

**1st International Conference
on
Recent Trends in Chemical Sciences and Sustainable Energy**

An International Conference on “Recent Trends in Chemical Sciences and Sustainable Energy (RTCSSE-2023)” was jointly organized by Department of Chemistry, Swami Shraddhanand College, University of Delhi and NIT-Delhi with a view to bring together leading researchers and scientists and to provide beneficial networking opportunities. The conference was held at Auditorium, NIT-Delhi, India from March 24-25, 2023.

The primary objective of this conference was to serve as a forum for the exchange of ideas and knowledge between individuals working at different frontiers of chemical sciences and sustainable energy. It provided a platform for the researchers, scientists, professors from academia and industry participants to showcase their research in the form of keynote addresses, lectures, discussions and presentations on cutting edge research and technology. It gave a wonderful opportunity for the participants to create networks among the peers that helped in strengthening collaborative interdisciplinary research.

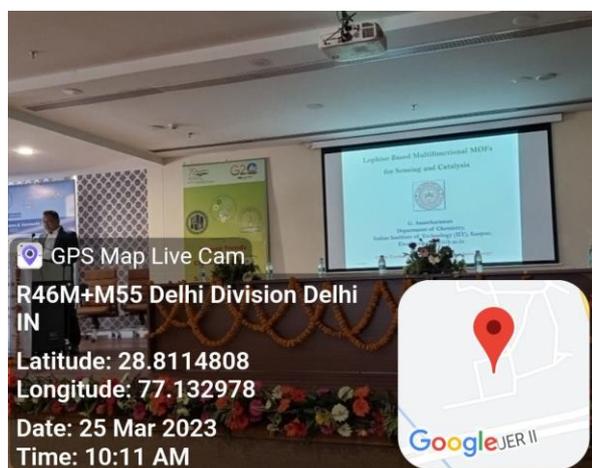
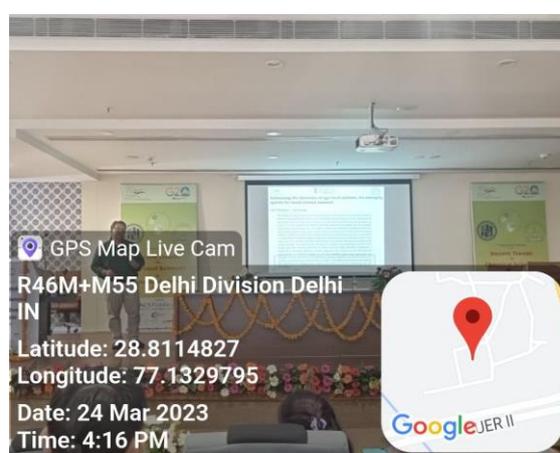
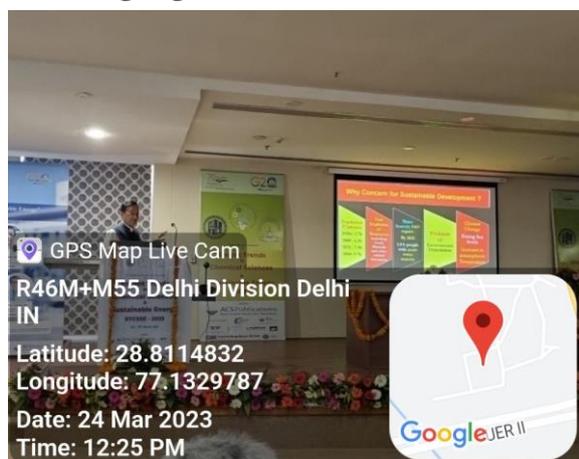
In these two days of the conference, following themes were emphasized:

- **Energy Production, Conversion and Storage**
- **Hydrogen Fuels**
- **Smart materials**
- **Porous materials**
- **Composite Materials**
- **Nanomaterials**
- **Catalysis**
- **Molecule Machines**
- **Molecular Modelling**
- **Green Chemistry**
- **Applied Chemistry**
- **Photochemistry**
- **Metal Organic Frameworks (MOFs)**

