

ARM 2025

11th Annual Research Meet

6 December 2025, Chennai, India

CONFERENCE PROCEEDINGS

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More information on ARM 2025 is given at:

www.venusinfo.org/research/2025.html

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Acknowledgment

With great pleasure, we welcome you all to the 11th Annual Research Meet – ARM 2025 hosted by the Centre for Research and Innovation (CRI), Venus International Foundation (VIF), Chennai, India on 6 December 2025. This scientific conference is organized with the theme – “Diverse Approach to Address Societal Challenges and Deliver Novel Solutions”. The conference focuses on recent research, developments, and challenges in the field of Agricultural Sciences, Engineering, Health and Medical Sciences, Humanities and Social Sciences, Management and Science.

The ARM 2025 conference serves as a catalyst and a driving force to enable the global flow of knowledge by connecting institutes and researchers to increase the probability of innovation. To strengthen universities, research institutes and industry to ensure the sustainable development of the society, ARM provides an opportunity to network, share ideas and present their work to a global community. The conference allows all participants to celebrate accomplishments, extend peer networks, and jointly explore future research directions. Further, the conference offers enlightening keynote lectures by renowned experts, followed by scientific sessions. The conference received an overwhelming response from researchers, which is leading to high-quality presentations and discussions. Finally, the conference team wishes every participant to have a productive and enjoyable time at this special conference.

Team, ARM 2025

Message from General Chair – ARM 2025



The Annual Research Meet is now a well-established platform for researchers and the key aim remains the opportunity to share ideas and meet the people to exchange new knowledge and innovation to stimulate fresh insights on different levels.

The Eleventh Research Meet – ARM 2025, in particular, was a challenging exercise as the Scientific Conference format allowed us to structure sessions differently, facilitating participation in innovative ways. The scope of papers will ensure an interesting day and the subjects covered illustrate the wide range of topics that fall into this important and ever-growing area of research.

I thank the Organizing Committee, Keynote Speakers, and Reviewers for their enthusiastic support. We would like to thank all the authors for submitting their work to ARM 2025 and for giving us the opportunity to assemble a high-quality program. We are happy to publish the proceedings of ARM 2025. I hope that ARM 2025 will be successful and enjoyable to all participants.

R. Sathish Kumar

R.SATHISHKUMAR

General Chair – ARM 2025

Organizing Committee – ARM 2025

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ARM 2025 Conference Schedule

Programme Venue: Green Park Hotel, Chennai

9:00 am onwards	Registration
INAUGURAL SESSION	
9.30 am	Welcome Address
9.35 am	Lighting of the Lamp and Thamiz Thai Vaazthu
9.45 am	Presidential Address by General Chair
9.50 am	Special Address by Dr. Sasitaran Iyavoo, University of Lincoln, England
Networking and Refreshment Break (10:00 – 10:30 am)	

KEYNOTE / INVITED SESSION Venue: Vijaya Hall (10:30 – 12:30 am)	
Speaker	Title of Talk
Dr. Suresh Pillai, National University Hospital, Singapore	Linking Quality Simulation Programs with Educational Theory Principles
Prof. Ajay Agarwal, Indian Institute of Technology Jodhpur, India	Microelectronics Enabling Early Diagnosis and POC
Dr. Mohana Sundaram Muthuvalu, Universiti Teknologi PETRONAS, Malaysia	Computational Neuro-Oncology: Advances in Numerical Techniques for Brain Tumour Modelling and Prediction
Dr. Yang Chia Yan, Nilai University, Malaysia	Small Tools, Big Research: Nanoparticles Transforming Science, Technology and Society

RESEARCH AWARDS CEREMONY SESSION – I Venue: Vijaya Hall (12:30 – 1:00 pm)

ARM 2025 Conference Schedule

Lunch and Networking Break (12:30 to 2:00 pm)

SCIENTIFIC SESSION – I

Venue: Vijaya Hall (2:00 – 3:00 pm)

