



**International Conference on
Next-Gen Materials for Sustainable Future
(ICNMSF-2026)**
04-06 May 2026 | Akal University Talwandi Sabo | Bathinda | Punjab
Schedule



DAY-I May 4, 2026 (Monday)

08:30 - 09:30	Registration and Breakfast	
09:30 - 11:00	Inaugural Ceremony & Keynote - 1	Inaugural Address : Prof Gurmail Singh, Vice Chancellor, Akal University Keynote Speaker : Prof. S. K. Tripathi, Panjab University, Chandigarh <i>"Role of Charge Carriers in the Optoelectronic Properties of Two-Dimensional Nanocrystalline Semiconducting Materials"</i>
11:00 - 11:30	High Tea and Networking	
Technical Session-I Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Prof. Tejbir Singh		
11:30 - 12:15	Plenary Talk - 1	Prof. Anirban Chakraborti, Jawaharlal Nehru University, New Delhi <i>"Engineering 2D Nanomaterial Interfaces: From Defect-Induced Physics to Plasmon-Enhanced Sustainable Applications"</i>
12:15 - 01:00	Plenary Talk - 2	Prof. Ranjan Kumar, Panjab University, Chandigarh <i>"DFT Calculations to Explore Materials for Thermoelectric Applications"</i>
01:00 - 02:00	Lunch and Networking	
01:00 - 04:00	POSTER SESSION	
Technical Session-II Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Prof. S.K. Tripathi		
02:00 - 02:30	Invited Talk - 1	Prof. Manish Kumar, Jawaharlal Nehru University, New Delhi <i>"Solar Energy Breakthrough: Hybrid Halide Perovskite Solar Cells with Enhanced Efficiency and Stability"</i>
02:30 - 03:00	Invited Talk - 2	Prof. Prashant S. Alegaonkar, Central University of Punjab Bathinda <i>"AI Driven Inverse Design of Meta materials for Energy Harvesting Defence Platforms"</i>
03:00 - 03:30	Invited Talk - 3	Prof. Harpreet Singh, IIT Ropar <i>"Solid State Cold Spray Deposition: Introduction, Evolution, Applications and Future"</i>
03:30 - 04:00	Invited Talk - 4	Prof. Tejbir Singh, Sri Guru Granth Sahib World University Fatehgarh Sahib <i>"Beyond Passive Glass: Integrating Rare Earths for Photonic Applications"</i>
Technical Session-III Venue: Seminar Hall Ground Floor, Akal University Session Chair: Dr. Jitendra Pal Singh		
02:00 - 02:30	Invited Talk - 5	Dr. Jamilur R. Ansari, Yonsei University, South Korea <i>"Next-Generation Food Packaging Using 0D-2D Nanocomposites: A Route to Extended Shelf Life and Eco-Friendly Solutions"</i>
02:30 - 03:00	Invited Talk - 6	Dr. Jagdeep Singh, Thapar Institute of Engineering & Technology, Patiala <i>"Green Multifunctional Materials for EMI Shielding and Energy Storage Applications"</i>
03:00 - 03:30	Invited Talk - 7	Dr. Jitendra Pal Singh, Manav Rachna University, Faridabad <i>"Study of Lithium Lanthanum Zirconate Thin Films using X-ray Absorption Spectroscopy"</i>
03:30 - 04:00	Invited Talk - 8	Dr. Sandeep Kumar, Manav Rachna University, Faridabad <i>"Attosecond-XUV Photon Pulse Generation Using Mid-Infrared Laser in Argon Gas"</i>
02:00 - 03:30	Oral Presentation Session-1	
03:30 - 05:00	Oral Presentation Session-2	
04:00 - 04:30	Tea and Networking	
05:00 - 07:00	Visit to Takht Sri Damdama Sahib	
07:30 - 08:30	Conference Dinner	
DAY-II May 5, 2026 (Tuesday)		
8:00 - 9:00	Breakfast	



