

**International Conference on Energy Materials and Devices
(ICEMD-2022)**

(January 11& 12, 2022)

Technical Program

Day -1, 11th January 2022

Joining link (for inaugural session, Keynote Talk, and session 1& 2): <https://bhu-meeting.webex.com/bhu-meeting/j.php?MTID=m29c947c1ae94bb9aeafcbc0fa6f686ac>

9:15AM-10:35 AM

Inaugural Session

9:15 am: Digital floral tributes to our Visionary founder Bharatratna Mahamana Pt. Madan Mohan Malviya ji

9:20 am: BHU Kulgeet by Ms. Poulomi Bhattacharya (B.Sc. 3rd year Student)

9:30 am: Welcome Address by Chairperson (ICEMD-2022) and Principal (MMV) Prof. Inu Mehta

9:35 am: About the conference by Prof. Neelam Srivastava (Convener ICEMD-2022)

9:40 am: Address by Special Guest Prof Madhoolika Agrawal, the Dean (Faculty of Science)

9:45 am: Address by Special Guest Prof. Anil Kumar Tripathi, the Director (Institute of Science)

9:50 am: Inaugural Address by Chief Guest Dr. N Kalaiselvi, Director, CSIR-Central Electrochemical Research Institute (CSIR-CECRI), Karaikudi, India

10:20 am: Presidential remark by Prof V. K. Shukla (Honourable Rector, Banaras Hindu University)

10.30 am: Formal vote of thanks by Prof. Bhaskar Bhattacharya (Convener ICEMD-2022)

10:35 AM -11:20 AM

Keynote Talk

Sustainable Research approach for future Energy Storage devices

Dr. R. L. Sharma Chairman and CEO-SPEL Technologies Pvt. Ltd. PUNE, India

Session-1

Chairperson- Prof. U. P. Singh

11:20 AM-11:55AM	Plenary	Dr. S Venkata Mohan, Senior Principal Scientist, IICT, Hyderabad	Microbial Electrochemical Systems with Multi-Facet Applications: Emerging Trends
11:55 AM-12:20 PM	I-2	Prof. Vellaichamy Ganesan, Department of Chemistry, Institute of Science, Banaras Hindu University, India	Highly Dispersed Metal Porphyrins/Phthalocyanines on Various Supports to Replace Pt-based Catalysts in Fuel Cells
12:20 PM-12:45 PM	I-10	Prof. Prabhakar Singh, Department of Physics, IIT (BHU) Varanasi, India	Bandgap Engineering and Its Applications

Session-2

Chairperson- Prof. Akhilesh Kumar Singh

12:50 PM-1:25 PM	Plenary	Dr. Venugopalan Srinivasan, Ex-Head, Battery Division, PSG, URSC, Bangalore	“Lithium Batteries: Present Scenario and Future Prospects”
1:25 PM-1:50 PM	I-3	Dr. A. Manuel Stephan, CSIR-Central Electrochemical Research Institute, India	Lithium-Sulfur Batteries: A Futuristic System

1:50 PM- 2:40 PM LUNCH

1st day afternoon Sessions (for session 3, 4 and 5) joining link: <https://bhu-meeting.webex.com/bhu-meeting/j.php?MTID=m4045fb6f4e9cca0c015380c9ca32832c>

Session-3

Chairperson- Prof. Muhd Zu Azhan Yahya

2:40 PM- 3:05 PM	I-1	Prof. S. A. Hashmi, University Of Delhi, India	Redox-Active Gel Polymer Electrolytes for High-Performance Carbon Supercapacitors
3:05 PM- 3:30 PM	I-5	Prof. Vanchiappan Aravindan, Indian Institute of Science Education and Research (IISER), Tirupati, India	Research Progress on Li-Ion Capacitors
3:30 PM- 3:55 PM	I-6	Prof. Ravindra Kumar Gupta, King Saud University, Saudi Arabia	Cobalt-Based Solid Redox Mediators

Session-4

Chairperson- Prof. S. A. Hashmi

4:00 PM- 4:25 PM	I-7	Prof. Pramod Kumar Singh, Sharda University, India	Energy Devices Based on Waste Material Electrodes and Ionic Liquid Based Solid Electrolyte
4:25 PM- 4:50 PM	I-8	Prof. Muhd Zu Azhan Yahya, National Defence University of Malaysia	Effects Of Mo Substitution on Electrochemical Performance of Na ₃ V ₂ (PO ₄) ₃ /C Cathode Composite for Sodium-Ion Batteries
4:50 PM- 5:25 PM	Plenary	Prof. Arumugam Manthiram, the University of Texas at Austin, USA	Sustainable Next-Generation Battery Technologies

