

Preface

We are pleased to present the proceedings of the International Conference on Advanced Materials and Characterization 2025 (ICAMC 2025), which was successfully held during August 11–13, 2025, at Sathyabama Institute of Science and Technology, Chennai, India. ICAMC 2025 was organized under the theme “*Advanced Materials for a Sustainable Future*,” the conference served as a vibrant international forum for researchers, scientists, and industry professionals to share ideas and discuss recent developments in materials science and characterization. The conference was jointly organized by Sathyabama Institute of Science and Technology and SG Lab Forum, Singapore, bringing together a global community working across a wide range of research areas. The conference topics include advanced energy materials, polymers, coatings, nanotechnology, ceramics, magnetic and optoelectronic materials, biomaterials, and AI-assisted materials research, reflecting the interdisciplinary nature of modern materials science.

The technical program included keynote, plenary, and invited lectures delivered by eminent researchers from academia, research institutions, and industry. Notable speakers included Prof. Sabu Thomas from Mahatma Gandhi University, Kerala, Prof. S. Arumugam from Tamil Nadu Open University, India, Prof. Shogo Kumagai from Tohoku University, Japan, Dr. Atsushi Watanabe from Frontier Laboratories, Japan, Prof. Chanatip Samart from Thammasat University, Thailand, Prof. R. Vinu from IIT Madras, India, Dr. Arup Dasgupta from Indira Gandhi Centre for Atomic Research, Kalpakkam, India, Dr. G. Sivakumar from ARCI, INDIA, Prof. M. S. Ramachandra Rao from IIT Madras, India, Dr. Arshad Salema from Monash University, Malaysia, and Dr. Sougata Ghosh from RK University, India. Their presentations offered valuable insights into emerging trends and technological advancements in advanced materials research.

The conference received an enthusiastic response, with around 210 abstracts presented through oral and poster sessions and more than 90 full-length manuscripts were received. Following a rigorous two-stage peer-review process, 23 high-quality papers were selected with an acceptance rate of approximately 22% for publication in the proceedings of SCOPUS-Indexed *EPJ Web of Conferences (EDP Sciences)*.

The success of ICAMC 2025 was made possible through the strong support of the university leadership, the dedicated efforts of the conveners, co-conveners, and organizing committee, and the valuable contributions of reviewers, session chairs, sponsors, and collaborators. We hope that this proceedings volume will serve as a useful reference and encourage further research toward sustainable and advanced material technologies. We sincerely thank all the authors for their valuable contributions, which form the core of this proceedings volume. We also express our deep appreciation to the reviewers for their constructive evaluations and to the editors and publishing team of EPJ Web of Conferences (EDP Sciences) for their professional support and timely publication of this volume. The success of ICAMC 2025 was further made possible through the dedicated efforts of the organizing committee, session chairs, sponsors, and collaborators. We hope this proceedings volume will serve as a useful reference and inspire further research toward sustainable and advanced material technologies.

Guest Editors

Dr. D. Dinesh Kumar

Sathyabama Institute of Science and Technology, India

Dr. Shyju T.S

Sathyabama Institute of Science and Technology, India

Dr. G. Murugadoss

Sathyabama Institute of Science and Technology, India

Dr. D. Balaji

Sathyabama Institute of Science and Technology, India

Dr. Raja Venkatesan

Yeungnam University, Republic of Korea

Prof. Atsushi Nakamura

Shizuoka University, Japan



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
CATEGORY - 1 UNIVERSITY BY UGC



INTERNATIONAL CONFERENCE ON
**ADVANCED MATERIALS &
CHARACTERIZATION**

August 11-13, 2025

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

CHENNAI-600119, TAMILNADU, INDIA

www.icamsist.in

CALL FOR PAPERS

ICAMC 2025 invites full-length research papers in the prescribed format on the conference website. The full-length research paper should contribute original research ideas, developmental ideas, analysis, findings, results, etc.

Selected articles after two-stage peer review process of presented papers at ICAMC 2025 will be published in the *EPJ Web of Conferences (EDP Sciences)*, which is indexed in *Scopus*.
<https://www.epj-conferences.org>

EPJ Web of Conferences



ICAMC 2025

Selected full-length manuscripts will be published in Cureus Journal of Engineering (Springer Nature).

Cureus

Part of **SPRINGER NATURE**



OFFICIAL SPONSORS

