



Tentative Program



## International Conference on Thin Films and Nanotechnology: Knowledge, Leadership & Commercialization (ICTN-KLC-2025)

11<sup>th</sup>-13<sup>th</sup> December 2025

### Conference Patron

Prof. Rangan Banerjee  
Director

Indian Institute of Technology Delhi

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Indian Institute of Technology Delhi

**Day 1 (December 11<sup>th</sup>)**

**Registration: 9:00 AM - 9:30 AM**

**Inaugural Session and Welcome to the Guests  
9:30 AM – 10:30 AM**

**High Tea (10:35 AM - 11:00 AM)**

**Plenary Speaker 1: 11:00 AM - 11:45 AM**

**Session Chairs: Prof. Rajendra Singh, Associate Dean, R&D and Prof. Pankaj Srivastava, IIT Delhi**

**Prof. Dr. Sanjay Mathur, Director, Institute of Inorganic Chemistry, University of Cologne, Germany**

**Title: Catalysts of Change: Advanced Nanomaterials Steering Health and Energy Transition**

<b>Session / Time</b>	<b>Energy Generation</b>	<b>Energy Storage/Interdisciplinary Science and Engineering</b>
<b>Invited Talks: Session 1</b>	<b>Session Chair:</b> <b>Prof. D.K. Pandya, Ex. HoD Physics and Adjunct Professor, IIT Jammu</b>	<b>Session Chair:</b> <b>Prof. Vipin Kumar, IIT Delhi</b>
<b>T01- 11:45 AM - 12:05 PM</b>	<b>Prof. Sanjay K. Srivastava, CSIR NPL</b> <b>Title: Efficient Organic Semiconductor-Silicon Hybrid Solar Cells Employing Effective Light Trapping Schemes</b>	<b>Prof. Hemant Kumar, IIT Bhubaneswar</b> <b>Title : Enhancing MXene electrochemistry through spatial control of O and F termination distributions</b>
<b>T02- 12:05 PM - 12:25 PM</b>	<b>Prof. Jatin Kumar Rath, IIT Madras</b> <b>Title: Evolution of PDS and FTPS techniques to probe the functioning of solar cells</b>	<b>Prof. Prasanth Raghavan, Cochin University of Science and Technology (CUSAT)</b> <b>Title: Smart Textiles for Flexible and Stretchable Energy Harvesting and Storage Applications</b>
<b>T03- 12:25 PM - 12:45 PM</b>	<b>Prof. Vamsi K. Komarala, IIT Delhi</b> <b>Title: Fabrication and Characterization of Hetero-Junction Solar Cells for High Efficiency</b>	<b>Prof. Bhanu Nandan, IIT Delhi</b> <b>Title: Functionalized Textile Based Electrode Materials for Lithium Sulfur Batteries</b>
<b>T04- 12:45 PM - 01:05 PM</b>	<b>Prof. Oommen K. Varghese, University of Houston, USA</b> <b>Title: Revealing the Novel Properties of Low</b>	<b>Prof. Eswaraiah Varlla, SRM Institute of Science and Technology, Kattankulathur Campus, Tamil Nadu</b> <b>Title: Liquid-Exfoliated Two-Dimensional Nanosheets: Energy</b>

