



**VIT**<sup>®</sup>  
**CHENNAI**  
Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

# PROGRAM SCHEDULE

## EMES 2025

International Conference on

# Emerging Materials for Energy & Sustainability

Date

6<sup>th</sup> -8<sup>th</sup> Febraury 2025

Venue

**Nethaji Auditorium &  
Mini Conference  
(AB-1)**



**Organized By  
Dept. Of Chemistry & eVIT-RC**

## PROGRAM SCHEDULE

TIMING	MAIN SESSION (NETHAJI AUDITORIUM)	PARALLEL SESSION (AB1-CONF. ROOM)
<b>DAY 1: 06 February 2025, Thursday</b>		
<b>8:00 AM- 9.00 AM</b>	Registration	
<b>9.00 AM - 10:30 AM</b>	Inauguration	
<b>10:30 AM - 11:20 AM</b>	<b>Plenary Lecture 1</b> <b>Speaker:</b> Prof. Enrico Traversa, University of Rome “Tor Vergata”, Italy <b>Topic:</b> Nanostructured Materials for Sustainable Development <b>Venue:</b> Nethaji Auditorium (AB1, 7 <sup>th</sup> Floor) <i>Chairperson:</i> Prof. Sabumon P C, Dean Acad. Res. VIT Chennai	
<b>11.20AM -11.40 AM</b>	-----Tea Break-----	
	Session Chair:	
	Prof. Atanu Dutta, VIT Chennai	Prof. Balamurali MM, VIT Chennai
<b>11:40AM -12:20PM</b>	<b>Keynote 1</b> <b>Speaker:</b> Dr. Christian Serre, ESPCI, Paris <b>Topic:</b> Metal Organic Frameworks as new candidates for indoor air quality	<b>Keynote 3</b> <b>Speaker:</b> Dr. Jayanta Mukhopadhyay, CGCRI, Kolkata <b>Topic:</b> GH2 Landscape and Deep Decarbonization through Solid Oxide Cell Technology - A Short Review in Indian Perspective
<b>12:20PM -1.00PM</b>	<b>Keynote 2</b> <b>Speaker:</b> Prof. Sujit K. Ghosh, IISER Pune <b>Topic:</b> Radioactive Pollutants Sequestration by Advanced Porous Materials for Safe Drinking Water	<b>Keynote 4</b> <b>Speaker:</b> Prof. Sangaraju Shanmugam, DGIST, South Korea <b>Topic:</b> Single-Atom Electrocatalysts for Nitric Oxide Reduction to Value-Added Chemicals
<b>1.00PM – 2:00PM</b>	-----Lunch break & Poster Session-----	
	Session Chair:	
	Prof. Manavalla Sreekanth, VIT Chennai	Dr. Amit Kumar Mandal, INST, Mohali

<b>2:00PM – 2:35PM</b>	<b>Invited-1</b> <b>Speaker:</b> Dr. Samrat Ghosh, CLRI, Chennai <b>Topic:</b> Porous Organic Photocatalysts for Energy Conversion	<b>Invited-3</b> <b>Speaker:</b> Dr. Debamalya Banerjee, IIT Kharagpur <b>Topic:</b> Solution processed low-temperature synthesis of ZnSe nano particle-reduced graphene oxide composite for its application as thin film phototransistor and thermoelectric generator
<b>2:35PM – 3:10PM</b>	<b>Invited 2</b> <b>Speaker:</b> Prof. Muhammed Musthafa, IISER, Pune <b>Topic:</b> Electricity from Acid Base Reaction	<b>Invited 4</b> <b>Speaker:</b> Dr. Vishal Mahesh Dhavale, CECRI-Chennai <b>Topic:</b> Electrocatalyst and Electrolyte Engineering for Energy Applications
<b>3:10PM – 3:40PM</b>	-----Tea Break-----	
	Session Chair:	
	Dr. Georges Mouchaham, ESPCI, Paris	Prof. Muhammed Musthafa, IISER Pune
<b>3:40PM – 4:15PM</b>	<b>Invited 5</b> <b>Speaker:</b> Dr. V. Ganesh, CECRI, Karaikudi <b>Topic:</b> Enzymatic Biofuel Cells: A Paradigm Shift in Sustainable Bio-electrochemical Conversion Process	<b>Invited 7</b> <b>Speaker:</b> Dr. M. Ulaganathan, Amritha Viswa Vidyapatham, Coimbatore <b>Topic:</b> Vanadium Redox Flow Batteries for High Energy Storage Applications
<b>4:15PM – 4:50PM</b>	<b>Invited 6</b> <b>Speaker:</b> Dr. Janardan Kundu, IISER Tirupati <b>Topic:</b> Emergent Opto-electronic Properties of Low Dimensional Metal Halide Hybrids	<b>Invited 8</b> <b>Speaker:</b> Dr. Kingshuk Roy, TCG Crest, Kolkata <b>Topic:</b> Towards achieving high coulombic efficiency for Aqueous Zinc Metal Batteries
<b>4:50PM – 5:00PM</b>	Oral-1	Oral-6
<b>5:00PM – 5:10PM</b>	Oral-2	Oral-7
<b>5:10PM – 5:20PM</b>	Oral-3	Oral-8

