



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



DAY 1: 30/10/2025			
<b>8:00 - 9:15 am</b>	<b>Registration</b>		<b>AB Block</b>
9:20 – 10:50 am	Inaugural session	Mr. Prasad Panicker Chairman, Nayara Energy limited	Mini Auditorium
10:50 – 11:10 am	High Tea		Mini Auditorium
<b>Date and Time</b>	<b>Category</b>	<b>Speaker</b>	<b>Topic</b>
<b>Session-1 11:15 – 1:05 pm</b>	<b>Chair: Prof. Lau Pau Show Moderator: Dr. Amit Aravind</b>		<b>Venue: Mini Auditorium</b>
11:15 – 11:50 am	Plenary lecture	Prof. Isaac Song-Jeng Huang <i>National Taiwan University of Science and Technology, Taiwan</i>	From lab to industry: Catalytic and economic breakthroughs in hydrogen storage from magnesium-based metal hydride
11:55 – 12:30 pm	Plenary lecture	Prof. Sandhya Babel <i>Thammasat University, Thailand</i>	Synergies in a coupled microbial fuel cell system for wastewater: Maximizing energy recovery and nitrogen removal
12:35 – 1:10 pm	Keynote lecture	Dr. Sreekumar K. <i>National Chemical Laboratory, Pune</i>	Hydrogen energy and CSIR- connecting deep science with technologies
1:10 – 2:10 pm	Lunch Break: Venue: AK Seminar Hall		
<b>Session-2 2:15- 4:05 pm</b>	<b>Chair: Dr. Kit Wayne Chew Moderator: Dr. Ramya Sankar M. S.</b>		<b>Venue: VB Seminar Hall</b>
2:15 - 2:50 pm	Plenary Lecture	Prof. Loke Po Shaw <i>Khalifa University, UAE</i>	Recent progress in Microalgae biorefinery
2:55 – 3:30 pm	Keynote lecture	Dr. Suverna Trivedi <i>Indian Institute of Technology, Kharagpur</i>	Hydrogen from Biomass: Designing durable catalyst for aqueous phase reforming
3:35 – 4:05 pm	Keynote lecture	Dr. Anjana P. A. <i>National Institute of Technology Warangal</i>	Catalysis pyrolysis reaction: A circular economy solution
4:05 – 4:15 pm	Tea Break		
<b>Session-3A 4:15 – 5:15 pm</b>	<b>Chair: Dr. Sreekumar K. Moderator: Dr. Vishnuprasad S</b>		<b>RB Seminar Hall</b>
4:15 – 4:25 pm	Oral Presentation	Dr. Sreelakshmi Rajeevan <i>Amal Jyothi College of Engineering (Autonomous), Kottayam</i>	Electrochemical Impact of Non-covalently Functionalized Graphene in a Binary Electrode with Acid-modified MWCNTs for Supercapacitors