	<b>Dimensional Semiconductors via In Situ Studies and Numerical Simulations</b>	<b>Efficient Approaches and Self-assembly Processes</b>
<b>Lunch (1:05 PM – 2:00 PM)</b>		
<b>Invited Talks: Session 2</b>	<b>Session Chair:</b> <b>Prof. Ashish Kulkarni, IIT Tirupati</b>	<b>Session Chair:</b> <b>Prof. Hemant Kumar, IIT Bhubaneswar</b>
<b>T05- 02:00 PM - 02:20 PM</b>	<b>Prof. Pabitra K. Nayak, TIFR Hyderabad</b> <b>Title: Doping of soft semiconductors for stable and efficient optoelectronics</b>	<b>Prof. Arihant Bhandari, IIT Delhi</b> <b>Title: Simulations of few-layer graphene-based electrodes for electrochemical energy storage.</b>
<b>T06- 02:20 PM - 02:40 PM</b>	<b>Dr. Suraj Soman, CSIR-NIIST Thiruvananthapuram</b> <b>Title : From Lightbulbs to Lifelines: Powering the Future with Indoor Light</b>	<b>Prof. Deepak Kumar, IIT Delhi</b> <b>Title: Co-utilization strategy-based nano-composite Gr-Si anode for Li-Ion battery</b>
<b>S01- 02:40 PM - 02:50 PM</b>	<b>Dr. Telugu Bhim Raju, Kyushu University Japan</b>	<b>Mr. Shubham Mural, NSUT</b>
<b>S02- 02:50 PM - 03:00 PM</b>	<b>Dr. Dinesh Kumar, IIT Madras</b>	<b>Ms. Gazal Gupta, IIT Delhi</b>
<b>S03- 03:00 PM - 03:10 PM</b>	<b>Mrs. Ankita Sharma, SNU Delhi</b>	<b>Mr. M Humam Zaim Faruqi, IIT Delhi</b>
<b>S04- 03:10 PM - 03:20 PM</b>	<b>Mr. Rajesh Maurya, IIT Madras</b>	<b>Mr. Jasil T K, NITK Surathkal</b>
<b>S05- 03:20 PM - 03:30 PM</b>	<b>Impulse Technology (Industry)</b>	<b>Ms. Piyali Biswas, IIT Patna</b>
<b>3:30 PM - 4:30 PM:</b>		<b>Poster Evaluation</b>
<b>Tea/Coffee (4:00 PM - 4:30 PM)</b>		
<b>Plenary Speaker 2: 4:30 PM - 5:30 PM</b>		
<b>Session Chair: Prof. Sanjay Mathur, Director, Institute of Inorganic Chemistry, University of Cologne, Germany</b>		
<b>Prof. V. Ramgopal Rao, Fellow of IEEE, TWAS, INAE, IASc, INSA, NASI</b>		
<b>Group Vice-Chancellor for the Birla Institute of Technology &amp; Science (BITS) Pilani</b>		
<b>Title: From Atoms to Applications: Translating Nanoscience into Real-World Innovation</b>		

**Day 2 (December 12<sup>th</sup>)**

**Plenary Speaker 3: 09:30 AM - 10:15 AM**

**Session Chair: Prof. Gyu-Min Kim, Hankyong National University, Anseong, Republic of Korea**

**Prof. Shyam Sudhir Pandey, Graduate School of Life Science and Systems Engineering Department of Biological Functions Engineering, Kyushu Institute of Technology, Japan**

**Title: Facile Fabrication of Large Area Oriented Thin films and their 2D-Positional Mapping for Organic Electronic Devices**

**Tea/Coffee (10:15 AM - 10:30 AM)**

Session / Time	Energy Generation	Energy Storage/Interdisciplinary Science and Engineering
<b>Invited Talks: Session 3</b>	<b>Session Chair: Prof. Gyu-Min Kim, Hankyong National University, Anseong, Republic of Korea</b>	<b>Session Chair: Prof. Deepak Kumar, IIT Delhi</b>
<b>T07- 10:30 AM - 10:50 AM</b>	Dr. Bhumika Choudhary, University of Turku, Finland  <b>Title: Structurally Tunable Perovskite for Stable Thin film Optoelectronics</b>	Prof. Vanchiappan Aravindan, IISER, Tirupati  <b>Title: Materials &amp; coating for batteries, super-capacitors and fuel cells</b>
<b>T08- 10:50 AM - 11:10 AM</b>	Dr. Rashi Kedia, Amity University, Noida, Uttar Pradesh  <b>Title: Solvent-Free Deposition of Copper(I) Thiocyanate Thin Film: A Sustainable Approach for the Hole Transport Layer in Perovskite Solar Cells</b>	Prof. Abhishek Sarkar, IIT Delhi  <b>Title: High Entropy Oxides: Opportunities and Challenges</b>
<b>T09- 11:10 AM - 11:30 AM</b>	Dr. Ashish Kulkarni, IIT Tirupati  <b>Title: Insulating Metal Oxide and Self-Assembled Monolayer Interface for Efficient Perovskite Solar Cells</b>	Prof. Raju Kumar Gupta, IIT Kanpur  <b>Title: NASICON-Based Electrolytes for Solid-State Sodium-Ion Batteries</b>
<b>T10- 11:30 AM - 11:50 AM</b>	Dr. Saurabh Kumar Pandey, IIT Patna  <b>Title: Numerical Simulation of Bismuth-based highly efficient eco-friendly Perovskite solar cell</b>	
<b>S6- 11:50 AM - 12:00 PM</b>	Dr. N. Sivakumar, IIT Madras	Mr. Ankit Kumar Deval, IIT Roorkee

