthesis of cobalt-iron selenide graphene-carbon nanotube composite with 3D layered structure using the spray pyrolysis process and evaluation of anode characteristics of potassium ion battery
- P5 **Tae Ha Kim, Chungbuk National University, Republic of Korea**  
**Gi Dae Park, Chungbuk National University, Republic of Korea**  
Title: Novel scalable synthesis mechanism of uniform size yolk-shell microsphere by one-pot spray pyrolysis with in-situ polymerization and application as outstanding performance anodes for potassium-ion batteries
- P6 **Osamu Maida, Osaka University, Japan**  
Title: Transient photocapacitance measurement for characterization of deep defects in B-doped (001) and (111) diamond films
- P7 **Mitsuki Kosaka, Chuo University, Japan**  
Title: Broadband non-destructive structural reconstruction via reflection angle estimation using carbon nanotube thin-film sensors

- P8 **Ji Lichen, Tongji University, China**  
Title: Oligopeptide modified ICG/Cisplatin@CaCO<sub>3</sub> for targeted osteosarcoma NIR-II imaging guided multimodal therapy
- P9 **Huang Jiaqing, Zhejiang Chinese Medical University, China**  
Title: Sophora flavescens-derived extracellular vesicles loaded with oncolytic vaccinia virus/IR1061 for NIR-II photoacoustic imaging guided multimodal treatment of diffuse large B-cell lymphoma
- P10 **MARINESCU Maria - Roxana, National Institute for Research and Development in Microtechnologies (IMT-Bucharest), Romania**  
Title: The integration of montmorillonite and RE:ZnO in humidity sensor development
- P11 **Min Gyeong Kang, Jeonbuk National University, Republic of Korea**  
Title: Enhanced piezoelectric potential of ZnO-based composite piezoelectric nanogenerators with various nanostructures
- P12 **Ira Artilia, Jenderal Achmad Yani University, Indonesia**  
Title: Biocompatible porosity of self-cure acrylic resin reinforced PAN-PMMA nanofibers
- P13 **Tatiana S. Kolesnikova, Southern Federal University, Russia**  
Title: Obtaining metal-polymer nanocomposites by thermolysis of calcium salts with unsaturated mono- and dicarboxylic acids
- P14 **Julia D. Bryantseva, Southern Federal University, Russia**  
Title: Magnetic nanocomposites of cobalt terephthalate with magnetite: Synthesis and functional characterization
- P15 **Jinhyeok Kang, Jeonbuk National University, Republic of Korea**  
Title: Solar-heated ferrimagnetic cellulosic sponge with mono-domain architecture prepared via bidirectional freeze casting for efficient liquid adsorption
- P16 **Ramakant Shivram Gavale, Indian Institute of Technology (IIT) Indore, India**  
Title: Stimuli-responsive phenothiazine-based materials: Multicolor emission, mechanochromism, and anticounterfeiting applications
- P17 **Ki-Seob Hwang, Korea Institute of Industrial Technology (KITECH), Republic of Korea**  
Title: Development of CO<sub>2</sub>-responsive colorimetric films for visual indication of kimchi fermentation maturity
- P18 **Jun-Young Lee, Korea Institute of Industrial Technology (KITECH), Republic of Korea**  
Title: Thermoresponsive polymer composites for wavelength-independent light scattering control

**Zoom Meeting Link:** <https://us06web.zoom.us/j/82164088818?pwd=5Mbf7hK2Wenld6xIvDCt47C8i3l24Y.1>

**Moderators:** Sara TAMY, Independent researcher, Morocco  
Yarub Kahtan Al-Douri, European Academy of Science, Belgium

07:30-08:00 AV Testing

### Keynote Presentations

GMT	Speaker's Local Time	
08:00-08:40	11:00-11:40	<b>Osman Adiguzel, Firat University, Turkey</b> Title: Thermomechanical transformations for thermoelasticity and superelasticity in shape memory alloys
08:40-09:20	16:40-17:20	<b>Vladimir G. Chigrinov, Hong Kong University of Science and Technology, Hong Kong</b> Title: Azodye nanolayers for liquid crystal devices: New trends
09:20-10:00	12:20-13:00	<b>Hakan ATEŞ, Gazi University, Turkey</b> Title: Computational materials engineering and nanotechnology: The transformative impact of the digital age on materials science