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



4:30 – 4:40 pm	Oral Presentation	D. Ganga Shyamala <i>National Institute of Technology Warangal</i>	Synthesis and Structural Characterization of Double Perovskite Anode for Solid Oxide Fuel Cells
4:45 – 4:55 pm	Oral Presentation	Roopesh Michael <i>Maharajas College Ernakulam, India</i>	Microwave assisted synthesis and characterization of Mn, Ni and Mn-Ni metal organic frameworks
5:00 – 5:10 pm	Oral Presentation	Ajayraj <i>National Institute of Technology Warangal</i>	Optimizing Oxygen Ion Transport in Pyrochlore Structures: A Doping Strategy by DFT and Experimental Validation
<b>Session-3B Time: 4:15 – 5:40 pm</b>		<b>Chair: Prof. Suverna Trivedi Moderator: Dr. Rittin Abraham Kurien</b>	<b>Venue: VB Seminar Hall</b>
4:15 – 4:50 pm	Invited Lecture	Dr. Ravi Babu Valapa <i>CSIR Central Electrochemical Research Institute, Karaikudi</i>	Indigenized technology for carbon capture from direct air
4:55 – 5:10 pm	Oral Presentation	Arvind Kumar <i>National Institute of Technology Rourkela, India</i>	Unveiling the Synergistic Role of Vacant-Rich Carbon Nitride Homojunction Hydrogels in Photocatalytic Hydrogen Peroxide
5:15 – 5:25 pm	Oral presentation	Shamla N. <i>Mangalam College of Engineering, Kottayam, India</i>	Zero waste approach for synthesis, characterization, and optimization of bioethanol from nanocrystalline cellulose
5:35 – 5:45 pm	Oral Presentation	Angel Eby <i>TKM College of Engineering, Kollam</i>	Assessing the Viability of Regenerating Impregnated Activated Carbon for Sustainable Adsorption Applications
<b>Session-3C (ONLINE) Time: 4:20 – 5:20 pm</b>		<b>Chair: Dr. Arun Kumar Varanasi Moderator: Dr. Akhil T. Nair</b>	<b>Venue: MBA Theatre Class Room</b>
4:20 – 4:50 pm	Invited Lecture (online)	Dr. Immanuel Paul <i>Khalifa University, UAE</i>	Hierarchical fractal surface patterns for enhanced gypsum scaling resistance in membrane distillation: a computational fluid dynamics analysis
4:55 – 5:20 pm	Invited Lecture (online)	Prof. Sonil Nanda <i>Dalhousie University, Canada</i>	Transforming food waste into green hydrogen through catalytic hydrothermal gasification
4:30 to 6:20 pm	Poster Session-1: Venue: Mini Auditorium		
6:30 to 7:30 pm	Cultural Program: Venue: Mini Auditorium		
7:30 to 8:30 pm	Gala Dinner: Venue: AK Seminar Hall		

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



Day 02: 31.10.2025			
<b>Session-4</b>		<b>Chair: Prof. Sandhya Babel</b> <b>Moderator: Er. Mariya Binoy</b>	<b>Venue: VB Seminar Hall</b>
Date and Time	Category	Speaker	Topic
9:20 – 9:55 am	Plenary lecture	Prof. Dai-Viet N. Vo <i>Nguyen Tat Thanh University, Vietnam</i>	Catalytic reforming process on Ni and Co-based catalysts for sustainable hydrogen production and CO mitigation
10:00 – 10:35 am	Keynote lecture	Prof. Vinod M. Janardhanan <i>Indian Institute of Technology Hyderabad</i>	Electrochemistry for a sustainable energy future: opportunities and challenges
10:40 – 11:10 am	Keynote lecture	Prof. Dinesh Jagadeesan <i>Indian Institute of Technology Palakkad</i>	In pursuit of catalyst for low temperature ethylene oxidation
11:10 – 11:30 am	Tea		
<b>Session-5A</b> <b>Time: 11:30 – 12:55 pm</b>		<b>Chair: Prof. Vinod M. Janardhanan</b> <b>Moderator: Dr. Vishnuprasad S</b>	<b>Venue: VB Seminar Hall</b>
11:30 – 12:00 pm	Invited lecture	Dr. Sreekala M. S. <i>MG University, Kottayam</i>	Advanced sustainable polymer nanocomposites and their versatile applications
12:05 – 12:25 pm	Oral Presentation	Dr. Jinu Jacob George <i>Cochin University of Science and Technology, Kochi, Kerala</i>	Nanocellulose: From Waste Biomass to Technological Applications
12:30 – 12:40 pm	Oral Presentation	Nafih Koya V. M. <i>TKM Engineering College, Kollam, Kerala</i>	Automated PPE Detection Using Deep Learning for Enhanced Safety in Energy and Chemical Industries
12:45 – 12:55 pm	Oral Presentation	Anu A. M. <i>Maharajas College Ernakulam, Kerala</i>	Synergistic Carbon Quantum Dot–Transition Metal Oxide Nanocomposites as High-Performance Electrode Materials for Supercapacitors
<b>Session-5B</b> <b>Time: 11:30 – 12:55 pm</b>		<b>Chair: Prof. G. Madhu</b> <b>Moderator: Er. Aryamol K. S.</b>	<b>Venue: RB Seminar Hall</b>
11:30 – 11:55 pm	Oral Presentation	Prof. Thomas Kurien <i>Cochin University of Science and Technology, Kochi, Kerala</i>	Eco-friendly chemical recycling of PET bottles waste for the manufacture of rubber compounding additives
12:00 to 12:10 pm	Oral Presentation	Kim-Ngan N. Phan <i>Nguyen Tat Than University, Vietnam</i>	Carbon dioxide utilization via catalytic CO <sub>2</sub> methanation over Ni/KIT-6 catalyst
12:15 – 12:25 pm	Oral Presentation	Nithya S Varma <i>Saintgits College of Engineering (Autonomous), Kottayam</i>	Influence of Doping and Green Synthesis on the Photocatalytic Performance of NiFe <sub>2</sub> O <sub>4</sub> Nanoparticles: A Review