<b>S7- 12:00 PM - 12:10 PM</b>	<b>Mr. Snehangshu Mishra, IIT Kharagpur</b>	<b>Ms. Bhavani Sankaran, SRMIST Tamilnadu</b>
<b>S8- 12:10 PM - 12:20 PM</b>	<b>Mr. Milan Kumar Mandal, IIT Kharagpur</b>	<b>Ms. Toiba Manzoor, NSUT Delhi</b>
<b>S9- 12:20 PM - 12:30 PM</b>	<b>Mr. Nilesh, IIT Madras</b>	<b>Dr. Mahesh Chandra, IIT Delhi</b>
<b>12:30 PM - 1:00 PM</b>		
<b>Networking</b>		
<b>Lunch (01:00 PM - 02:00 PM)</b>		
<b>Special Talk 1: 02:00 PM - 02:45 PM</b>		
<b>Session Chair: Prof. Raju Kumar Gupta, IIT Kanpur</b>		
<b>Prof. Ramakrishna Ramanath Sonde, BITS Pilani Goa Campus</b>		
<b>Title: Energy transition and net zero pathway for India: Molecular Insights to Industrial Impact</b>		
<b>Invited Talks: Session 4</b>	<b>Session Chair:</b> <b>Dr. Bhumika Choudhary, University of Turku, Finland</b>	<b>Session Chair:</b> <b>Prof. Manika Khanuja, Jamia Millia Islamia, New Delhi</b>
<b>T11- 02:45 PM - 03:05 PM</b>	<b>Mr. Arup Dhar, NISE, Gurugram</b> <b>Title: Accurate translation of outdoor IV Measurements to STC for Photovoltaic Modules across Diverse Technologies</b>	<b>Prof. Somnath Chandra Roy, IIT Madras</b> <b>Title: An Exciting World of One-dimensional Metal Oxide Nano-and Hetero-structures</b>
<b>T12- 03:05 PM - 03:25 PM</b>	<b>Mr. Awatans Tripathi, GIZ India, New Delhi</b> <b>Title: Improving the pre-conditions of BIPV in India</b>	<b>Prof. Shree Prakash Tiwari, IIT Jodhpur</b> <b>Title: Flexible Electronic Devices for Smart Sustainable Systems</b>
<b>S11-03:25 PM - 03:35 PM</b>	<b>Networking</b>	<b>Networking</b>
<b>I1- 03:35 PM - 03:55 PM</b>	<b>RENEW</b>	<b>RENEW</b>
<b>I2- 03:55 PM - 04:15 PM</b>	<b>Bry Air</b>	<b>Bry Air</b>
<b>Tea/Coffee (4:15 PM - 4:30 PM)</b>		
<b>04:30 PM - 05:30 PM:</b>	<b>Panel Discussion</b>	

		<b>Title: Energy Transition in India: Challenges and Opportunities Towards Sustainable Energy Goals</b>
<b>05:30 PM - 06:45 PM:</b>		<b>Poster Evaluation</b>
<b>Gala Dinner 7:00 PM Onwards (Venue: ESSEX Banquet, <a href="https://maps.app.goo.gl/NJYpWnWb47CZmStm6">https://maps.app.goo.gl/NJYpWnWb47CZmStm6</a>)</b>		