The conference covered the crucial problems of current and future world; the speakers in the conference presented the latest Initiatives in Energy, Environment, Material Science, Nanotechnology, Education and Health based on their own experiences in either industry or academia and address the current challenges and opportunities. They provided strategies for designing, adapting and incorporating new strategies in industries as well as in academia. Various eminent leaders participated and shared their views in the conference. The conference

had two keynote addresses from Prof. (Dr.) A. K. Bakhshi, Founding VC, PDM University, Haryana and Prof. Sourav Pal, Department of Chemistry, Ashoka University, Sonapat, Haryana. There were 18 invited lectures on different themes of the conference. More than 200 students and researchers participated with utmost enthusiasm. One of the major highlights of the workshop was “Oral and Poster Presentations”. 30 oral papers were presented on both days in different technical sessions. The poster session was also held both the days. More than 100 undergraduate and postgraduate students, research scholars and teachers from various colleges and universities participated enthusiastically and showcased their research work in this session.

Some highlights:





Program schedule for the two days



"Recent Trends in Chemical Sciences and Sustainable Energy"
 Department of Applied Sciences, National Institute of Technology Delhi
 Department of Chemistry, Swami Shradhdhanand College, University of Delhi
 March 24-25, 2023

PROGRAM SCHEDULE

Conference Venue: Auditorium and Conference Hall, Admin. Block (5 th Floor)	
Day 1: March 24, 2023	
Registration & Breakfast 09:00 AM to 10:00 AM: WAITING AREA OF AUDITORIUM	
Inaugural Session: AUDITORIUM, ADMIN BLOCK	
10:00 AM-10:02 AM	Welcome Note
10:02 AM-10:05 AM	Lighting of Lamp
10:05 AM-10:10 AM	Felicitation of Dignitaries
10:10 AM-10:15 AM	Welcome Address and Opening Remarks, Dr. Amit Pratap Singh, Convener, NIT Delhi
10:15 AM-10:20 AM	Address by Chairman, Prof. Praveen Garg, Principal, SSNC, DU
10:20 AM-10:25 AM	Address by Shri. Ravinder Kumar, Registrar, NIT Delhi
10:25 AM-10:30 AM	Presidential Address by Patron, Prof. (Dr.) Ajay K. Sharma, Director, NIT Delhi
10:30 AM-10:35 AM	Address by Guest of Honor, Prof. Rajeev Gupta, CEO, Institute of Eminence, DU
10:35 AM-10:40 AM	Release of Abstract Book
10:40 AM-11:10 AM	Inaugural Address by Chief Guest Dr. Anil Kumar Mishra, Director, INMAS, DRDO
11:10 AM-11:15 AM	Vote of Thanks, Dr. Anil K. Sharma, Co-convenor
11:15 AM	National Anthem & Group Photograph with Dignitaries and Participants
High Tea 11:15 AM to 11:45 AM: WAITING AREA OF AUDITORIUM	
Keynote Talk (Auditorium)	
11:45 AM-12:30 PM	Session Chair: Prof. Anil Kumar, Head, Department of Applied Chemistry, DTU Co-Chair: Dr. V. S. Prasad, Applied Sciences, NIT Delhi Keynote Talk-1: Prof. A. K. Bakshi, Founding Vice-Chancellor of PDM University Harvans
First Technical Session (Auditorium)	
12:30 PM-01:30 PM	Session Chair: Prof. Geeta Sikda, Head, CSE, NIT Delhi Co-Chair: Dr. Ganendra Shrivastava, Applied Sciences, NIT Delhi Speaker ILO1: Prof. M. Sankar, Department of Chemistry, IIT Roorkee Speaker ILO2: Prof. Ram Singh, Department of Applied Chemistry, DTU
Lunch: 01:30 PM-02:30 PM: Front of Bank of Baroda, Admin. Block (Ground Floor)	
Second Technical Session (Auditorium)	
02:30 PM-04:10 PM	Session Chair: Prof. Manoj Kumar, Head, ECE, NIT Delhi Co-Chair: Dr. Pradnan Kumar, Applied Sciences, NIT Delhi Speaker ILO3: Prof. B. S. Kaith, Department of Chemistry, NIT Jalandhar Speaker ILO4: Prof. Sameer Saha, Department of Chemistry, IIT Delhi Speaker ILO5: Prof. Neeraj, Department of AES, NIFTEM Kundli Speaker ILO6: Prof. N. K. Kaulak, Kwangwon University, Seoul
High Tea 04:10 PM-04:30 PM: WAITING AREA OF AUDITORIUM	
Third Technical Session	
Auditorium	
04:30 PM-5:30 PM	Session Chair: Prof. Rupal Pandey, Department of Chemistry, NIT Uttarakhand Co-Chair: Dr. Ritu Goyal, AS, NIT Delhi Speaker OP1: Dr. Arvind Chaudhary Speaker OP2: Mr. Anshul Jain Speaker OP3: Dr. Ashish Kumar Speaker OP4: Mr. Subroto Kumar Speaker OP5: Mr. Darshilam Speaker OP6: Dr. Deepika
Conference Hall	
04:30 PM-5:30 PM	Session Chair: Prof. Munam Ghosh, Department of Chemistry, Ashoka University Co-Chair: Dr. Sakshi Priva, AS, NIT Delhi Speaker OP7: Ms. Divyika Dhanraj Speaker OP8: Dr. Gaurav Rishi Speaker OP9: Mr. Hari Prasad Speaker OP10: Ms. Himani Sharma Speaker OP11: Dr. Manita Beldal Speaker OP12: Ms. Manisha Prakashini
Networking	