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



12:30 – 12:40 pm	Oral Presentation	Savitha K. U. <i>NSS Hindu College, Changanacherry, Kerala</i>	Green Synthesis of Carbon Nano-Onions via Flame Pyrolysis of Coconut and Sesame Oil: Structural and Electrochemical Evaluation
12:45 – 12:55 pm	Oral Presentation	Sumitha Tom <i>Catholicate College Pathanamthitta, Kerala</i>	Comparative analysis of Antioxidant properties of Green synthesized Urea-functionalized Carbon Dots (CDs) derived from <i>Luffa Cylindrica</i> Fiber as natural precursor
<b>Session-5c (ONLINE) Time: 11:30 – 12:55 pm</b>		<b>Chair: Dr. Rittin Abraham Kurien Moderator: Dr. Arun Kumar Varanasi</b>	<b>Venue: MBA Theatre Class Room</b>
11:30 – 12:00 pm	Invited Lecture	Prof. Chandra Sekar Tripathi <i>Banaras Hindu University Varanasi, India</i>	Ultrasound-Driven Hybrid Piezo catalysts for Emerging Pollutant Degradation
12:05 – 12:30 pm	Invited Lecture	Prof. Ashish Kapoor <i>Harcourt Butler Technical University, Kanpur, India</i>	Sustainable approaches for monitoring water contaminants using lab-on-a-chip technologies
12:35 – 1:00 pm	Keynote Lecture	Prof. Thomas J. Webster <i>Brown University, USA</i>	Energy storage and harvesting for implantable nano sensors: improving human health in over 40,000 humans and still counting
12:55 to 1:55 pm	Lunch Break: Venue: AK Seminar Hall		
<b>Session-6 Time: 2:00 – 3:55 pm</b>		<b>Chair: Prof. Dinesh Jagadeesan Moderator: Dr. S. Vishnuprasad</b>	<b>Venue: VB Seminar Hall</b>
2:00 – 2:30 pm	Keynote lecture	Prof. Nitin Muralidharan <i>Indian Institute of Technology madras, Tamil Nadu</i>	Hydrogen from biomass: The role of durable catalysts in aqueous phase reforming
2:35 – 3:05 pm	Keynote lecture	Dr. Wen Yi Chia <i>Nanyang Technological University, Singapore</i>	Waste to value: innovative strategies for sustainable utilization and resource recovery in the circular economy
3:05 – 3:35 pm	Keynote lecture	Dr. Kit Wayne Chew <i>United Arab Emirates University, UAE</i>	Microalgae biorefinery concepts: multiphase extraction using liquid triphasic system
3:35 to 3:55 pm	Tea		
<b>Session: 7A Time: 4:00 – 5:25 pm</b>		<b>Chair: Sandhya Babel Moderator: Dr. Ramya Sankar M. S.</b>	<b>Venue: VB Seminar Hall</b>

