



RTCSSE – 2023

1<sup>st</sup> International Conference

on

**“Recent Trends in Chemical Sciences and Sustainable Energy”**

Department of Applied Sciences, National Institute of Technology Delhi  
Department of Chemistry, Swami Shraddhanand College, University of Delhi

March 24-25, 2023

### PROGRAM SCHEDULE

Conference Venue: Auditorium and Conference Hall, Admin. Block (5<sup>th</sup> 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. Anuj K. Sharma, Co-convener	
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-1 (Auditorium)		
11:45 AM-12:30 PM	Session Chair Co-Chair Keynote Talk-1	Prof. Anil Kumar, Head, Department of Applied Chemistry, DTU Dr. V. S. Pandey, Applied Sciences, NIT Delhi Prof. A. K. Bakhshi, Founding Vice-Chancellor of PDM University Haryana
First Technical Session (Auditorium)		
12:30 PM-01:30 PM	Session Chair Co-Chair Speaker IL01 Speaker IL02	Prof. Geeta Sikka, Head, CSE, NIT Delhi Dr. Gyanendra Sheoran, Applied Sciences, NIT Delhi Prof. M. Sankar, Department of Chemistry, IIT Roorkee Prof. Ram Singh, Department of Applied Chemistry, DTU
Lunch: 01:30 PM-02:30 PM: Front of Bank of Baroda, Admn. Block (Ground Floor)		
Second Technical Session (Auditorium)		
02.30 PM-04:10 PM	Session Chair Co-Chair Speaker IL03 Speaker IL04 Speaker IL05 Speaker IL06	Prof. Manoj Kumar, Head, ECE, NIT Delhi Dr. Prashant Kumar, Applied Sciences, NIT Delhi Prof. B. S. Kaith, Department of Chemistry, NIT Jalandhar Prof. Sameer Sapra, Department of Chemistry, IIT Delhi Prof. Neeraj, Department of AES, NIFTEM Kundli Prof. N. K. Kaushik, Kwangwoon University, Seoul
High Tea 04:10 PM-04:30 PM: WAITING AREA OF AUDITORIUM		
Third Technical Session		
04:30 PM-5:30 PM	Auditorium	Conference Hall
	Session Chair: Prof. Rampal Pandey Department of Chemistry, NIT Uttarakhand Co-Chair: Dr. Ritu Goel, AS, NIT Delhi Speaker OP1: Dr. Amita Chaudhary Speaker OP2: Mr. Anshul Jain Speaker OP3: Dr. Ashish Kumar Speaker OP4: Ms. Babneet Kaur Speaker OP5: Ms. Darakshan Speaker OP6: Dr. Deepika	Session Chair: Prof. Munmun Ghosh, Department of Chemistry, Ashoka University Co-Chair: Dr. Saloni Priya, AS, NIT Delhi Speaker OP7: Ms. Diksha Dhiman Speaker OP8: Dr. Gazala Ruhi Speaker OP9: Mr. Hari Parsad Speaker OP10: Ms. Himani Sharma Speaker OP11: Dr. Mamta Belwal Speaker OP12: Ms. Manisha Prakashni
Networking		

