

PREFACE

The 8th International Symposium on Advanced Materials and Nanotechnology (iSAMN2024) was held from 8th to 9th October 2024 at Bangi Resort Hotel, Bandar Baru Bangi, Selangor, Malaysia. iSAMN2024 was organised by the Institute of Nanoscience and Nanotechnology (ION2), Universiti Putra Malaysia, in collaboration with the National Nanotechnology Centre (NNC), an agency under the Ministry of Science, Technology and Innovation (MOSTI).

The theme for iSAMN2024 was “**Nanotechnology Pathway to Net-Zero Emissions by 2050**”, reflecting the global push towards addressing climate change and supporting the United Nations Sustainable Development Goals (SDGs). The symposium aimed to foster interdisciplinary dialogue and collaboration to advance low-carbon and sustainable technologies.

The technical program covered a broad range of topics, including but not limited to:

- Energy Storage
- Hydrogen Technology
- Renewable Energy
- Carbon Capture and Storage
- Nano-Enhanced Photovoltaics
- Energy-Efficient Buildings
- Environmental Monitoring and Remediation
- Green Processes, Materials, and Products
- Nanomaterials Synthesis and Processing
- Nanocatalyst Applications
- Metal-Organic Frameworks (MOFs)
- Sustainable Agriculture and Food
- Nanosensors and Nanoelectronics
- Biomedical Applications
- Other Related Topics in Nanoscience, Nanotechnology, and Advanced Materials

We would like to extend our heartfelt appreciation to all contributors, reviewers, and participants for their valuable involvement. Special thanks go to the editorial team, organising committee, and symposium secretariat for their dedication and hard work. We also gratefully acknowledge the support and collaboration of the staff and students of ION2, Universiti Putra Malaysia.

It is our hope that the knowledge shared and connections made during iSAMN2024 will inspire continued research, innovation, and partnerships toward a sustainable and technologically advanced future.

Thank you.