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Conference Venue: Auditorium, Admin. Block and Conference Hall
 Day 2: March 25, 2023

Conference Venue: Auditorium, Admin. Block and Conference Hall	
Day 2: March 25, 2023	
Breakfast 09:00 AM to 09:00 AM: WAITING AREA OF AUDITORIUM	
Fourth Technical Session	
(Auditorium)	
10:00 AM-11:15 AM	Session Chair: Dr. Anurag Mishra, Balmer Industries, Ghazalvi, Noida, Mumbai Co-Chair: Dr. Nishant Verma, Department of Chemistry, SSNC, DU Speaker ILO7: Prof. G. Anandharaman, Department of Chemistry, IIT Kanpur Speaker ILO8: Dr. Anuradha Singh, Sr. Scientist, Sun Pharma, Gurugram Speaker ILO9: Dr. Amit Srivastava, Associate Director-R&D, Navin Fluorine International Limited, Surat
(Conference Hall)	
10:00 AM-11:15 AM	Session Chair: Dr. Parthiv Trivedi, Balmer Industries, Ghazalvi, Noida, Mumbai Co-Chair: Dr. Anandh Sekh, Department of Chemistry, SSNC, DU Speaker ILO10: Prof. Rupal Pandey, Department of Chemistry NIT Uttarakhand Speaker ILO11: Prof. Avijit Kumar Paul, Department of Chemistry NIT Kurukshetra Speaker ILO12: Prof. Munam Ghosh, Department of Chemistry, Ashoka University
Tea 11:15 AM-11:30 AM: WAITING AREA OF AUDITORIUM	
Keynote Talk (Auditorium)	
11:30 AM-12:10 PM	Session Chair: Prof. S. K. Awasthi, Head @ Dean (Faculty of Science), University of Delhi Co-Chair: Dr. Shalika Bala Mehta, Department of Chemistry, Kalindi College, DU Keynote Talk-2: Prof. Sourav Pal, Department of Chemistry, Ashoka University
Fifth Technical Session	
(Auditorium)	
12:10 PM- 01:30 PM	Session Chair: Prof. B. S. Kaith, Department of Chemistry, NIT Jalandhar Co-Chair: Dr. Mukesh Verma, Department of Chemistry, SSNC, DU Speaker ILO13: Prof. Ashutosh Upadhyay, Department of Food Science and Tech., NIFTEM K Speaker ILO14: Prof. Sonika Deka, Department of Chemistry, DU Speaker ILO15: Prof. Pritham Mukhopadhyay, School of Physical Sciences, JNU
(Conference Hall)	
12:10 PM- 01:30 PM	Session Chair: Prof. Gajender Gaur, Department of Chemistry, SSNC, DU Co-Chair: Dr. Chandan Shukhar Javaga, Department of Chemistry, SSNC, DU Speaker ILO16: Prof. Bhanu Prasad Chakraborty, Department of Chemistry, IIT Delhi Speaker ILO17: Prof. Uma Rani, Department of CSE, World College of Technology and Management, Gurugram, Haryana Speaker ILO18: Prof. Panamra Venkatesu, Department of Chemistry, DU