**Conference Venue: Auditorium, Admin. Block and Conference Hall**

**Day-2: March 25, 2023**

Breakfast 09:00 AM-10:00 AM: WAITING AREA OF AUDITORIUM			
Fourth Technical Session			
10:00 AM-11:15 AM	(Auditorium)		
	Session Chair Co-Chair Speaker IL07 Speaker IL08 Speaker IL09	Dr. Anurag Mishra, Reliance Industries, Ghansoli, Navi Mumbai Dr. Nishant Verma, Department of Chemistry, SSNC, DU Prof. G. Anantharaman, Department of Chemistry, IIT Kanpur Dr. Anuradha Singh, Sr. Scientist, Sun Pharma, Gurugram Dr. Amit Srivastava, Associate Director-R&D, Navin Fluorine International Limited, Surat	
	(Conference Hall)		
	Session Chair Co-Chair Speaker IL10 Speaker IL11 Speaker IL12	Dr. Parthiv Trivedi, Reliance Industries, Ghansoli, Navi Mumbai Dr Aanchal Sethi, Department of Chemistry, SSNC, DU Prof. Rampal Pandey, Department of Chemistry NIT Uttarakhand Prof. Avijit Kumar Paul, Department of Chemistry NIT Kurukshetra Prof. Munmun Ghosh, Department of Chemistry, Ashoka University	
Tea 11:15 AM-11:30 AM: WAITING AREA OF AUDITORIUM			
Keynote Talk-2 (Auditorium)			
11:30 AM-12:10 PM	Session Chair Co-Chair Keynote Talk-2	Prof. S. K. Awasthi, Head & Dean (Faculty of Science), University of Delhi Dr. Shilpika Bali Mehta, Department of Chemistry, Kalindi College, DU Prof. Sourav Pal, Department of Chemistry, Ashoka University	
Fifth Technical Session			
12:10 PM- 01:30 PM	(Auditorium)		
	Session Chair Co-Chair Speaker IL13 Speaker IL14 Speaker IL15	Prof. B. S. Kaith, Department of Chemistry, NIT Jalandhar Dr Mukesh Verma, Department of Chemistry, SSNC, DU Prof. Ashutosh Upadhyay, Department of Food Science and Tech., NIFTEM K Prof. Sasanka Deka, Department of Chemistry, DU Prof. Pritam Mukhopadhyay, School of Physical Sciences, JNU	
	(Conference Hall)		
	Session Chair Co-Chair Speaker IL16 Speaker IL17 Speaker IL18	Prof. Gajendra Gaur, Department of Chemistry, SSNC, DU Dr. Chandra Shekhar Jeengar, Department of Chemistry, SSNC, DU Prof. Biswarup Chakraborty, Department of Chemistry, IIT Delhi Prof. Uma Rani, Department of CSE, World College of Technology and Management, Gurugram, Haryana Prof. Pannuru Venkatesu, Department of Chemistry, DU	
Lunch break 01:30 PM-02:30 PM: Front of Bank of Baroda, Admn. Block			
Poster Presentation Session 02:30 PM-03:30 PM: 1 <sup>st</sup> Floor, Admin. Block, Near ICICI Bank			
Sixth Technical Session (03:30 PM-4:30 PM) Admin. Block			
Auditorium		Conference Hall	ALR2 (Ground Floor)
Session Chair: Dr. Arvind Chaudhary, SERB Co-Chair: Dr. Suman Yadav, SSNC, DU Speaker OP13: Ms. Masooma Siddiqui Speaker OP14: Dr. Mohan Lal Speaker OP15: Dr. Monika Singh Speaker OP16: Ms. Neha Pandey Speaker OP17: Dr. Nishant Kumar Speaker OP18: Dr. Renu Kumari Rohal		Session Chair: Dr. Umesh Kumar, Dept. of Chemistry, Deshbandhu College, DU Co-Chair: Dr. Ritu Goel, NIT D Speaker OP19: Ms. Safia Iqbal Speaker OP20: Mr. Sanjeev Kumar Speaker OP21: Ms. Shivani S Desai Speaker OP22: Ms. Shweta Singh Speaker OP23: Ms. Srishti Upadhyay Speaker OP24: Ms. Sugan Kanwar	Session Chair: Dr. Deepak Gupta Department of Chemistry, DTU Co-Chair: Dr. Saloni Priya, NIT D Speaker OP25: Dr. Suman Rani Speaker OP26: Ms. S. Thangriyal Speaker OP27: Dr. Upasana Issar Speaker OP28: Dr. Varsha Jain Speaker OP29: Mr.Amir S Bulbul
Valedictory Session and Concluding Remarks: AUDITORIUM			
04:30 PM-04:35 PM	Opening Remarks by the Co-convener 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 Shri Ravinder Kumar, Registrar, NIT Delhi		
04:55 PM-05:00 PM	Address by Prof. (Dr.) Ajay Kumar Sharma, Hon’ble Director, NIT Delhi		
05:00 PM-05:05 PM	Address by Chief Guest Prof. A. K. Paul, CSIO Chandigarh		
05:05 PM-05:10 PM	Illuminating the Future of RTC SSE Dr. Amit Pratap Singh, Convener, Dr. Anuj Kumar Sharma, Co-convener, NIT Delhi		
05:10 PM-05:15 PM	Vote of Thanks by the Organizing Committee, RTC SSE; Mr. Devansh Gahlawat		
05:15 PM	National Anthem		
Tea and Networking			