5:20PM – 5:30PM	Oral-4	Oral-9
5:30PM – 5:40PM	Oral-5	Oral-10
7:00PM – 9:30PM	<b>Conference Dinner</b>	
<b>DAY 2: 07 February 2025, Friday</b>		
9:00AM – 9.50AM	<b>Plenary Lecture 2</b> <b>Speaker:</b> Prof. Guillaume Maurin, ICGM, Montpellier <b>Topic:</b> Computational Approaches to MOFs-based Sorbents and Membranes <b>Venue:</b> Nethaji Auditorium (AB1, 7 <sup>th</sup> Floor) <b>Chairperson:</b> Dr. Christian Serre, ESPCI, Paris	
9.50AM -10:30AM	-----Tea Break-----	
	Session Chair:	
	Dr. Christian Serre, ESPCI, Paris	Dr. Debamalya Banerjee, IIT KGP
10:30AM -11:10AM	<b>Keynote 5</b> <b>Speaker:</b> Prof. S. Sampath, IISc Bangalore <b>Topic:</b> Sustainable Materials for Energy Storage and Sensors	<b>Keynote 7</b> <b>Speaker:</b> Dr. Sounak Roy, BITS Hyderabad <b>Topic:</b> Towards Net Zero: The Story of an Anthropogenic Carbon-Neutral Cycle
11:10AM -11:50AM	<b>Keynote 6</b> <b>Speaker:</b> Prof. P. S. Mukherjee, IISc Bangalore <b>Topic:</b> Functional Molecular Vessels	<b>Keynote 8</b> <b>Speaker:</b> Prof. Natarajan V, DRDO, Chennai <b>Topic:</b> Recent Trends in Energy Generation, Harvesting and Storage-A Survey
11:50AM – 12:25PM	<b>Invited 9</b> <b>Speaker:</b> Dr. Georges Mouchaham, ESCPI, Paris <b>Topic:</b> Ti <sub>12</sub> -MOFs as promising photocatalysts for H <sub>2</sub> production	<b>Invited 10</b> <b>Speaker:</b> Dr. Santosh K. Singh, SNU, Noida <b>Topic:</b> Advancing Sustainable Hydrogen Technologies with Electrocatalysis
12:30PM – 2:00PM	Lunch break & Poster Session	
	Session Chair:	