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Technical Session-IV Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Dr. Achchhe Lal Sharma		
09:00 - 10:00	Keynote - 2	Prof. R. K. Kotnala, Chief Scientist (Ex); CSIR-NPL. National Physical Laboratory, New Delhi <i>"World Record in Green Hydrogen Production by Hydroelectric Cells: India's Gift to the World—Globally Recognized and Validated!"</i>
10:00 - 10:45	Plenary Talk - 3	Prof. R. K. Moudgil, Kurukshetra University, Kurukshetra <i>"Tailoring Noble Metal Atomic Wires for Enhanced TE Performance and Spin Seebeck Effect via Alloying and Decoration: First-Principles Simulations"</i>
10:45 - 11:00	Tea and Networking	
Technical Session-V Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Prof. R. K. Moudgil		
11:00 - 11:30	Invited Talk - 9	Dr. Achchhe Lal Sharma, Central University of Punjab, Bathinda <i>"Hybrid Supercapacitors: A Smart Energy Storage Solution for Sustainable Development"</i>
11:30 - 12:00	Invited Talk - 10	Dr. Krishnakanta Mondal, Delhi University <i>"Atomic Clusters for Energy Applications"</i>
12:00 - 12:30	Invited Talk - 11	Dr. Mukhtiyar Singh, Delhi Technological University <i>"Pressure-Induced Emergence of Dual Topological Phases in PbSnX₂ (X = S, Se, Te) Chalcogenides"</i>
12:30 - 01:30	Keynote - 3	Prof. Ravindra Pandey, Michigan Technological University, USA <i>"Interface-Driven Properties of Two-Dimensional Materials"</i>
Technical Session-VI Venue: Seminar Hall Ground Floor, Akal University Session Chair: Dr. Puneet Negi		
11:00 - 11:30	Invited Talk - 12	Dr. Anurag Gaur, Netaji Subhas University of Technology, New Delhi <i>"Hybrid Supercapacitors: Fundamentals and Future of Energy Storage Devices"</i>
12:00 - 12:30	Invited Talk - 13	Dr. Manoj Kumar, Jaypee Institute of Information Technology Noida <i>"New Functionalities Derived by Tailoring Multiferroics for Sustainable Wastewater Purification"</i>
12:00 - 12:30	Invited Talk - 14	Prof. Yogendra Kumar Mishra, University of Southern Denmark <i>"Tetrapods based Advanced Materials for Advanced Technologies"</i>
11:00 - 12:30	Oral Presentation Session-3	
12:30 - 02:00	Oral Presentation Session-4	
01:30 - 02:30	Lunch and Networking	
Technical Session-VII Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Prof. S. K. Mahapatra		
03:00 - 03:30	Invited Talk - 15	Dr. Ashok Kumar, Central University of Punjab <i>"Machine Learning Assisted Study of Materials for Energy Applications"</i>
03:30 - 04:00	Invited Talk - 16	Dr. Mukesh Jakhar, IUAC, New Delhi <i>"Multiscale Computational Insights into Irradiation-Induced Defect Evolution in Functional Oxides"</i>
04:00 - 04:30	Invited Talk - 17	Dr. Jagdish Kumar, Central University of Punjab, Bathinda <i>"Computational Materials Modelling"</i>
04:30 - 05:00	Invited Talk - 18	Dr. Navpreet Kamboj, Punjab Engineering College, Chandigarh <i>"Zinc-Ion Hybrid Capacitors: Mechanisms, Challenges, and Emerging Solutions"</i>
Technical Session-VIII Venue: Seminar Hall Ground Floor, Akal University Session Chair: Dr. Puneet Negi		
02:30 - 03:00	Invited Talk - 19	Prof. Tulika Maitra, Indian Institute of Technology, Roorkee <i>"Emergent Multiferroicity in Certain Two Dimensional Rare-Earth Halide Based Monolayers"</i>