Session-5

Expert Panel- Prof. M. V. Reddy, Prof. Prabhakar Singh, Prof. Yogesh Kumar, Prof. Kamlesh Pandey, Prof. Sandeep Tomar, Prof. Ranveer Kumar

5:30 PM- 8:30 PM	Contributed Paper Oral Presentation Please See Annexure 1 of the Technical Session		
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**International Conference on Energy Materials and Devices
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Technical Program

Day -2, 12th January 2022

2nd day Forenoon joining link (for session 6 and 7): <https://bhu-meeting.webex.com/bhu-meeting/j.php?MTID=mb66f290965894f8a28407c8e8d267cbe>

Session-6

Chairperson-Prof. Tan Winie

9:30 AM-9:55 AM	I-9	Prof. M.V. Reddy, Nouveau Monde Graphite (New Graphite World), Montréal, Québec, Canada	Recent Advances in Energy Storage Materials
9:55 AM-10:30 AM	Plenary	Prof Xiulei "David" Ji, Oregon State University, USA	Ion Charge Carriers: Unlock the Potential of Storage Battery Chemistry
10:30 AM-10:55 AM	I-4	Prof. Anshuman Dalvi, Birla Institute of Technology and Science Pilani, India	Solid Polymer Electrolytes Dispersed with NASICON Structured Nano-Crystallites for All-Solid-State Supercapacitor Applications

Session-7

Chairperson-Prof. Pramod Kumar Singh

11:00 AM-11:25 AM	I-11	Prof. Tan Winie, Institute of Science, Universiti Teknologi MARA, Shah Alam Malaysia	Iron-Based Composite Electrode for Application in Supercapacitor
11:25 AM-11:50 AM	I-18	Prof. Deepak Kumar, Faculty of Weapon Technology, Electronics and Mechanical Engineering School, Vadodara, India	Investigations On Glyme Based Na ⁺ Conducting Polymer Gel Electrolytes for Electrochemical Applications
11:50 AM-12:15 PM	I-13	Prof. Amit K. Chakraborty, National Institute of Technology Durgapur, India	Carbon Nanostructures for Electrochemical Supercapacitors
12:15 PM-12:40 PM	I-14	Prof. Preetam Singh, IIT (BHU) Varanasi, India	Pseudocapacitive Metal-Carboxylate Electrodes for Hybrid Supercapacitors

12:40 PM- 1:30 PM LUNCH

2nd day afternoon joining link (for session 8, 9 and 10): <https://bhu-meeting.webex.com/bhu-meeting/j.php?MTID=m50e069dcd13ad5f0725458afb9b59884>

Session-8

Chairperson- Prof. Anshuman Dalvi

1:30 PM-1:55 PM	I-15	Prof. Udai Pratap Singh, School of Electronics Engineering, Campus-12, KIIT, Bhubaneswar-India	Advancement In Kesterite Based Thin-Film Solar Cells
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1:55 PM- 2:20 PM	I-16	Prof. S. P. Pandey, Teerthanker Mahaveer University, Moradabad, U.P. (INDIA)	Solar Cell Technology: Optimization of Processing Parameters of Crystalline Si Solar Cells
2:20 PM- 2:45 PM	I-17	Prof. Kamlesh Pandey, University of Allahabad, India	Synthesis and Application of Polymer/Nanodiamond Composites
2:45 PM- 3:10 PM	I-12	Prof. Rajan Jose, Faculty of Industrial Sciences & Technology, Malaysia	Sustainable Materials & Processes for Electrochemical Capacitors
Session-9			
Chairperson- Prof. Amit K. Chakraborty			
3:15 PM- 3:40 PM	I-19	Prof. Yogesh Kumar, ARSD College, University of Delhi, India	Advanced Electrode Materials for High-Performance Electrochemical Supercapacitors with Different Electrolytes
3:40 PM- 4:05 PM	I-20	Prof. Agnieszka Pawlicka, Universidade De São Paulo, Brazil	Eco-Friendly Polymer Electrolytes for Electrochromic Devices
4:05 PM- 4:30 PM	I-21	Prof. Diogo M.F. Santos, Instituto Superior Técnico, Universidade De Lisboa, Portugal	Towards Efficient Green H ₂ Production by Alkaline Water Electrolysis
4:30 PM- 4:55 PM	I-22	Prof. M. G. Buonomenna, Chemical Fundamentals of Technologies from the Italian Ministry for Instruction, University and Research (MIUR), Italy	Lithium-sulfur batteries: where are we now?
Session-10			
Expert Panel- Prof. Rajan Jose, Prof Preetam Singh, Prof. Mohan Lal Verma, Prof R. K. Gupta, Prof. S. P. Pandey, Dr. Piyush Kumar Sonkar			
5:00 PM- 7:30 PM	Contributed Oral Paper Presentation Please See Annexure 2 Of the Technical Session		
7:30 PM	Valedictory Function		