## Detailed Technical Program

<b>Day-1: March 24, 2023</b>		
<b>Keynote Talk-1</b>		
Chairperson: <i>Prof. Anil Kumar, Head, Department of Applied Chemistry, DTU</i>		
11:45 AM-12:30 PM	<b>Keynote Talk -1:</b> <b>Prof. A. K. Bakhshi</b> , Founding Vice-Chancellor of PDM University Haryana	Role of Chemistry in Sustainable Development
<b>First Technical Session</b>		
Chairperson: <i>Prof. Geeta Sikka, Head, CSE NIT Delhi</i>		
12:30 PM-01:00 PM	<b>Speaker IL01:</b> Prof. M. Sankar, Department of Chemistry, IIT Roorkee	Metalloporphyrins for Energy and Environmental Applications
01:00 PM-01:30 PM	<b>Speaker IL02:</b> Prof. Ram Singh, Department of Applied Chemistry, DTU	Natural Products in Drug Discovery: A Historical Overview
<b>Second Technical Session</b>		
Chairperson: <i>Prof. Manoj Kumar, Head, ECE, NIT Delhi</i>		
02:30 PM-02:55 PM	<b>Speaker IL03:</b> Prof. B.S. Kaith, Department of Chemistry, NIT Jalandhar	Fabrication of Ecofriendly Materials and Their Prospective Applications
02:55 PM-03:20 PM	<b>Speaker IL04:</b> Prof. Sameer Sapra, Department of Chemistry, IIT Delhi	2D transition metal dichalcogenides based heterostructures for catalytic and optoelectronic applications
03:20 PM-03:45 PM	<b>Speaker IL05:</b> Prof. Neeraj, Department of AES, NIFTEM-K	Sustainable Postharvest Supply Chain Systems (Fresh Horticultural Produce Perspective)
03:45 PM-04:10 PM	<b>Speaker IL06:</b> Prof. N.K. Kaushik, Department EBP, PBRC, Kwangwoon University, Seoul	Environmentally Friendly Plasma Technologies for Green Nano-chemistry, Cancer Treatment, Virus Inactivation, and Smart Agriculture
<b>Third Technical Session</b>		
Chairperson: <i>Prof. Rampal Pandey, Department of Chemistry, NIT Uttarakhand</i> Venue: Auditorium, 5 <sup>th</sup> Floor, Admin Block		
04:30 PM-04:40 PM	<b>Speaker OP01:</b> Dr. Amita Chaudhary	Development of Corrosion Inhibitor for Carbon Capture
04:40 PM-04:50 PM	<b>Speaker OP02:</b> Mr. Anshul Jain	Recyclable PS-DMAP Catalysed One-Pot Cascade Synthesis of $\alpha$ -Pyrones
04:50 PM-05:00 PM	<b>Speaker OP03:</b> Dr. Ashish Kumar	Highly Dispersed Gold Nanoparticles Supported on SBA-15 for Vapor Phase Aerobic Oxidation of Benzyl Alcohol
05:00 PM-05:10 PM	<b>Speaker OP04:</b> Ms. Babneet Kaur	Suppressing Dendrite Growth with a Poly(1-aminoanthraquinone) Coating in a VS4 Nanoflowers@Carbon Nanotubes Composite Based Long Lasting Zinc-ion Battery
05:10 PM-05:20 PM	<b>Speaker OP05:</b> Ms. Darakshan	Multicomponent Reaction of Arylglyoxal, Indole and 1,3-C-N Binucleophile Leading to Formation of Polycyclic Naphthyridine Derivatives
05:20 PM-05:30 PM	<b>Speaker OP06:</b> Dr. Deepika	Recent Studies on Triazole Molecules as Pharmaceuticals

Chairperson: <b>Prof. Munmun Ghosh, Department of Chemistry, Ashoka University</b> Venue: Conference Hall, 5 <sup>th</sup> Floor, Admin Block		
04:30 PM-04:40 PM	<b>Speaker OP07:</b> Ms. Diksha Dhiman	Unveiling the Potential of Deep Eutectic Solvents to Improve the Conformational and Colloidal Stability of Immunoglobulin G Antibodies.
04:40 PM-04:50 PM	<b>Speaker OP08:</b> Dr. Gazala Ruhi	Ground Water and Sanitation Condition of Mangroli Village: Issues and Approaches
04:50 PM-05:00 PM	<b>Speaker OP09:</b> Mr. Hari Parsad	Innovative Study of Photogalvanics in Solar Energy Transformation and Performance Analysis: Alizarin Cyanine Green, EDTA and Sodium Stearate System
05:00 PM-05:10 PM	<b>Speaker OP10:</b> Ms. Himani Sharma	Development of Aminoethyl-Nitropyridine Derived N, N, O-donor Schiff Base Ligand and their Metal Complexes for Molecular Detection and Electrocatalytic Studies
05:10 PM-05:20 PM	<b>Speaker OP11:</b> Dr. Mamta Belwal	Synthesis & Characterization of Supported Nano-Gold Catalysts for Agro-Industrial applications (Thermally and Photo-catalytically)
05:20 PM-05:30 PM	<b>Speaker OL12:</b> Ms. Manisha Prakashni	Rapid and High-Yield Synthesis of [23]Crown Ether: Applied as a Wheel Component in the Formation of Pseudo[2]rotaxane and Synthesis of [2]Catenane with a Dibenzylammonium Dumbbell