	Prof. Ethirajan S, Savitha University, Chennai	Dr. Sanjit Das, VIT Chennai
<b>2:00 PM – 2:35 PM</b>	<b>Invited 11</b> <b>Speaker:</b> Prof. Ajith C Herath, Rajarata University of Sri Lanka, Sri Lanka <b>Topic:</b> Graphene Oxide Polyaniline Supported Nano Zero Valent Iron (GO-PANI- NZVI) a Novel Composite for Aqueous Nitrate Removal	<b>Industry Lecture 1 (2:00 PM – 2:25 PM)</b> <b>Speaker:</b> Dr. Sankararao M, Nanosol Pvt Ltd, Hyderabad <b>Topic:</b> Hydrogen - Generation, Utilisation and Green Economy
<b>2:35 PM – 3.10 PM</b>	<b>Invited 12</b> <b>Speaker:</b> Dr. Nilanjan Dey, BITS Hyderabad <b>Topic:</b> Dynamic Responses of a Microenvironment-Sensitive Charge-Transfer Probe: Tailoring Ion Sensing Properties via Surfactant Co-Assembly	<b>Industry Lecture 2 (2:25 PM – 2:50 PM)</b> <b>Speaker:</b> Dr. Venkatesan A, Labindia Instruments Pvt. Ltd. Thane <b>Industry Lecture 3 (2:50 PM – 3:15 PM)</b> <b>Speaker:</b> LABKART
<b>3:15PM – 3:45PM</b>	-----Tea Break-----	
	Session Chair	
	Dr. Santosh K Singh, SNU, Noida	Dr. Nilanjan Dey, BITS, Hyderabad
<b>3:45PM - 4:20PM</b>	<b>Invited 13</b> <b>Speaker:</b> Dr. Amit K. Mondal, INST Mohali <b>Topic:</b> Spin Selective Electron Transport through Chiral Materials	<b>Invited 14</b> <b>Speaker:</b> Dr. Kiran Vankayala, BITS Goa <b>Topic:</b> Approaches for Energy-Efficient Green Hydrogen Production
<b>4:20PM - 4:30PM</b>	<b>Oral-11</b>	<b>Oral-16</b>
<b>4:30PM - 4.40PM</b>	<b>Oral-12</b>	<b>Oral-17</b>
<b>4:50PM - 5.00PM</b>	<b>Oral-13</b>	<b>Oral-18</b>
<b>5:00PM - 5.10PM</b>	<b>Oral-14</b>	<b>Oral-19</b>
<b>5:10PM - 5.20PM</b>	<b>Oral-15</b>	<b>Oral-20</b>

**DAY 3: 08 February 2025, Saturday**

	Session Chair:	
	Prof. Guillaume Maurin, ICGM, Montpellier	Dr. Samrat Ghosh, CLRI, Chennai
<b>9:00AM – 9:40AM</b>	<b>Keynote 9</b> <b>Speaker:</b> Prof. Rahul Banerjee, IISER Kolkata <b>Topic:</b> Reticular Chemistry and Porous Framework Materials	<b>Invited 15 (9.00 AM- 9.35 AM)</b> <b>Speaker:</b> Dr. E Varadarajan, DRDO Chennai <b>Topic:</b> An overview of Functional Materials processing technologies for energy and sustainable applications
<b>9:40AM – 10:20AM</b>	<b>Keynote 10</b> <b>Speaker:</b> Prof. R. Boomi Shankar, IISER Pune <b>Topic:</b> Organic and Hybrid Ferroelectrics for Piezoelectric Energy Harvesting Applications	<b>Invited 16 ((9.35 AM- 10.10 AM)</b> <b>Speaker:</b> Dr. Debdyuti Mukherjee, ARCI, Chennai <b>Topic:</b> Designing Next Generation Sustainable Energy Conversion and Storage Systems Using 2D Organic-Inorganic Layered Hybrid Catalysts and Highly Conducting Ionomer Membranes
<b>10:15AM-10:45AM</b>	-----Tea Break-----	
<b>10:45AM-11.20AM</b>	<b>Invited 17</b> <b>Speaker:</b> Dr. Bharati Debnath, TCG Crest, Kolkata <b>Topic:</b> Development of Cost-efficient, Selective Catalysts for Green Fuels Production	
<b>11:20AM-11:30AM</b>	<b>Oral 21</b>	
<b>11:30AM - 11:40AM</b>	<b>Oral 22</b>	
<b>11:40AM – 11.50AM</b>	<b>Oral 23</b>	
<b>11:50AM – 12.00PM</b>	<b>Oral 24</b>	
<b>12.00 PM-12.10PM</b>	<b>Oral 25</b>	
<b>12.10 PM-12.20PM</b>	<b>Oral 26</b>	
<b>12.20PM-12.30 PM</b>	<b>Oral 27</b>	
<b>12.30PM-2.00PM</b>	<b>Lunch</b>	

<b>2.00PM-3.00PM</b>	<b>Valedictory Function and Prize Distribution</b>	
<b>3.00PM-3.30PM</b>	High Tea	