

Editorial

Preface of the International Symposium on Nanotechnology for Medicine, Environment and Energy [†]

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[†] All proceeding papers published in this volume were presented at the International Symposium on Nano-technology for Medicine, Environment and Energy, Veracruz, Mexico, 5–7 November 2025.

1. Introduction

The International Symposium on Nanotechnology in Medicine, Environment and Energy (SINAMEV 2025) was organized by the Center for Research in Micro and Nanotechnology, the Institute of Medical-Biological Research, the Institute for Health Sciences, the Faculty of Chemical Sciences, and the Faculty of Bioanalysis of the Universidad Veracruzana in Boca del Río, Veracruz, Mexico.

Conceived as a multidisciplinary meeting point, SINAMEV 2025 brought together researchers, students, and professionals working across the fields of nanotechnology, health, environmental protection, and energy. The symposium placed strong emphasis on using nanotechnology responsibly, promoting scientific dialog, and strengthening national and international collaborations aimed at addressing contemporary societal and technological challenges through advanced nanomaterials and nanosystems.

The scientific program encompassed a wide range of themes, including biosensors, microarrays, lab-on-a-chip devices, environmental nanotechnology and remediation, nanocatalysis, photovoltaic and energy-harvesting materials, supercapacitors, smart coatings, thermal insulators, nanomembranes, nanofilters, superhydrophilic surfaces, and alternative electrode materials. In the biomedical field, the symposium highlighted imaging and in situ diagnostic platforms, drug design and targeted delivery, biomaterials and tissue engineering, and nano-enabled strategies for bone and neuronal regeneration and antimicrobial protection.

All contributions included in this volume of *Materials Proceedings* underwent a rigorous peer-review process in accordance with the journal's editorial standards and the scientific guidelines established by the SINAMEV 2025 Scientific Committee. The accepted papers showcase recent advances in the synthesis, processing, characterization, and application of nanomaterials, with particular attention to sustainability, environmental responsibility, and translational potential in medical and energy-related technologies.

We extend our sincere appreciation to the members of the Scientific and Organizing Committees for their dedication throughout the review and preparation stages of the symposium. We also thank the authors and participants whose engagement and contributions enriched the discussions and helped consolidate SINAMEV 2025 as a dynamic and collaborative scientific forum.

We hope that this volume of *Materials Proceedings* will serve not only as a record of the research presented at SINAMEV 2025 but also as a valuable reference for the broader community working on nanotechnology-based solutions for medicine, environmental protection, and energy, fostering new ideas, partnerships, and innovations.



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3. Keynote Speakers

- Protein and DNA Engineering in Nanotechnology: An Approach to Biosensor Development, Claudia Rodríguez Almazán, ICAT-UNAM
- A Green Future in Energy Saving and Environmental Remediation Using Transparent Wood and Functional Membranes with Nanotechnology, Salomón Ramiro Vásquez García, UMSNH, Mexico
- Biotechnological Advances in DNA and Proteins for the Early Molecular Diagnosis of Multifactorial Diseases, Dr. Marisol Rosas Díaz, Autonomous University of Tamaulipas, Mexico
- Green Synthesis of ZnO Nanoparticles for Agricultural Applications, Verónica Carranza Oropeza, Faculty of Chemistry and Chemical Engineering, National University of San Marcos, Peru
- Nanosystems as Delivery Vehicles for Bioactive Compounds for Health, Cynthia Cano Sarmiento, National Technological Institute of Mexico, Veracruz Campus, Mexico
- Coherent propagation of LIPSS in transparent conductive oxides (TCOs), Paloma Fernández Sánchez, Complutense University of Madrid, Spain
- Multifunctional nanostructured materials for solar cells and bioactive coatings, María de la Paz Cruz Jáuregui, Center for Nanoscience and Nanotechnology, UNAM, Mexico
- Nanocatalysts: The Philosopher's Stone of the 21st Century?, Sergio Fuentes Moyado, Center for Nanoscience and Nanotechnology, UNAM, Mexico
- Advances in biotechnology with microalgae for water treatment, nutraceutical production, and energy generation, Juan Sandoval Herrera, University of the Americas, Colombia

- Fabrication of plasmonic nanostructures for optical limiting and surface-enhanced Raman scattering (SERS) applications, Promod Thakur, Jean Monnet University, France
- Green Chemistry in the Synthesis of Carbon Quantum Dots, Pablo Eduardo Cardoso Ávila, Center for Optical Research, Mexico
- Multifunctionality in Defect-Induced Hydroxyapatite: From Charge Transport to Luminescence and Magnetism, Dr. Manuel Herrera-Zaldivar, Center for Nanoscience and Nanotechnology, UNAM, Mexico
- Targeted Therapy Against Breast Cancer and Its Metastases, Patricia Juarez Camacho, Department of Biomedical Innovation, CICESE, Mexico.

4. Sponsors

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Conflicts of Interest: The authors declare no conflicts of interest.

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