Lunch break 01:30 PM-02:30 PM: Front of Bank of Baroda, Admin. Block	
Poster Presentation Session 02:30 PM-03:30 PM: 1 st Floor, Admin. Block, Near ICICI Bank	
Sixth Technical Session (03:30 PM-4:30 PM): Admin. Block	
Auditorium	
03:30 PM-4:30 PM	Session Chair: Dr. Arvind Chaudhary, SERB Co-Chair: Dr. Suman Yadav, SSNC, DU Speaker OP13: Ms. Manojima Siddiqui Speaker OP14: Dr. Mohan Lal Speaker OP15: Dr. Monika Singh Speaker OP16: Ms. Neha Prasad Speaker OP17: Dr. Nishant Kumar Speaker OP18: Dr. Rami Kumar Kohal
Conference Hall	
03:30 PM-4:30 PM	Session Chair: Dr. Umesh Kumar, Dept. of Chemistry, Daulatabad College, DU Co-Chair: Dr. Ritu Goyal, NIT D Speaker OP19: Ms. Safia Iqbal Speaker OP20: Mr. Sanjeev Kumar Speaker OP21: Ms. Shivani S Desai Speaker OP22: Ms. Shiveta Singh Speaker OP23: Ms. Srishri Upadhyay Speaker OP24: Ms. Sugam Kaur
ALR2 (Ground Floor)	
03:30 PM-4:30 PM	Session Chair: Dr. Deepak Gupta, Department of Chemistry, DTU Co-Chair: Dr. Sakshi Priva, NIT D Speaker OP25: Dr. Sumati Rani Speaker OP26: Ms. S. Thangaraj Speaker OP27: Dr. Upasana Isar Speaker OP28: Dr. Varsha Jain Speaker OP29: Mr. Anish S Bulbul Speaker OP30: Mr. Kamal
Valedictory Session and Concluding Remarks: AUDITORIUM	
04:30 PM-04:35 PM	Opening Remarks by the Co-convenor Dr. Bhupinder Mehta, SSNC, DU
04:35 PM-04:50 PM	Best Oral and Poster Award Distribution
04:50 PM-04:55 PM	Address by Prof. (Dr.) Ajay Kumar Sharma, Hon'ble Director, NIT Delhi
04:55 PM-05:00 PM	Address by Chief Guest Prof. A. K. Paul, CSIO Chandigarh
05:00 PM-05:05 PM	Illuminating the Future of RTCSSE Dr. Amit Pratap Singh, Convener, Dr. Anil Kumar Sharma, Co-convenor, NIT Delhi
05:05 PM-05:10 PM	Vote of Thanks by the Organizing Committee, RTCSSE: Mr. Devansh Gohlawat
05:10 PM-05:15 PM	National Anthem
05:15 PM	Tea and Networking

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List of keynote and invited speakers:

Keynote Speakers

S.No. ID	Name of Speaker	Affiliation	Title
1	Prof. (Dr.) A. K. Bakshi	Founding VC, PDM University, Haryana; Chairman, National Resource Centre of Chemistry, MoE, GOI; Former VC, UPRTOU, Allahabad	Role of Chemistry in Sustainable Development
2	Prof. Sourav Pal	Department of Chemistry, Ashoka University, Sonapat, Haryana	Computational Chemistry in de novo design of molecules and materials

