



Tentative Program



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

11th-13th December 2025

Conference Patron

Prof. Rangan Banerjee
Director

Indian Institute of Technology Delhi

Prof. Trilok Singh
Conference Chair

Department of Energy Science and Engineering
Indian Institute of Technology Delhi
triloksingh@dese.iitd.ac.in

Prof. Vipin Kumar
Conference Co-Chair

Department of Energy Science and Engineering
Indian Institute of Technology Delhi
vkumar@dese.iitd.ac.in

Prof. Rahul Goyal
Conference Secretary

Department of Energy Science and Engineering
Indian Institute of Technology Delhi
rahulgoyal@dese.iitd.ac.in

Day 1 (December 11th)**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**

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

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

Day 2 (December 12 th)		
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
Invited Talks: Session 3	Session Chair: Prof. Gyu-Min Kim, Hankyong National University, Anseong, Republic of Korea	Session Chair: Prof. Deepak Kumar, IIT Delhi
T07- 10:30 AM - 10:50 AM	Dr. Bhumika Choudhary, University of Turku, Finland Title: Structurally Tunable Perovskite for Stable Thin film Optoelectronics	Prof. Vanchiappan Aravindan, IISER, Tirupati Title: Materials & coating for batteries, super-capacitors and fuel cells
T08- 10:50 AM - 11:10 AM	Dr. Rashi Kedia, Amity University, Noida, Uttar Pradesh Title: Solvent-Free Deposition of Copper(I) Thiocyanate Thin Film: A Sustainable Approach for the Hole Transport Layer in Perovskite Solar Cells	Prof. Abhishek Sarkar, IIT Delhi Title: High Entropy Oxides: Opportunities and Challenges
T09- 11:10 AM - 11:30 AM	Dr. Ashish Kulkarni, IIT Tirupati Title: Insulating Metal Oxide and Self-Assembled Monolayer Interface for Efficient Perovskite Solar Cells	Prof. Raju Kumar Gupta, IIT Kanpur Title: NASICON-Based Electrolytes for Solid-State Sodium-Ion Batteries
T10- 11:30 AM - 11:50 AM	Dr. Saurabh Kumar Pandey, IIT Patna Title: Numerical Simulation of Bismuth-based highly efficient eco-friendly Perovskite solar cell	
S6- 11:50 AM - 12:00 PM	Dr. N. Sivakumar, IIT Madras	Mr. Ankit Kumar Deval, IIT Roorkee

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

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

Day 3 (December 13th)

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

	Eminence Title: Indenofluorene Dimer as an Efficient Interlayer for High-Performance Perovskite Solar Cells				
		S16- 10:30 - 10:40 AM	Mr. Ashwin, IIT Delhi		
Tea/Coffee (10:45 AM - 11:00 AM)					
Invited talks	Session Chair: Prof. Upendra Pandey, SNU Noida		Session Chair Prof. Rajendra K Dhaka, IIT Delhi		Session Chair 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 ₂ 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		

	Investment in Gujarat				
S14- 11:40 AM - 11:50 AM	Mr. Nitin Kumar Bansal, IIT Delhi	S17- 11:40 AM - 11:50 AM	Dr. Daljit Kaur, DAV University	S12- 11:20 AM - 11:30 AM	Dr. Sanjay Baghel, Dr. A.P.J. Abdul Kalam Technical University
S15- 11:50 AM - 12:00 PM	Mr. Siddhant Singh, IISc Bangalore	S18- 11:50 AM - 12:00 PM	Dr. Charu Lata Dube, CUG	S13- 11:30 AM - 11:40 AM	Mr. Aloka Ranjan Sahoo, IGCAR
S16- 12:00 PM - 12:10 PM	Mr. Vipin C K, CSIR-NIIST Kerala	S19- 12:00 PM - 12:10 PM	Ms. Paulomi Singh, IIT Delhi	S14- 11:40 AM - 11:50 AM	Mr. Sujoy Paul, IIT Delhi
S17- 12:10 PM - 12:20 PM	Mr. Manoj Kumar, VIT AP University	S20- 12:10 PM - 12:20 PM	Ms. Fatima Zehra, JMI	S15- 11:50 AM - 12:00 PM	Mr. Vidit Pandey, AMU
S18- 12:20 PM - 12:30 PM	Ms. Neha Chakraborty, BIT Mesra, Ranchi	S21- 12:20 PM - 12:30 PM	Ms. Bhawna SU, Gurugram	S16- 12:00 PM - 12:10 PM	Mr. Dishant Sharma, IIT Delhi
S19- 12:30 PM - 12:40 PM	Networking	S22- 12:30 PM - 12:40 PM	Ms. Barsha Priyadarshini, CSIR IMM	S17- 12:10 PM - 12:20 PM	Mr. Pallav Sahu, IIT Delhi
S20- 12:40 PM - 1:00 PM	Networking	S23- 12:40 PM - 01:00 PM	Networking	S18- 12:20 PM - 12:30 PM	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					
Invited Talks:	Session Chair Prof. Pankaj Yadav, PDU Gujrat		Session Chair Prof. Vipin Kumar, IIT Delhi	Invited Talks:	Session Chair Prof. Manika Khanuja, Jamia Millia Islamia, New Delhi
T16- 02:45 PM - 03:05 PM	Prof. Dibyajyoti Ghosh, IIT Delhi	T16- 02:45 - 03:05 PM	Prof. Rajendra Singh Dhaka, IIT Delhi	T2- 02:45 PM - 03:05 PM	Prof. Suresh C. Sharma, DTU, Delhi

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