<b>Day-2: March 25, 2023</b>		
<b>Fourth Technical Session</b>		
Chairperson: <b>Dr. Anurag Mishra, Reliance Industries, Ghonsoli, Navi Mumbai</b> Venue: Auditorium, 5 <sup>th</sup> Floor, Admin Block		
10:00 AM-10:25 AM	<b>Speaker IL07:</b> Prof. G. Anantharaman, Dept. of Chemistry, IIT Kanpur	Lophine Based Multifunctional MOFs for Sensing and Catalysis
10:25 AM-10:50 AM	<b>Speaker IL08:</b> Dr. Anuradha Singh, Sr. Scientist, Sun Pharma, Gurugram	Identification of unknown impurities in active/finished Pharmaceuticals and degradation study by LC- MS/MS using Electrospray Ionization
10:50 AM-11:15 AM	<b>Speaker IL09:</b> Dr. Amit Srivastava, Associate Director-R&D, Navin Fluorine International Limited, Surat	Flow Chemistry: Recent Trends in Chemical and Pharmaceutical Industries
Chairperson: <b>Dr. Parthiv Trivedi, Reliance Industries, Ghonsoli, Navi Mumbai</b> Venue: Conference Hall, 5 <sup>th</sup> Floor, Admin Block		
10:00 AM-10:25 AM	<b>Speaker IL07:</b> Prof. Rampal Pandey, Department of Chemistry NIT Uttarakhand	Stimuli Responsive Low Molecular Weight Fluorescent Supramolecular Metallogels
10:25 AM-10:50 AM	<b>Speaker IL08:</b> Prof. Avijit Kumar Paul, Department of Chemistry, NIT Kurukshetra	Crystalline Metal Phosphonate Hybrid Framework Solids: Structural Modification, Heterogeneous Catalysis, Energy Conversion and Storage Application
10:50 AM-11:15 AM	<b>Speaker IL09:</b> Prof. Munmun Ghosh, Department of Chemistry, Ashoka University	Mechanistic Aspect of HER by Fe-Complex with Redox-Active Ligand



Keynote Talk-2		
Chairperson: <b>Prof. S. K. Awasthi, Head &amp; Dean (Faculty of Sciences), University of Delhi</b> Venue: Auditorium, 5 <sup>th</sup> Floor, Admin Block		
11:30 PM-12:10 PM	<b>Keynote Talk -2: Prof. Sourav Pal,</b> Department of Chemistry, Ashok University	Computational Chemistry in de novo design of molecules and materials
Fifth Technical Session		
Chairperson: <b>Prof. B. S. Kaith, Department of Chemistry, NIT Jalandhar</b> Venue: Auditorium, 5 <sup>th</sup> Floor, Admin Block		
12:10 PM-12:35 PM	<b>Speaker IL13:</b> Prof. Ashutosh Upadhyay, Department of Food Science and Tech., NIFTM	Sustainable Food Systems: Role of a Food Scientist
12:35 PM-01:00 PM	<b>Speaker IL14:</b> Prof. Sasanka Deka, Department of Chemistry, DU	Significantly improved Hydrogen and Oxygen Evolution Reaction by Nanostructured Electrocatalyst
01:00 PM-01:30 PM	<b>Speaker IL15:</b> Prof. Pritam Mukhopadhyay, School of Physical Sciences, JNU	Synthesis of Stable Radicals and their Counter Ion Dependent Property Modulation
Chairperson: <b>Prof. Gajendra Gaur, Department of Chemistry, SSNC, DU</b> Venue: Conference Hall, 5 <sup>th</sup> Floor, Admin Block		
12:10 PM-12:35 PM	<b>Speaker IL16:</b> Prof. Biswarup Chakraborty, Department of Chemistry, IIT Delhi	Ionic Iron Oxide Nanocrystals Stabilized by Small Isopolymolybdate Clusters as Reactive Core for Water Oxidation
12:35 PM-01:00 PM	<b>Speaker IL17:</b> Prof. Uma Rani, Department of CSE, WCT&M, Gurugram, Haryana	Emerging Applications of AI & IoT in Sustainable Energy Utilities
01:00 PM-01:30 PM	<b>Speaker IL18:</b> Prof. Pannuru Venkatesu, Dept. of Chemistry, DU	Ionic Liquids as green solvents for enhanced stability of proteins against multiple stresses
Sixth Technical Session		
Chairperson: <b>Dr. Arvind Chaudhary, SERB</b> Venue: Auditorium, 5 <sup>th</sup> Floor, Admin Block		
03:30 PM-03:40 PM	<b>Speaker OP13:</b> Ms. Masooma Siddiqui	Exploring the Potential of Deep Eutectic Solvents as a Sustainable Alternative to Organic Solvents in Green Chemistry for extraction of biological macromolecules
03:40 PM-03:50 PM	<b>Speaker OP14:</b> Dr. Mohan Lal	Sunlight-Induced Photo-Illumination of Mixed Surfactant in Photogalvanics for Electrical Power and Energy System
03:50 PM-04:00 PM	<b>Speaker OP15:</b> Dr. Monika Singh	Microwave Assisted Synthesis and Evaluation of the Antibacterial Activity of Cellulose and its Derivates on Enterococcus and Salmonella
04:00 PM-04:10 PM	<b>Speaker OP16:</b> Ms. Neha Pandey	Effect of Microwave Assisted Water Bath Glycation on Functional Properties of Soy Protein Isolate-Sodium Alginate Conjugates
04:10 PM-04:20 PM	<b>Speaker OP17:</b> Dr. Nishant Kumar	Functional Applications of Essential Oils in Food Packaging System
04:20 PM-04:30 PM	<b>Speaker OP18:</b> Dr. Renu Kumari Rohal	$\beta$ -Tetracyanobutadiene Appended Porphyrins: Facile Synthesis, Spectral and Electrochemical Redox Properties and Their Utilization as Excellent Optical Limiters