Invited Speakers

Paper ID	Name of Speaker	Affiliation	Title
IL1	Prof. M. Sankar	Department of Chemistry, Indian Institute of Technology Roorkee, Roorkee - 247667, Uttarakhand, India	Metalloporphyrins for Energy and Environmental Applications
IL2	Prof. Ram Singh	Department of Applied Chemistry, Delhi Technological University, Delhi - 110042, India	Natural Products in Drug Discovery: a Historical Overview
IL3	Prof. Balbir Singh Kaith	Department of Chemistry, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar - 144805, Punjab, India	Fabrication of Ecofriendly Materials and their Prospective Applications
IL4	Prof. Sameer Sapra	Department of Chemistry, Indian Institute of Technology Delhi, Delhi - 110016, India	2D Transition Metal Dichalcogenides based Heterostructures for Catalytic and Optoelectronic Applications
IL5	Prof. Neeraj	Department of Agriculture and Environmental Science, National Institute of Food Technology Entrepreneurship and Management, Kundli - 131028, Haryana, India	Sustainable Postharvest Supply Chain Systems (Fresh Horticultural Produce Perspective)
IL6	Prof. Nagendra Kumar Kaushik	Department of Electrical and Biological Physics & Plasma Bioscience Research Center, Kwangwoon University, Seoul	Environmental Friendly Plasma Technologies for Green Nano-Chemistry, Cancer Treatment, Virus

		-01897, South Korea	Inactivation, and Smart Agriculture
IL7	Prof. G. Anantharaman	Department of Chemistry, Indian Institute of Technology Kanpur, Kanpur - 208016, Uttar Pradesh, India	Lophine Based Multifunctional MOFs for Sensing and Catalysis
IL8	Dr. Anuradha Singh	Analytical Research, Sun Pharmaceutical Industries Ltd., Gurugram - 122015, Haryana, India	Identification of Unknown Impurities in Active/ Finished Pharmaceuticals and Degradation Study by LC-MS/MS using Electrospray Ionization
IL9	Dr. Amit Srivastava	Research and Development Department, Navin Fluorine International Limited, Surat - 394150, Gujarat, India	Flow Chemistry: Recent Trends in Chemical and Pharmaceutical Industries
IL10	Prof. Rampal Pandey	Department of Chemistry, National Institute of Technology Uttarakhand, Srinagar - 246174, Uttarakhand, India	Stimuli Responsive Low Molecular Weight Fluorescent Supramolecular Metallogels
IL11	Prof. Avijit Kumar Paul	National Institute of Technology Kurukshetra, Kurukshetra - 136119, Haryana, India	Crystalline Metal Phosphonate Hybrid Framework Solids: Structural Modification, Heterogeneous Catalysis, Energy Conversion and Storage Application
IL12	Prof. Munmun Ghosh	Department of Chemistry, Ashoka University, Sonapat - 131029, Haryana, India	Mechanistic Aspect of HER by Fe-Complex with Redox-Active Ligand
IL13	Prof. Ashutosh Upadhyay	Department of Food Science and Technology, National Institute of Food Technology Entrepreneurship and Management, Kundli - 131028, Haryana, India	Sustainable Food Systems: Role of a Food Scientist
IL14	Prof. Sasanka Deka	Department of Chemistry, University of Delhi, Delhi - 110007, India	Significantly Improved Hydrogen and Oxygen Evolution Reaction by Nanostructured Electrocatalyst
IL15	Prof. Pritam Mukhopadhyay	School of Physical Sciences, Jawaharlal Nehru University, New Delhi - 110067, India	Synthesis of Stable Radicals and their Counter Ion Dependent Property Modulation

IL16	Prof. Biswarup Chakraborty	Department of Chemistry, Indian Institute of Technology Delhi, New Delhi - 110016, India	Ionic Iron Oxide Nanocrystals Stabilized by Small Isopolymolybdate Clusters as Reactive Core for Water Oxidation
IL17	Prof. Uma Rani	Department of Computer Science & Engineering, World College of Technology and Management, Gurugram - 122506, India	Emerging Applications of AI & IoT in Sustainable Energy Utilities
IL18	Prof. P. Venkatesu	Department of Chemistry, University of Delhi, Delhi - 110007, India	Ionic Liquids as Green Solvents for Enhanced Stability of Proteins Against Multiple Stresses