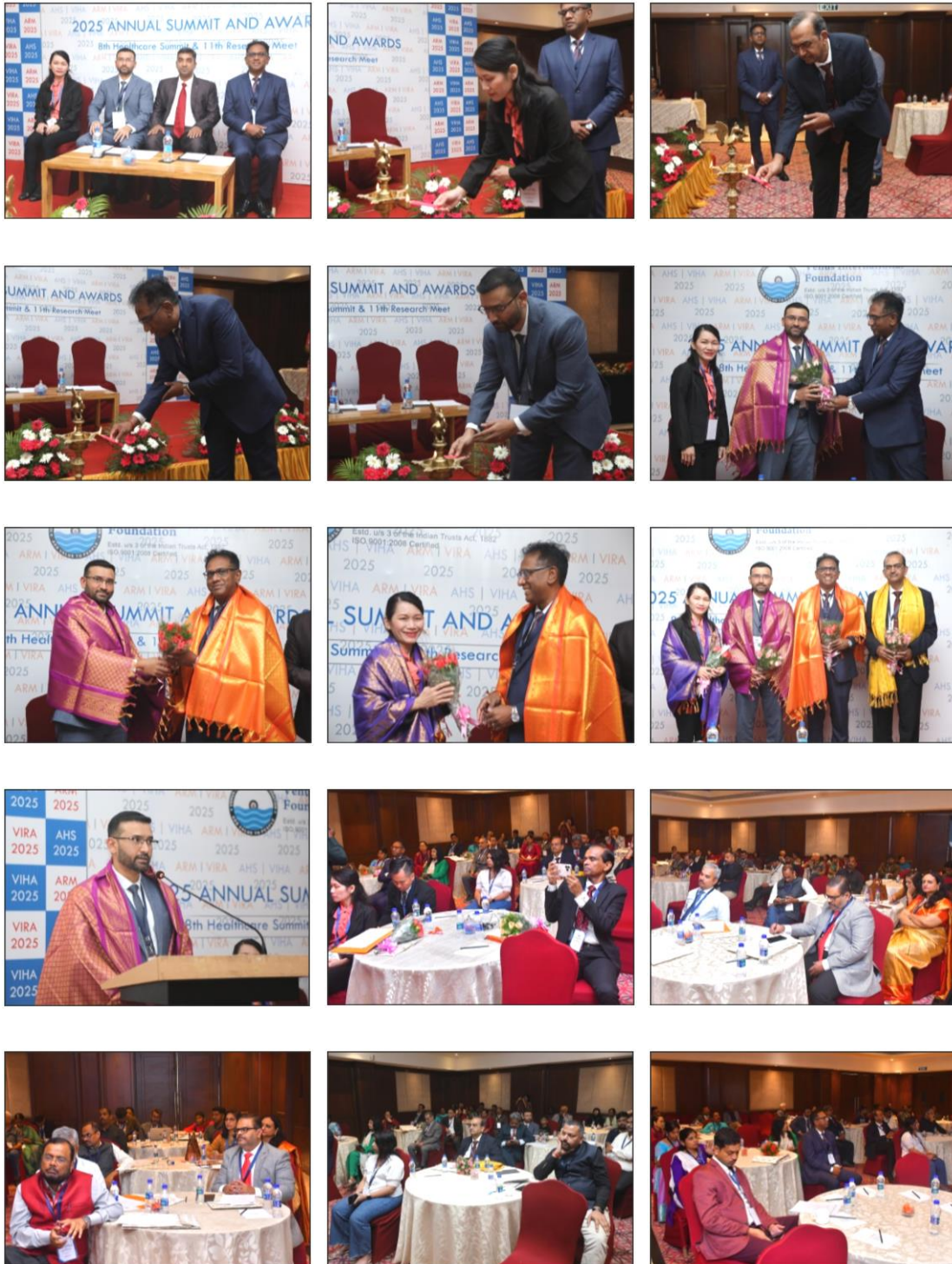
Speaker	Title of Talk
Dr. G. D. Satish Kumar, ICAR – Indian Institute of Oilseeds Research, Hyderabad, India	Yield Gaps in Oilseed Crops and Strategies to Reduce the Yield Gaps
Dr. Ujjwal Pal, CSIR – Indian Institute of Chemical Technology, Hyderabad, India	A Roadmap for Indigenous Green Hydrogen Technologies
Dr. Ritesh Kumar, CSIR – Central Institute of Mining and Fuel Research, Dhanbad, India	Development of Fly Ash Based Expandable Product Suitable as a Stowing Material In Underground Mines in India
Dr. Rajesh Kumar Singh, Defence Institute of Advanced Technology, Pune, India	Wideband and Low-Profile Antenna Array to be Integrated into RF Seeker for Electronic Warfare Applications
Dr. Pranjal Kalita, Central Institute of Technology Kokrajhar, India	Sustainable Heterogeneous Catalyst: Chemicals and Waste Water Treatment
Dr. Karuna Kar Nanda, Institute of Physics, Bhubaneswar, India	Oxygen-Mediated Applications of Nanomaterials
Dr. M. N Raja Shekar, UCESTH Jawaharlal Nehru Technological University Hyderabad, India	A Numerical Approach to Rotating MHD Hybrid ($Al_2O_3/Ag-H_2O$) Nanofluid Flow with Radiative and Heat Source Effects Over a Stretching Sheet
Dr. Ashish Srivastava, Siddharth University, Siddharthnagar, India	Selective Signaling at C5aR1 Mediated by Partial Ligand – Receptor Engagement