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03:00 - 03:30	Invited Talk - 20	Dr. Kulwinder Kaur, Royal College of Surgeons in Ireland <i>"Tiny Materials With Huge Potential: Nanoparticle Reinforced Hydrogels for Osteoporotic Bone Repair"</i>
03:30 - 04:00	Invited Talk - 21	Dr. Vinod Kumar, The University of the West Indies, St. Augustine <i>"Photovoltaic Solar Cells for Sustainable Energy Development"</i>
04:00 - 04:30	Invited Talk - 22	Dr. Ambika Tundwal, Guru Tegh Bahadur Institute of Technology, New Delhi <i>"AI-Driven Monte Carlo Modeling for Radiation Damage and Reliability in Sustainable Materials"</i>
04:30 - 05:00	Invited Talk - 23	Dr. Amardeep Bharti, Malvern Panalytical, The Netherlands <i>"A Novel Approach for Fast Texture, Residual Stress and In-Plane Diffraction using an X-ray Lens with a Rotating Slit"</i>
Technical Session-VII Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Dr. Parminder Kaur		
02:30 - 03:00	Invited Talk - 24	Dr. Sahil Gasso, Florida International University, USA <i>"Engineering MXene-Based Nanostructured Heterostructures for Sustainable Gas Sensing and Energy Harvesting Applications"</i>
03:00 - 03:30	Invited Talk - 25	Dr. Kamal Jha, Indian Institute of Information Technology Vadodara, India <i>"Quantum Devices and Circuits"</i>
03:30 - 04:00	Invited Talk - 26	Dr. Archana Dagar, Guru Tegh Bahadur Institute of Technology, New Delhi <i>"Turning Waste into Function: Flash-Polymer Composites for Photocatalytic Dye Degradation"</i>
04:00 - 04:30	Invited Talk - 27	Dr. Richa Bhardwaj, Elettra Sincrotrone Trieste, Italy <i>"Ultrafast All-Optical Magnetization Dynamics for Spintronics"</i>
04:30 - 05:00	Invited Talk - 28	Dr. Maninder Kamboj, Toronto Metropolitan University, Canada <i>"AI-Assisted Modeling of Defect-Mediated Dark and Photoconductive"</i>
02:30 - 04:00	Oral Presentation Session-5	
05:00 - 05:15	Tea and Networking	
05:15 - 06:30	Oral Presentation Session-6	
07:00 - 08:00	Conference Dinner	
DAY-III May 6, 2026 (Wednesday)		
8:00 - 9:00	Breakfast	
Technical Session-IX Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Dr. Pawan Kumar		
09:30 - 10:00	Invited Talk - 29	Dr. Vinod Ashokan, NIT Jalandhar <i>"Many-Body Electron Correlation Effects in Quantum Materials"</i>
10:00 - 10:30	Invited Talk - 30	Dr. Balwinder Raj, NIT Jalandhar <i>"Nano Semiconductor Materials and Devices"</i>
10:30 - 11:00	Invited Talk - 31	Dr. Harpreet Singh, Guru Nanak Dev University, Amritsar <i>"Molecular Quantum Sensors Based on Organic Crystals"</i>
Technical Session-X Venue: Seminar Hall Ground Floor, Akal University Session Chair: Dr. Satnaam Singh		
09:00 - 09:30	Invited Talk - 32	Dr. Indu Sharma, Chung-Ang University, Republic of Korea <i>"From Materials to Devices: Chalcogenide Thin Films for Future Solar Energy Applications"</i>
09:30 - 10:00	Invited Talk - 33	Dr. Umesh Gaur, VP & RPTP Science College, Sardar Patel University, Gujrat <i>"Magnetic Nanostructures: Nanoscale Properties and Recent Applications"</i>
10:00 - 10:30	Invited Talk - 34	Dr. G. S. Selopal, Dalhousie University, Canada <i>"Quantum Dots from Fundamental to Sustainable Technology Development"</i>
10:30 - 11:00	Invited Talk - 35	Dr. Deepak Kumar, University of Leeds, Leeds <i>"Applications at Terahertz Frequency"</i>
11:00 - 11:30	Tea and Networking	



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Technical Session-XI Venue: Seminar Hall 2nd Floor, Akal University Session Chair: Dr. Pawan Kumar		
11:30 - 12:00	Invited Talk - 36	Dr. Bonamali Pal <i>"Harnessing Visible-Solar Light for Sustainable Energy, Environmental Remediation, and Fine Chemical Synthesis through Green Photocatalysis"</i>
12:00 - 12:30	Invited Talk - 37	Dr. Mamta Rani, DAV University, Jalandhar <i>"Next-Generation Solar Energy: From Nanostructured Photoanodes to Stable, Lead reduced Perovskite Devices"</i>
12:30 - 01:00	Invited Talk - 38	Dr. Paragti Kumar, Cnetral University of Jammu, Jammu <i>"Designing of Transparent Broadband Photodetectors"</i>
Technical Session-XII Venue: Seminar Hall Ground Floor, Akal University Session Chair: Dr. Iqbal Singh		
11:30 - 12:00	Invited Talk - 39	Dr. Soma Banerjee, Harcourt Butler Technical University, Kanpur <i>"Polypyrrole Based Electrodes for Supercapacitor Devices: Significance of Mass Loading on Electrochemical Performance"</i>
12:00 - 12:30	Invited Talk - 40	Dr. Manmeet Kaur, Bhabha Atomic Research Centre, Mumbai <i>"Metal Oxide Based Chemiresistive Sensors"</i>
01:00 - 02:00	Lunch and Networking	
02:00 - 03:00	Public Lecture by Prof. P. K. Ahluwalia Venue: Seminar Hall 2nd Floor, Akal University	
03:15 - 04:00	Valedictory Function	
04:00 - 04:20	Certificate Distribution	
04:20 - 05:00	High Tea	