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



4:00 – 4:35 pm	Invited Presentation	Dr. Avjith Ghosh <i>IICChE, Kolkata</i>	Rice husk - derived biochar as a sustainable electrode material for Li-ion battery applications
4:40 – 4:55 pm	Oral Presentation	Jincy Jose <i>Bharathidasan University, Tiruchirappalli, Tamil Nadu, India</i>	Novel carbon dots from <i>w. Coccinea</i> as potential green corrosion inhibitor for mild steel in 1 M HCl solution
5:00 – 5:10 pm	Oral Presentation	Taniya Rose Abraham <i>Mahatma Gandhi University, Kottayam</i>	Theoretical and Kinetic Modeling of Carbon Valorization for Hydrogen Production and Environmental Remediation
5:15 – 5:25 pm	Oral Presentation	Gayathri Gopan <i>SRM Institute of Science and Technology Chennai, Tamil Nadu</i>	Process Integration of Fluidized Bed Segregation and Oxidative Leaching for Efficient Metal Recovery from Printed Circuit Boards
<b>Session-7B Time: 4:05 – 5:30 pm</b>		<b>Chair: Dr. Madhu G. Moderator: Dr. Vishnuprasad S</b>	<b>Venue: RB Seminar Hall</b>
4:05 – 4:15 pm	Oral Presentation	Abhiram Rathnakara <i>TKM College of Engineering, Kollam</i>	Automated PPE deduction using deep learning for enhanced safety in Energy and Chemical Industries
4:20 – 4:30 pm	Oral Presentation	Sailesh K S, <i>Saintgits College of Engineering, Kottayam</i>	Synthesis and Performance Evaluation of Coconut Oil Based Biodiesel Blended with Diesel Using Ce-Zr Hybrid Nanoparticles
4:35 – 4:45 pm	Oral Presentation	Manisha Yadav, <i>DIAT Pune</i>	Microbial Transformation of Plastic Pollution for Environmental Remediation
4:50 – 5:00 pm	Oral Presentation	Neha Saroa, <i>DIAT Pune</i>	Integrating Renewable Polymers and Natural Additives in Hot Melt Adhesive Systems
5:05 – 5:15 pm	Oral Presentation	Dr. Rittin Abraham Kurien <i>Saintgits College of Engineering, Kottayam</i>	Polymer Film as emerging paradigms towards environmental friendly and sustainable application
<b>Session-7C (ONLINE) Time: 2:00 – 5:30 pm</b>		<b>Chair: Dr. Arun Kumar Varanasi, Dr. Akhil T. Nair</b>	<b>Venue: MBA Theatre Class room</b>
2:00 – 2:25 pm	Invited Lecture	Dr. Balasubramanian <i>DIAT Pune</i>	Biochar for environmental remediation: advancing waste valorization through circular economy practices
2:30 – 3:00 pm	Invited Lecture	Dr. R. Venugopal IPESS <i>Joint chief controller explosives, Senior advisor on energy transitions</i>	Safety and regulatory aspects of green hydrogen
3:05 – 3:15 pm	Oral Presentation	Sujy Mary Zachariah <i>Mahatma Gandhi University, Kottayam</i>	Janus structure inspired double layered aerogels: structural, thermal, and EMI shielding properties