ARM 2025 Conference Schedule

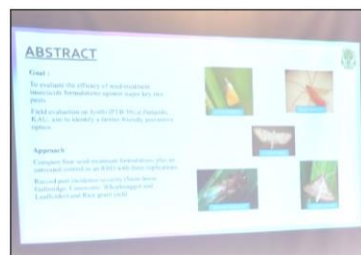
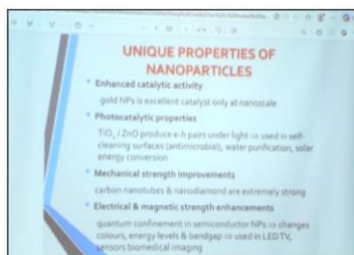
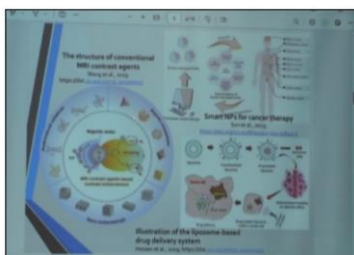
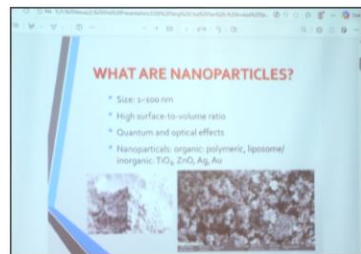
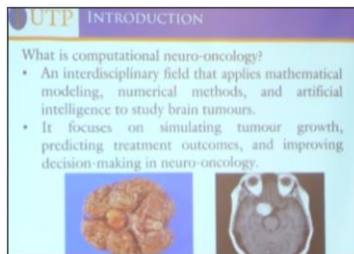
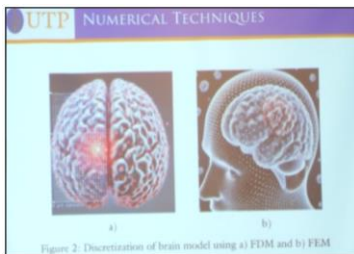
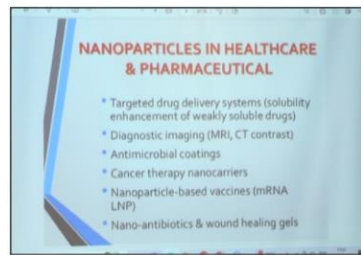
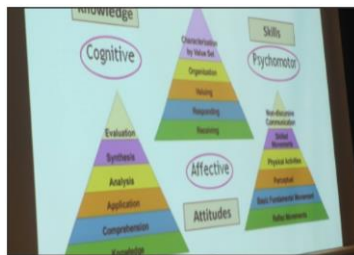
SCIENTIFIC SESSION – II Venue: Vijaya Hall (3:00 – 4:00 pm)	
Speaker	Title of Talk
Dr. K. Karthikeyan, Kerala Agricultural University, Thrissur, Kerala, India	Evaluation of Seed Treatment Insecticide Formulation against Major Pests of Rice
Dr. Venkat Ramana Reddy Maram, Mahatma Gandhi University, Nalgonda, India	Environmental Diversity in Tourism: Opportunities and Challenges with Special Reference to Telangana State
Dr. Kalyani Bandi, Sri Venkateswara University, Tirupati, India	Recent Advances in Food Processing
Dr. Arabinda Rajkhowa, North Lakhimpur University, Lakhimpur, India	Colonial Language Policy and the Revival of Assamese in Nineteenth-Century India

RESEARCH AWARDS CEREMONY SESSION – II Venue: Vijaya Hall (4:00 – 4:30 pm)
Valedictory, Networking & Refreshment (4:30 – 5:30 pm)