Chairperson: <b>Dr. Umesh Kumar, Dept. of Chemistry, Deshbandhu College, DU</b> Venue: Conference Hall, 5 <sup>th</sup> Floor, Admin Block		
03:30 PM- 03:40 PM	<b>Speaker OP19:</b> Ms. Safia Iqbal	Visible Light Promoted Catalyst free (VLCF) Multi-component Synthesis of Spiro Indolo-quinazolinone-pyrrolo[3,4-a]pyrrolizine Hybrids: Evaluation of In vitro Anti-cancer Activity, Molecular Docking and MD simulation
03:40 PM- 03:50 PM	<b>Speaker OP20:</b> Mr. Sanjeev Kumar	New Insight into Cu/Cu <sub>2</sub> O/CuO Nanocomposite Heterojunction Facilitating Photocatalytic Generation of Green Fuel
03:50 PM- 04:00 PM	<b>Speaker OP21:</b> Ms. Shivani Sarjerao Desai	Microwave Roasting-induced Changes in Quality Attributes of Spices
04:00 PM- 04:10 PM	<b>Speaker OP22:</b> Ms. Shweta Singh	Isolation and Biological Activity of a New Allelochemical from Ficus arnottiana Miq. as Potent Antimicrobial Agent
04:10 PM- 04:20 PM	<b>Speaker OP23:</b> Ms. Srishti Upadhyay	Role of Bio-Based Emulsion for the Delivery of Bioactive Compounds
04:20 PM- 04:30 PM	<b>Speaker OP24:</b> Ms. Suman Kanwar	Sustainable Polysaccharide-based Ion Exchange Resins for Removal of Heavy Metal Ions from Industrial Effluents
Chairperson: <b>Dr. Deepak Gupta, Dept. of Applied Chemistry, DTU</b> Venue: ALR2, Ground Floor, Admin Block		
03:30 PM- 03:40 PM	<b>Speaker OP25:</b> Dr. Suman Rani	Synthesis, Characterization and in vitro Antimicrobial Screening of 2-(substituted hydroxymethyl)-3-substituted-6-methyl-4H-furo[3,2-c]pyran-4-ones
03:40 PM- 03:50 PM	<b>Speaker OP26:</b> Ms. Sweta Thangriyal	Pt-Cu <sub>3</sub> TeO <sub>6</sub> /C Composite a High-Performance Supercapattery Material
03:50 PM- 04:00 PM	<b>Speaker OP27:</b> Dr. Upasana Issar	In Silico Studies on the Role of Flavonoid Derivatives as Anti-Viral Agents Against SARS-CoV-2
04:00 PM- 04:10 PM	<b>Speaker OP28:</b> Dr. Varsha Jain	Design, Synthesis and Application of 2-chloro-3-Nitrobenzoic Acid Based Three-Ring Bent-Core Molecules with a Terminal Halogen Moiety
04:10 PM- 04:20 PM	<b>Speaker OP29:</b> Ms. Amir Sohail Bulbul	Synthesis, Spectral and Electrochemical Studies of $\pi$ -Extended Porphyrins and Their Utilization as Efficient Two-Photon Absorbers and Selective Cyanide Ion Sensors

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