**Day 3 (December 13<sup>th</sup>)**

Energy Generation	Energy Storage/Interdisciplinary Science and Engineering	KLC Distinguished Lecture Award Ceremony
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<b>Special Talk 2: 09:30 AM - 10:15 AM :</b> <b>Session Chair: Prof. Trilok Singh, IIT Delhi</b>		<b>Session Chair Prof. Pawan K. Kulriya, JNU</b>	<b>9:00-9:30 AM</b>	<b>Award Ceremony</b>
<b>Prof. GYU MIN KIM, Hankyong National University, Anseong, Republic of Korea</b>	T13- 09:30 - 09:50 AM	<b>Prof. Manika Khanuja, Jamia Millia Islamia, New Delhi</b> <b>Title: Machine Learning-Enabled Acceleration of Catalytic Reaction Pathways and Sensing Performance in 2D Nanomaterials</b>		
<b>Title: Ambient-Tolerant Mechanochemical Powder Strategy combined with Alkali-Metal-Integrated HTLs for Stable, Solvent-Minimal Perovskite Devices</b>	S12- 09:50 - 10:00 AM	<b>Mr. Vineeth S K, IIT Delhi</b>		<b>KLC Distinguished Awardee talk</b>
	S13- 10:00 - 10:10 AM	<b>Mr. Bheem Kumar, JNU Delhi</b>		
	S14- 10:10 - 10:20 AM	<b>Dr. Rajesh Kumar Jha, ICFAI Hyderabad</b>		<b>Closing Remarks</b>
<b>T13- 10:15- 10:35 AM</b>	<b>Prof. Upendra Pandey, Shiv Nadar Institution of</b>	<b>S15- 10:20 - 10:30 AM</b>	<b>Mr. Shubhang Srivastava, IIT Madras</b>	

	<b>Eminence</b>  <b>Title:</b> Indenofluorene Dimer as an Efficient Interlayer for High-Performance Perovskite Solar Cells				
		S16- 10:30 - 10:40 AM	Mr. Ashwin, IIT Delhi		
<b>Tea/Coffee (10:45 AM - 11:00 AM)</b>					
<b>Invited talks</b>	<b>Session Chair:</b> Prof. Upendra Pandey, SNU Noida		<b>Session Chair</b> Prof. Rajendra K Dhaka, IIT Delhi		<b>Session Chair</b> Prof. Suresh C. Sharma, DTU, Delhi
T14- 11:00- 11:20 AM	Prof. Pankaj Yadav, Pandit Deendayal University, Gujarat  Title : Automated EIS Analysis of Metal Halide Perovskite Single Crystals Using Machine Learning for Activation Energy Prediction	T14- 11:00 - 11:20 AM	Prof. Ankur Goswami, IIT Delhi  Title: Tungsten doped VO <sub>2</sub> thin film based resistive micro-oscillators for the application in neuromorphic systems	T1- 11:00 AM - 11:20 AM	Prof. Hemant Sagar, IIT Roorkee  Title: Advancing Toward 2070 Net-Zero: Hydropower Potential and Cavitation–Silt Problems Across Scales
T15- 11:20 AM - 11:40 AM	Mr. Dileep Tiwari, Executive Renewable Energy, Gujarat  Title: Unleashing Renewable Energy Opportunities: Policies, Strategies for Emerging Challenges, and the Path to Sustainable	T15- 11:20 - 11:40 AM	Prof. Rishi Sharma, BIT Mesra  Title: Cold Plasma Processing for Surface Engineering		