Glimpses 1



Glimpses 2



Keynote Speaker 1



Dr. Suresh Pillai, National University Hospital, Singapore

Title: Linking Quality Simulation Programs with Educational Theory Principles

Abstract: Medical Simulation Training

- Use of simulated scenarios to mimic real life conditions, emotions and situations.
- Involves use and interaction with park task trainer, high-fidelity simulator &/or simulated persons
- Provides experiential training ia a safe environment
- Learning reinforced through expert debriefing

Keynote Speaker 2



Prof. Ajay Agarwal, Indian Institute of Technology Jodhpur, India

Title: Microelectronics Enabling Early Diagnosis and POC

Abstract: Microelectronics plays a crucial role in the development of early diagnosis and Point-of-Care (POC) devices by enabling miniaturization, high sensitivity, and portability. Such devices find applications in blood glucose monitoring, infectious diseases testing including COVID-19, cardio-metabolic monitoring, urinalysis, cholesterol test strips, pregnancy and fertility testing and many others. The use of micro and nano technologies to realize highly sensitive sensors along with microfluidics, is leading to numerous innovative solutions suitable for healthcare applications. These lab-on-a-chip are integrated with readout electronics embedded with AI based algorithms. Among various nanomaterials realized, CNT, Nano-Gap and Nanowire based bio-chemical sensors are most utilized for diagnostic applications. Nano-Gap sensors work on two principles; either on the ‘change of the conductivity’ of the sensing layers between the nano-electrodes when exposed to analytes or based on ‘Electro-magnetic enhancement’ using micro-Raman spectroscopy. Nanowire sensors work on the principle of ‘Field Effect Transistor’ (FET) where charges associated with the chemical molecules or the biological species are attached on the nanowire surface and act as chemical or bio-gate. MEMS based gas detectors, as breathe analyzers, are also being explored for various diagnostic/screening applications.

Invited Speaker 1



Dr. Mohana Sundaram Muthuvalu, Universiti Teknologi PETRONAS, Malaysia

Title: Computational Neuro-Oncology: Advances in Numerical Techniques for Brain Tumour Modelling and Prediction

Abstract: Numerical analysis provides a rigorous mathematical foundation for understanding the progression of brain tumours and their response to treatment. In neuro-oncology, accurate computational models are indispensable for capturing the spatio-temporal evolution of tumour cells and predicting therapeutic outcomes. This work presents recent developments in mathematical modelling of brain tumour dynamics and the corresponding numerical techniques used to solve these complex models. Emphasis is placed on deterministic and hybrid formulations, together with efficient numerical solvers such as finite difference and finite element schemes. The implementation of these numerical strategies enables high-fidelity, patient-specific simulations that enhance both accuracy and computational performance. Furthermore, the integration of clinical imaging data within the modelling framework supports improved prediction of tumour behaviour under different treatment regimes. The findings demonstrate the essential role of numerical analysis in advancing computational neuro-oncology and highlight its potential to contribute to predictive, personalised treatment planning in clinical research.

Invited Speaker 2



Dr. Yang Chia Yan, Nilai University, Malaysia

Title: Small Tools, Big Research: Nanoparticles Transforming Science, Technology and Society

Abstract: Nanoparticles with its size from 1 to 100 nanometres, exhibit exceptional physicochemical properties that differ significantly from their bulk counterparts. The nanoscale characteristics of the nanoparticles such as high surface area, enhanced reactivity, quantum effects, and optical or electrical behaviours result in various applications that are reshaping scientific progress, technological innovation, and societal development. Although scientists around the world have been investigating the tiny particles, there are still leaving lots of research gaps for us to explore. In the environmental applications, nanoparticles function in photocatalytic degradation of pollutants, heavy metal remediation, air purification, and the development of efficient water-treatment systems. Nanoparticles improved solar cells, next-generation batteries, sensors, and catalytic processes in the energy sectors. In agriculture, nanoparticles display their powerful benefits from their nano-sized of fertilizers and pesticides that enhance crop productivity through smart delivery systems. Nanoparticles also applied in healthcare and pharmaceutical fields that support targeted drug delivery, antimicrobial surfaces, air purification system, nano-spray disinfectants and improved medical imaging. The recent advancement of nanotechnology opens new avenues for innovation, making nanoparticles essential tools for solving modern scientific and global challenges. The highlighted applications across major fields, demonstrating how these “small tools” are driving “big research” with transformative outcomes towards sustainability.

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