### Oral Presentations

10:00-10:20	21:00-21:20	<b>Yang Yang, University of New South Wales (UNSW), Australia</b> Title: Enhanced prediction and evaluation of hydraulic concrete compressive strength using multiple soft computing and metaheuristic optimization algorithms
10:20-10:40	18:20-18:40	<b>Xue Liu, Chinese Academy of Agricultural Sciences, China</b> Title: Selected-atom-regulated $C_3N_4$ for enhanced photocatalytic degradation of pesticides
10:40-11:00	17:40-18:00	<b>Nguyen Quang Thai, Can Tho University of Medicine and Pharmacy, Vietnam</b> Title: Antibacterial efficacy of silver nanoparticle–chitosan composite films against acne-associated bacteria
11:00-11:20	14:30-14:50	<b>Shahab Ahmadi Seyedkhani, Sharif University of Technology, Iran (Islamic Republic of)</b> Title: Cutting-edge biomaterials for next-generation brain-computer interfaces
11:20-11:40	16:50-17:10	<b>Mamata Pradhan, JSW Steel Coated Products Private Limited, India</b> Title: Smart-multifunctional nanocoatings
11:40-12:00	14:40-15:00	<b>Delia Teresa Sponza, Dokuz Eylül University, Turkey</b> Title: Ternary nanocomposites for photocatalytic degradation of endocrine disruptors
12:00-12:20	17:00-17:20	<b>Haseeba Shahzad, University of the Punjab, Pakistan</b> Title: A peculiar construct of lab on chip scaffold of bioluminescent bacteria-based cellulosic nanostructured biosensor for luciferase-based detection of organophosphates

Saturday, November 22

- |             |             |   |
|-------------|-------------|---|
| 12:20-12:40 | 13:20-13:40 | <p><b>Sara TAMY, Independent researcher, Morocco</b><br/>           Title: Potential applications of nanotechnology in industry 4.0: Towards advancing products and processes</p>   |
| 12:40-13:00 | 13:40-14:00 | <p><b>Fatima Zahra Siyouri, Mohammed V University, Morocco</b><br/>           Title: The impact of weak measurements on quantum characteristics of coupled semiconductor quantum dots system</p>  |
| 13:00-13:20 | 14:00-14:20 | <p><b>Salah OUDJERTLI, Research Center in Industrial Technologies (CRTI), Algeria</b><br/>           Title: Scalable CVD-Grown graphene on copper: Tailoring electrical, thermal, and optical properties for advanced device applications</p> |
| 13:20-13:40 | 16:20-16:40 | <p><b>Aleksandr S. Kamzin, Ioffe Physical-Technical Institute RAS, Russia</b><br/>           Title: Magnetic nanocomposites for future theranostic medicine: Diagnostics (MRI and MPI) and Magneto-HyperThermic Treatment (MHT)</p>           |
| 13:40-14:00 | 14:40-15:00 | <p><b>Salah OUDJERTLI, Research Center in Industrial Technologies (CRTI), Algeria</b><br/>           Title: Reduced graphene oxide as a gateway to next-generation nanoelectronics: Insights into structure property relationships</p>        |
| 14:00-14:20 | 19:30-19:50 | <p><b>Shuchitangshu Chatterjee, RKDF University, India</b><br/>           Title: Using indian galena ore for preparing thermoelectric generator, pressure transducer and solar selective coating</p>  |
| 14:20-14:40 | 09:20-09:40 | <p><b>Ivonne Eliana Monje López, University of Pamplona, Colombia</b><br/>           Title: Electrochemical behavior of silicon oxycarbide as negative electrodes in lithium- ion batteries: A study of binder–ionic liquid electrolytes</p>  |