Annexure 1: Oral Presentation Schedule of Contributed Papers

(All the oral presenters please remember that submitting a detailed video for Conference YouTube is must, only then your short (5min) presentation will be allowed here)

<p style="text-align: center;">International Conference on Energy Materials and Devices (ICEMD-2022) (January 11& 12, 2022) Technical Program-Oral Presentation of Contributed papers Day -1, 11th January 2022</p>					
Time Slot	Abstract Number	Your Name	Department	Institution	Title Of Abstract
5:30 PM	C1	Sanjit Kumar Rath	PG Dept of Applied Physics and Ballistics	F M University	Effective efficiency enhancement in Silicon Photovoltaics with alternative ARC and gettering
5:35 PM	C2	Shivaji Madhukar Sonawane	Physics	Bharatiya Jain Sanghatana's Arts Science & Commerce College	Characterization of ZnTe thin films prepared by cathodic electrodeposition as a back contact buffer layer to CdS/CdTe solar cells.
5:40 PM	C3	Dr. Harit Kumar Sharma	Physics	APS University Rewa	Structural, optical and electrical properties of the ZnS and Zn _{1-x} Cd _x S Nanoparticles for Solar Cell Application
5:45 PM	C4	Dr. A. L. Saroj	Physics	I. Sc., BHU	Structural and ion transport study of CS-based Biopolymer electrolyte films
5:50:PM	C5	M. H. Priyadarsini	PG Department of Applied Physics and Ballistics	Fakir Mohan University	Capacitance of ppy/rGo/Ni(OH) ₂ nanocomposite for supercapacitor applications
5:55 PM	C6	Ritu Singh	Chemistry	MMV, Banaras Hindu University	Selective and sensitive determination of dual drugs on a molecularly imprinted polymer/ reduced graphene-modified electrode
6:00 PM	C7	Ankit Kargeti	Applied Sciences	BML Munjal University	Quantum chemical calculations on molecules with donor- π -acceptor structures for efficient Organic Field Effect Transistor
6:05 PM	C8	Jyoti Kumari	Physics	Banasthali Vidyapith	Investigation for Structural, Electronic and Optical characterization of lithium-based chalcopyrite semiconductors by using density functional theory

6:10 PM	C9	Vishal Rimal	Chemistry	Birla Institute of Technology	Review on electrochemical kinetics of Carbon Dots
6:15 PM	C10	Dr. Meenal Gupta	Physics	Sharda University	Functional biochar derived from Desmostachya bipinnata for the application in energy storage/conversion devices
6:20PM	C11	Dr. Manmeet Kaur Bhuie	Applied Physics	Shri Shankaracharya Technical Campus	Heating effect, UV radiation and Trap depth parameters of rare earth doped Yttrium oxide for dosimetry applications
6:25 PM	C12	Bibek Kumar Sonu	Physics	Birla Institute Of Technology Mesra	Fast and stable electrolyte scandium co-doped barium cerate
6:30 PM	C13	Vishwa Pratap Singh	School of Material Science and Technology	Indian Institute of Technology (BHU)	Synthesis of H ₂ O ₂ refluxed LaFeO ₃ loaded as filler in poly (vinylidene fluoride) for high energy density storage applications
6:35 PM	C14	Ms. Priyanka Lamba	Physics	Sharda University, Deshbandhu college	Simple and Rapid Ecofriendly Synthesis of NiO/RGO Nanocomposites using Guava Leaf Extract and their Physicochemical Characterization
6:40 PM	C15	Dr. B Keshav Rao	Applied Physics	Shri Shankaracharya Technical Campus	Structural, Electronic and Mechanical Properties of Hybrid h-BN/Graphene 2D layers: Density Functional Approach
6:45 PM	C16	Dhirendra Kumar	Chemistry	Shri Venkateshwara University	Synthesis And Characterization of Aryl Substituted 4 - Thiazolidino A, B – Unsaturated Ketones and Dimethyl amino Methylene Ketones And Their Biological Activity
6:50 PM	C17	Aparna Satish Ukarande	Department of Physics	Savitri bai Phule Pune university	Impact of the bath temperature on CdTe thin films prepared by electrochemical technique
6:55 PM	C18	Dr Amit Saxena	Physics	Shri Vaishnav Vidyapeeth Vishwavidyalaya,	Analytical Analysis of Concentration of Charge Carriers in Polymer Electrolytes Through Different Models
7:00 PM	C19	Pooja Rawat	Physics Department	Banaras Hindu University	AC conductivity and Ion dynamics behavior study of PVA based polymer electrolyte films
7:05 PM	C20	Prem Chandra Bharti	Physics	Indian Institute of Technology (BHU)	Comparative study of Physical Properties of Cold-sintered CuPbBr ₃ and