	<b>Investment in Gujarat</b>				
<b>S14- 11:40 AM - 11:50 AM</b>	Mr. Nitin Kumar Bansal, IIT Delhi	<b>S17- 11:40 AM - 11:50 AM</b>	Dr. Daljit Kaur, DAV University	<b>S12- 11:20 AM - 11:30 AM</b>	Dr. Sanjay Baghel, Dr. A.P.J. Abdul Kalam Technical University
<b>S15- 11:50 AM - 12:00 PM</b>	Mr. Siddhant Singh, IISc Bangalore	<b>S18- 11:50 AM - 12:00 PM</b>	Dr. Charu Lata Dube, CUG	<b>S13- 11:30 AM - 11:40 AM</b>	Mr. Aloka Ranjan Sahoo, IGCAR
<b>S16- 12:00 PM - 12:10 PM</b>	Mr. Vipin C K, CSIR-NIIST Kerala	<b>S19- 12:00 PM - 12:10 PM</b>	Ms. Paulomi Singh, IIT Delhi	<b>S14- 11:40 AM - 11:50 AM</b>	Mr. Sujoy Paul, IIT Delhi
<b>S17- 12:10 PM - 12:20 PM</b>	Mr. Manoj Kumar, VIT AP University	<b>S20- 12:10 PM - 12:20 PM</b>	Ms. Fatima Zehra, JMI	<b>S15- 11:50 AM - 12:00 PM</b>	Mr. Vudit Pandey, AMU
<b>S18- 12:20 PM - 12:30 PM</b>	Ms. Neha Chakraborty, BIT Mesra, Ranchi	<b>S21- 12:20 PM - 12:30 PM</b>	Ms. Bhawna SU, Gurugram	<b>S16- 12:00 PM - 12:10 PM</b>	Mr. Dishant Sharma, IIT Delhi
<b>S19- 12:30 PM - 12:40 PM</b>	Networking	<b>S22- 12:30 PM - 12:40 PM</b>	Ms. Barsha Priyadarshini, CSIR IMM	<b>S17- 12:10 PM - 12:20 PM</b>	Mr. Pallav Sahu, IIT Delhi
<b>S20- 12:40 PM - 1:00 PM</b>	Networking	<b>S23- 12:40 PM - 01:00 PM</b>	Networking	<b>S18- 12:20 PM - 12:30 PM</b>	Dr. Sonu, IIT Delhi

Lunch (01:00 PM – 02:00 PM)

Plenary Speaker 4: 02:00 PM - 02:45 PM

Session Chair: Prof. D.K. Pandya, Ex. HoD Physics and Adjunct Professor, I.I.T. Jammu

Prof. Bhim Singh, ANRF National Science Chair & Emeritus Professor, Department of Electrical Engineering, IIT Delhi

Title: Solar Photovoltaic Energy-A Sustainable Solution for Humanity

<b>Invited Talks:</b>	<b>Session Chair</b> Prof. Pankaj Yadav, PDU Gujrat		<b>Session Chair</b> Prof. Vipin Kumar, IIT Delhi	<b>Invited Talks:</b>	<b>Session Chair</b> Prof. Manika Khanuja, Jamia Millia Islamia, New Delhi
<b>T16- 02:45 PM - 03:05 PM</b>	Prof. Dibyajyoti Ghosh, IIT Delhi	<b>T16- 02:45 - 03:05 PM</b>	Prof. Rajendra Singh Dhaka, IIT Delhi	<b>T2- 02:45 PM - 03:05 PM</b>	Prof. Suresh C. Sharma, DTU, Delhi

	<b>Title: Designing Layered Halide Perovskites for Optoelectronics: Insights from ab initio and data-driven modeling</b>		<b>Title: Sodium-ion Batteries for Sustainable Future and Viksit Bharat</b>		<b>Title: Plasma-Assisted Vertically Aligned Semiconducting 2D Graphene Field Effect Transistor Based Biosensor for Detection of Various Cancerous Bio-molecules</b>
		T17- 03:05 - 03:25 PM	Prof. Jai Singh, Guru Ghasidas Vishwavidyalaya, Bilaspur  <b>Title: MoS<sub>2</sub> monolayer, bi-layer thin films fabricated by RF sputtering and pulsed laser deposited ZnO thin-films/nanostructures</b>		
		T18- 03:25 - 03:45 PM	Prof. Ulganathan Mani Amrita Vishwa Vidyapeetham  <b>Title: Strategies for Enhancing Zinc-Iron Hybrid Redox Flow Battery</b>		
S21- 03:05 PM - 03:15 PM	Ms. Shilshiya B. G, NIT Tiruchirappalli			S27- 03:05 PM - 03:15 PM	Mr. Sivaramasudhan S, ISRO Bengaluru
S22- 03:15 PM - 03:25 PM	Mr. Ronaldo Roy, NIT Tiruchirappalli			S28- 03:15 PM - 03:25 PM	Prof. Abhinav Anand, VIT
<b>Tea/Coffee (3:45 PM - 4:00 PM)</b>					
<b>04:00 PM – 05:30 PM: Valedictory Function</b>					
<b>Closing Remarks</b>					