### Poster Presentations

- |             |             |   |
|-------------|-------------|---|
| 14:40-14:50 | 22:40-22:50 | <p><b>Jiaqi Wang, National University of Singapore, Singapore</b><br/>           Title: A square 3-D sensor based on anomalous hall effect and spin hall effect</p>   |
| 14:50-15:00 | 22:50-23:00 | <p><b>Jiaqi Wang, National University of Singapore, Singapore</b><br/>           Title: Magnetic angular position sensor via a single wheatstone bridge</p>   |
| 15:00-15:10 | 07:00-07:10 | <p><b>Edwin Maina, Portland State University, United States</b><br/>           Title: A minimal correction law for magnetic nanofluids capturing concentration curvature and field-dependent enhancements</p> |

### Keynote Presentations

- |             |             |  |
|-------------|-------------|--|
| 15:10-15:50 | 12:10-12:50 | <p><b>Paulo Cesar De Morais, Catholic University of Brasilia, Brazil</b><br/>           Title: Cell viability assays under radiofrequency application modulated by nanomaterials</p> |
| 15:50-16:30 | 16:50-17:30 | <p><b>Yarub Kahtan Al-Douri, European Academy of Sciences, Belgium</b><br/>           Title: Nanotechnology overview of engineering</p>  |

**Oral Presentations**

- |             |             |  |
|-------------|-------------|--|
| 16:30-16:50 | 08:30-08:50 | <b>Meiyan Gao, University of California, United States</b><br>Title: Structurally precise coordination compounds: Applications in the separation and conversion of C-compounds   |
| 16:50-17:10 | 22:20-22:40 | <b>Rajkumar Singh, Kalyani Center for Technology and Innovation, India</b><br>Title: Life enhancement of fluid end using surface engineering on 4330V steel  |
| 17:10-17:30 | 19:10-19:30 | <b>Taoreed Adesola Adegbola, Tshwane University of Technology, South Africa</b><br>Title: Effects of pores distribution on tensile strength of recycled polyacrylonitrile and polyethylene terephthalate blends  |
| 17:30-17:50 | 12:30-12:50 | <b>Juan Manuel Giraldo Millán, Universidad del valle, Colombia</b><br>Title: Optical filter based on a 1D photonic crystal with graphene defect layers: $(\text{BaTiO}_3/\text{Y}_2\text{O}_3)\text{N}/\text{G}/\text{Y}_2\text{O}_3/\text{G}/(\text{BaTiO}_3/\text{Y}_2\text{O}_3)\text{N}$ for multispectral sensing |
| 17:50-18:10 | 22:50-23:10 | <b>Ibragimova Elvira Memetovna, Institute of Nuclear Physics of Uzbekistan Academy of Sciences, Republics of Uzbekistan</b><br>Title: Nanocrystals produced by nuclear reactions in Lithium Fluoride crystals  |
| 18:10-18:30 | 22:10-22:30 | <b>Raheema Jahangir Khan, Higher Colleges of Technology, United Arab Emirates</b><br>Title: Melting of colloidal crystals in suspension at the elevated temperatures with and without resins   |

# Thank You for Being a Part of M-Nano 2025!

We sincerely thank all speakers, delegates, and partners for making this conference a great success. Your enthusiasm and contributions have strengthened our shared vision of advancing innovation in materials science and nanotechnology.

“Together, we shape the future of materials for a sustainable world.”  
– Organizing Committee  
Mathews International Conferences

## Stay Connected For the Next Edition

2<sup>nd</sup> Edition of International Congress on  
Materials Science and Nanotechnology  
November 16-18, 2026 | Singapore

Interested in participating as a speaker or listener?

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