					CuPbI ₃ Perovskite for Solar Cell Applications
7:10 PM	C21	Dr. SWETA SINGH	Physics	Mahatma Gandhi Central University	Synthesis, characterization, and energy storage application of carbon/graphene aerogel
7:15 PM	C22	Monika Vikal	Department of Environment Science	IGNOU	Graphitic carbon nitride-based heterojunction nanocomposite for degradation of organic dyes
7:20 PM	C23	Subhrajit Konwar	Physics	Sharda University,	Future Prospects of Biopolymer- Ionic Liquid Polymer Electrolyte
7:25 PM	C24	Swarnima Singh	Physics	Indian Institute of Technology (Banaras Hindu University)	Structural and bandgap studies of Cs(Sn _{1/2} Pb _{1/2})Br ₃
7:30PM	C25	Varsha Yadav	School of Applied sciences	Shri Venkateshwara University	Role of Natural Dye in Photovoltaic Performance of Dye Sensitized Solar Cell
7:35 PM	C26	Ashish Kumar Ranjan	Physics	IIT (BHU),	Structural and Photo-conduction studies of NiO as a Hole Transport Material for Perovskite Solar Cells

Annexure 2: Oral Presentation Schedule of Contributed Papers

(All the oral presenters please remember that submitting a detailed video for Conference YouTube is must, only then your short (5min) presentation will be allowed here)

<p style="text-align: center;">International Conference on Energy Materials and Devices (ICEMD-2022) (January 11& 12, 2022) Technical Program-Oral Presentation of Contributed papers Day -2, 12th January 2022</p>					
Time Slot	Abstract Number	Your Name	Department	Institution	Title of Abstract
5:00 PM	C27	Dr. Sujeet Kumar Chaurasia	Centre For Nanoscience and Technology	Veer Bahadur Singh Purvanchal University,	Impact of In-Situ Formed Silica Nanospheres on Physicochemical and Ionic Transport Properties Of PEO-Based Hybrid Electrolytes
5:05 PM	C28	Pawan Singh Dhapola	Chemistry	D S B Campus, Kumaun University, India	Development of porous carbon from Polyvinyl chloride (PVC) and its application in supercapacitor
5:10 PM	C29	Dr. Vijayeta Pal	School of Materials Science & Technology	IIT (Banaras Hindu University),	Structural, Microstructure and Dielectric Properties of La ₂ NiMnO ₆ Double Perovskites Ceramics
5:15 PM	C30	Manisha Chauhan	Physics	IIT (BHU),	Influence Of Co-Doping on Structural, Morphological, And Electrical Properties Of Ruddlesden-Popper-Type Smsrni ₄₋₈ As A Cathode Material For IT-SOFC
5:20 PM	C31	Raghubir Kumar Prajapati	Physics	Banaras Hindu University	To Study DC Conductivity And Dielectric Properties of Composition [PVA:CS:PEG]-Agno ₃ Based Biopolymer Electrolyte Films
5:25 PM	C32	Manisha Sharma	Physics	IIT BHU	Synthesis And Photoluminescence Studies of Lanthanide Doped Ca ₉ Y(VO ₄) ₇ Polycrystalline Material
5:30 PM	C33	Uma Sharma	Physics	Indian Institute of Technology (BHU)	Electrical Properties of Laxsr ₁ -Xtio ₃ -Δ As SOFC Electrode Material
5:35 PM	C34	Jyothy G Vijayan	Chemistry	M.S Ramaiah University of Applied Sciences	Synthesis and Characterization of Modified Moringa Olifera Seed Pod Nanocellulose Based Hydrophobic Polyurethane Xerogels