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



3:20 – 3:30 pm	Oral Presentation	Shankar <i>Vel Tech High Tech Dr Rangarajan Dr Sakunthala Engineering College, Chennai, Tamil Nadu</i>	Development of a Solid-State Fuel Cell Using Banana Ash-Based Electrodes
3:35 – 3:45 pm	Oral Presentation	Ashwin M, <i>IIT Hyderabad</i>	OER studies on IrO <sub>2</sub> electrocatalyst in H <sub>3</sub> PO <sub>4</sub> containing electrolytes
3:50 – 4:00 pm	Oral Presentation	Aishwarya K. N. <i>IIT Hyderabad, India</i>	Understanding the synergistic effect of IR-ReO <sub>x</sub> -SiO <sub>2</sub> Catalyst on the hydrodeoxygenation of biomass-derived 6-amyyl-alpha-pyrone to n-decane
4:05 – 4:15 pm	Oral Presentation	Girija, Sakhtipriya R <i>Vel Tech High Tech Dr Rangarajan Dr Sakunthala Engineering College, Chennai, Tamil Nadu</i>	Development of Spirulina-Derived Carbon Quantum Dots for Photocatalytic Remediation of Dairy Wastewater
4:20 – 4:30 pm	Oral Presentation	Himangi Neve <i>Dr. Vishwanath Karad MIT World Peace University, Pune, Maharashtra</i>	The Current State and Future of Energy Harvesting for Biomedical Implants and Sensors
4:35 – 4:45 pm	Oral Presentation	Yash Verma <i>Harcourt Butler Technical University Kanpur, Uttar Pradesh</i>	Biopolymer nanocomposites from agricultural and forest waste for smart food packaging
4:50 - 5:00 pm	Oral Presentation	Chandrika Sengar <i>Harcourt Butler Technical University Kanpur, Uttar Pradesh</i>	Facilitation of Cellulose Nanofiber Synthesis Using Catalyst and Its Future Applications
5:05 – 5:15 pm	Oral Presentation	Agraj Pratap Singh, <i>Harcourt Butler Technical University Kanpur, Uttar Pradesh</i>	Study the performance of a fabric-based microfluidic fuel cell using a non-precious metal catalyst
5:20 – 5:30 pm	Oral Presentation	Ambigadevi J. <i>Rajalekshmi Engineering College, Chennai, Tamil Nadu</i>	Facile synthesis of Fe <sub>2</sub> O <sub>3</sub> /g-C <sub>3</sub> N <sub>4</sub> electrodes for enhanced supercapacitor applications
5:30 – 5:40 pm	Oral Presentation	Pravan Gupta <i>Harcourt Butler Technical University Kanpur, Uttar Pradesh</i>	Utilization pathways of Li <sub>2</sub> O <sub>2</sub> and other discharge products in Li-air batteries

Day-03 :01 <sup>st</sup> November 2025			
Date and Time	Category	Speaker	Topic
Session-8	Chair: Dr. Suverna Trivedi		Venue: VB Seminar Hall

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



	<b>Moderator: Er. Aryamol K. S.</b>		
9:15 – 9:45 am	Keynote lecture	Chinta Sankar Rao <i>National Institute of Technology Suratkal, Karnataka</i>	Machine learning driven prediction of hydrogen yield from microwave assisted pyrolysis of Lignocellulose biomass
9:50 – 10:35 am	Plenary lecture	Prof. Ajaygosh Ayyapanpillai <i>SRM Institute of Science and Technology, Chennai, Tamil Nadu</i>	The chemistry of energy saving smart windows
10:35 – 11:05 am	Keynote lecture	Mahendra Chinthala <i>National Institute of Technology Rourkela, Odisha</i>	MOFs-based photocatalysts for sustainable chemical production
11:05 – 11:15 am	Tea		
<b>Session-9A 11:15 – 12:30 pm</b>	<b>Chair: Prof. Dai-Viet N Vo Moderator: Er. Priwiya Peter</b>		<b>Venue: RB Seminar Hall</b>
11:15 – 11:35 am	Invited Lecture	Dr. Jayachandran K <i>Fertilizers and Chemicals Travancore, Kochi, Kerala</i>	Hydrogen energy: Opportunities and challenges
11:35 – 11:45 am	Oral Presentation	Dr. Surya Nikhil Kappagantu <i>Pioneer Aluminum Industries Ltd. Andra Pradesh</i>	Sustainable lithium recovery from spent LiPo batteries using low impact leaching and biomass-based adsorbents
11:50-12:00 pm	Oral Presentation	Fathima C. S. <i>Maharajas College, Ernakulam</i>	Green synthesized carbon quantum dots as a colorimetric probe for sensitive and selective folic acid detection.
12:05 – 12:15 pm	Oral Presentation	Dr. Devi Chandra R, <i>University of Kerala, Thiruvananthapuram</i>	Zinc Oxide nanoparticles for photosensing applications
12:20 – 12:30 pm	Oral Presentation	Arya Unnikrishnan <i>Mahatma Gandhi University, Kottayam, Kerala</i>	Upcycling LiCoO <sub>2</sub> from Spent Lithium-Ion Batteries into Co <sub>3</sub> O <sub>4</sub> Nano catalysts for Sustainable Hydrogen Energy Production.
<b>Session-9B Time: 11:15 – 12:30 pm</b>	<b>Chair: Sandhya Babel Moderator: Er. Aryamol K. S.</b>		<b>Venue: VB Seminar Hall</b>
11:15 – 11:45 pm	Invited Lecture	Prof. Prasanth R. <i>CUSAT Kochi, Kerala</i>	Smart textiles for flexible and stretchable energy harvesting and storage applications
11:50-12:00 pm	Oral Presentation	Rishad Baig E <i>CSIR-NIIST, Thiruvananthapuram, Kerala</i>	Electrode Materials for Supercapacitors: Sustainable Development Opportunities