5:40 PM	C35	D. Lakshmi	Department of Physics	Bharathiar University	Backup Phase Assisted Mntio3 Electrodes for Supercapacitor Applications
5:45 PM	C36	Tabish Rasheed	Applied Science,	BML Munjal University,	Design of Two Novel Dyes Having Maximum Absorption in Infrared Region: A DFT Investigation
5:50 PM	C37	Dona Susan Baji	Amrita Centre for Nano Sci. and Molecular Medicine	Amrita Vishwa Vidyapeetham,	Rechargeable Alkali Metal Ion Batteries With Chemically Reduced Fe[Fe(CN)6] Cathode
5:55 PM	C38	SILPASRE E S J	Nano Energy Division	Amrita Center for Nanosciences and Molecular Medicine	Lithium-Rich Layered Cathode for Advanced Lithium-Ion Batteries – Particle Size and Operation Temperature Effects
6:00 PM	C39	Niti Agrawal	Physics	University of Delhi- Shyamlal College	Monthly Energy Yield Assessment of Solar Photovoltaic System Under Uniform Irradiance and Partial Shaded Conditions
6:10 PM	C40	Chandra Bhal Singh	School Of Materials Science and Technology	Indian Institute of Technology (B. H. U.)	Band Gap Engineering of Batio3 Perovskite Oxide by Vanadium Doping and Observation of Photovoltaic Response
6:15 PM	C41	M Infanta Diana	Physics	Bharathiar University	Carbon Captivated Nasno2 Anode for Na-Ion Batteries
6:20 PM	C42	Ramesh A	Physics	Banaras Hindu University	Combustion Preparation of Reduced Graphene Oxide for Supercapacitor Application
6:25 PM	C43	Devesh Chandra Bharati	Department of Physics	Institute of Science, BHU,	Effect of Ionic Liquid on Structural and Ion Transport Properties Of CS-PVA-NaI Based Biopolymer Electrolyte Films
6:30 PM	C44	Sachin Vijay Desarada	Department Of Physics	Savitribai Phule Pune University,	Optimization of Mose2 Back Interface Layer for High Efficient CIGS Solar Cells: Numerical Analyses
6:35 PM	C45	Satyendra Kumar Satyarathi	Ceramic Engineering	Indian Institute of Technology (BHU)	Enhancement In the Dielectric Properties In Rare Earth Cerium Doped Linbo3 For High-Temperature Applications
6:40 PM	C46	Adlin Helen	Physics	Bharathiar University	Influence Of Filler Content on Magnesium Conducting Chitosan Biopolymer Electrolyte
6:45 PM	C47	Kamana Kumari Mishra	Physics	IIT (BHU)	Catalytic Behaviour of Hydrothermal Processed NiO

6:50 PM	C48	T. Kiruthika	Department of Physics	Bharathiar University	One-Step Green Synthesis of ZnFe ₂ O ₄ Anodes for Li-Ion Batteries
6:55 PM	C49	Tejas Sharma	Department of Mechanical and Material Engineering	Universiti Tunku Abdul Rahman, Sungai Long Campus	Poly (methyl methacrylate) doped with ionic liquid for energy storage devices
7:00 PM	C50	Sushant Kumar	Physics	Sharda University	Preparation, characterization and application of low viscosity ionic liquid doped solid polymer electrolyte
7:05 PM	C51	Abhimanyu Singh	Physics	Gautam Buddha University	Electrical, Structural and Electrochemical performance of Polyethylene oxide doped with 1-ethyl-3-methylimidazolium tricyanomethanide ionic liquid
7:10 PM	C52	Dipti Yadav	Department of Physics (MMV)	Banaras Hindu University	Mg (ClO ₄) ₂ mixed crosslinked corn starch: A flexible and high conducting polymer-in-salt-electrolyte
7:15 PM	C53	Kalyan B. Chavan	Physics	Ahmednagar College	Structural and Optical Investigations on Direct current (DC) magnetron sputtered CZTS thin film
7:20 PM	C54	Diptarka Roy	Physics	Babasaheb Bhimrao Ambedkar University	Green synthesis of bismuth ferrite nanoparticle for PVA-PANI-BFO nanocomposite membrane to study the ionic conductivity with varying relative humidity