Programme schedule: Chemscape 2025



**INTERNATIONAL CONFERENCE ON CHEMICAL ENGINEERING SCIENCES:  
ADVANCES IN ENERGY HARVESTING AND STORAGE : CHEMSCAPE 2025**



12:05 – 12:15 pm	Oral Presentation	Neha Nasrin P <i>Mahatma Gandhi University, Kottayam, Kerala</i>	Bridging Power and Energy: Magneto-hydrodynamic Enhancement of NiS <sub>2</sub> -Based Supercapacitors
12:20 – 12:30 pm	Oral Presentation	Nishant Vinod Patil <i>National Institute of Technology Suratkal, Karnataka</i>	Physics Informed Neural Network Model for Prediction of Weight Loss for Metformin Pharmaceutical Waste
<b>Session-9C (ONLINE) Time: 11:00 – 12:20 pm</b>	<b>Chair: Dr. Arunkumar Varanasi Moderator Dr. Akhil T. Nair</b>		<b>Venue: MBA Theatre Class room</b>
11:20 – 11:30 am	Oral presentation	Amit Tiwari <i>NIT Rourkela</i>	Comprehensive analysis of co-pyrolysis of tea waste and coal: kinetic insights and product distribution
11:20 – 11:30 am	Oral presentation	Harini, Devimari B <i>Veltech-Hi tech Dr. Ranrajana and Dr. Shakunthala engineering College, Chennai</i>	Spirulina derived from carbon quantum dots for photo catalytic remediation
11:35 – 11:45 am	Oral Presentation	Ashish Chopade <i>VIT Pune, Maharashtra</i>	Wastewater Treatment by Advanced Oxidation Process (Hydrodynamic Cavitation)
11:50-12:00 pm	Oral Presentation	Shreya Srivastava <i>Harcourt Butler Technical University, Kanpur, Uttar Pradesh</i>	Functionalized Hydrogels for Wastewater Treatment: Recent Progress, Challenges and Future Prospects
12:05 – 12:15 pm	Oral Presentation	Unnayan Srivastava <i>Harcourt Butler Technical University, Kanpur, Uttar Pradesh</i>	Framework for Life Cycle Assessment in Chemical Systems
12:15 – 12:25 pm	Oral Presentation	Vinuthna Bezawada, Avinash Yedelli <i>University College of Technology, Osmania University ,Hyderabad Telangana</i>	Integrating circular economy principles in waste to energy systems: challenges and opportunities for sustainable development
12:35 -1:20 pm	Valedictory Session Venue: Mini Auditorium		
1:20 pm – 2:10 pm	Lunch Venue: AK Seminar Hall		
2:20 pm	Trip to Kumarakom		

Programme schedule: Chemscape 2025