

## **Report of 21<sup>st</sup> National Conference on Surfactants, Emulsions and Biocolloids” in the School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur, November 23-25, 2023**

The 21<sup>st</sup> National Conference on Surfactants, Emulsions and Biocolloids “(NATCOSEB-XXI) was organized by the School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh under the aegis of Indian Society for Surface Science and Technology, Jadavpur University, Kolkata during November 23-25, 2023.

The 21<sup>st</sup> NATCOSEB was inaugurated by Prof Akhilesh Kumar Pandey, Vice Chancellor, Vikram University, Ujjain (M.P.), and Prof. Sachchidanand Shukla, Vice Chancellor Pt. Ravishankar Shukla University, Raipur presided over the function. Around 200 delegates from different parts of country attended this conference. The programme commenced with the inaugural ceremony by invoking the blessings of almighty in the form of lighting of the lamp by the Chief Guest Prof. Akhilesh Pandey, Prof. Sachchidanand Shukla, ISSST President-Prof. Asit Baran Mandal, Distinguished Guest Prof. D. C. Mukherjee, Prof. Soumen Ghosh (secretary), and Prof. Kallol K. Ghosh (chairman), and Prof. M. K. Deb, Prof. Shamsheer Pervez, Prof Manish Rai (Co-Chairpersons), Prof. Kamlesh Shrivastava, Dr. Manmohan Lal Satnami (Conveners) and Dr. Indrapal Karbhal, (Organizing Secretary) were also grace the occasion. The inaugural session started with welcome remarks by Chairman of the conference. On this occasion, a Book of Abstracts was released. The inauguration was followed by Keynote address by Prof. Dulal Chandra Mukherjee. Various scientific sessions were conducted during three days conference.

The conference not only showcased the latest advancements in surfactants, emulsions, and biocolloids, but also fostered a vibrant environment for networking and collaboration among researchers, academicians, and industry professionals. About 7 plenary lectures, 13 invited lectures, 11 short invited lectures and 10 young scientists oral presentation, and 42 poster presentations were organized during three days conference. Total 3 special lecture on the DST PURSE project related to environmental chemistry has also been organized, keeping in view of the present challenges in environmental research.

This conference was sponsored by Science and Engineering Research Board (SERB), New Delhi, Chhattisgarh Council of Science and Technology (CGCOST), Council of Scientific and Industrial Research (CSIR), New Delhi, Pt. Ravishankar Shukla University, Raipur and DST-Purse grant, New Delhi.

## **The technical sessions of each day are briefly given:-**

### **Day 1: Thursday, November 23, 2023**

The 21<sup>st</sup> National Conference on Surfactants, Emulsions & Biocolloids concluded as a resounding success, showcasing groundbreaking insights in the field. Plenary lectures by Prof. Amiya Kumar Panda, Prof. Partha Sarathi Mukherjee, and Prof. Tarasankar Pal highlighted diverse topics, from physico-chemical studies to self-assembled molecular vessels and a new discovery involving metalloids arsenic. Invited lectures by experts such as Prof. P. Venkatesu, Dr. Sujit Kumar Ghosh, Prof. P. A. Hassan, and Dr. Md. Sayem Alam provided in-depth perspectives on topics like smart colloidal composites, plasmonic field effect transistors, and the structure of supercooled solid micelles. The conference served as a hub for knowledge exchange, fostering collaboration and innovation among researchers, academics, and industry professionals.

Later in the day, young scientists from various institutes presented posters covering diverse topics in surface, environmental, and chemical sciences. The evaluation and judgment of these posters were carried out by a panel comprising Prof. A. D. Swant, Prof. Sujit Kumar Ghosh, and Dr. Hemlata Shukla. Notably, three students in the student category received special recognition for their presentations, a result of thorough assessment by experts from different institutes.

In the evening, students from the School of Studies in Chemistry presented a captivating cultural program, showcasing the rich cultural heritage of Chhattisgarh state. Delegates from various parts of the country delighted in the vibrant and diverse cultural offerings of Chhattisgarh.

### **Day 2: Friday, November 24, 2023**

The symposium, marked by intellectual depth and diversity, showcased a spectrum of scientific innovations and breakthroughs. The Syamasree Gupta Memorial Lecture, delivered by Prof. Rajan Patel of Jamia Millia Islamia University, New Delhi, delved into the synthesis and antimicrobial activity of pyrrolidinium-based ionic liquids with melittin. Pallabi Boro from Gauhati University, Guwahati, Assam, received the Best Paper (JSST) Award for her illuminating presentation on the variation of pH and shell thickness in PVA capped CdSe and CdSe/ZnO nanoparticles. Prof. Rakesh Kumar Mahajan from G.N.D.U. Amritsar explored the solubilization behavior of hydrophobic drugs in pure and mixed micelles of Pluronic triblock copolymers in a compelling plenary lecture. The symposium further featured insightful invited lectures by experts such as Prof. Subit Kumar Saha, Dr. Ranjan Kumar Dwari, Dr. Vinod K.

Aswal, Dr. Samik Kumar Hait, Prof. Anjali Pal, and Dr. Santosh Kumar, covering topics ranging from DNA compaction and green surfactants to reentrant phase behavior in charged colloids, nanotechnology innovations, and edible coatings for extending the shelf life of fruits and vegetables. This convergence of diverse perspectives solidified the conference as a hub for cutting-edge research and collaborative exploration in nanotechnology and surfactant science.

A special session dedicated to Environmental Chemistry under the PURSE Project featured 3 impactful special lectures. Prof. Gazala Habib (IIT Delhi) explored aerosol chemical profiles across the Indian subcontinent. Prof. Paromita Chakraborty (SRM Chennai) addressed the Air-Water-Health Nexus for plastic additives, emphasizing challenges in the context of the COVID-19 pandemic. Prof. Shamsh Pervez (S.O.S in Chemistry, PRSU Raipur) presented findings on atmospheric organic aerosols in different environments. This session provided valuable insights into critical environmental issues, showcasing diverse perspectives from esteemed researchers.

The young scientist competition featured 10 concise and impactful oral presentations, offering diverse insights into contemporary chemical research. Topics ranged from the micellization of anti-cancer agents and the efficiency of natural surfactants in crude oil-water emulsions to the degradation of Ciprofloxacin and temperature-dependent micellization studies.

The conference featured succinct invited lectures by Dr. Biswarup Chakraborty on optimizing ionic metal oxide nanocrystals for catalytic applications, Dr. Sabita Patel on PEG-based micellar drug delivery for cancer therapy, and Dr. Gulmi Chakraborty on the morphology and biological relevance of aromatic amino acid-based green amphiphiles. These talks provided concise insights into nanocrystal technology, drug delivery advancements, and green chemistry applications, enriching the conference's scientific discussions.

### **Day 3: Saturday, November 25, 2023**

Prof. B. K. Mishra of Sambalpur University explored the theme "Fantasy Vs Reality in Prediction of Molecular Characteristics" in his Plenary Lecture, offering a Surface Chemist's perspective. Dr. Sujoy Sarkar from VIT Chennai delivered an insightful Invited Lecture on "Nano to Nano," focusing on the ionic strength induced local electrodeposition of ZnO nanoparticles using scanning electrochemical microscopy.

Further, 10 talks by young scientists from different parts of the country presented short invited lectures covering diverse topics such as surface science, environmental science,

nanotechnology, electrochemical methods, thermodynamics, and kinetics. The symposium provided a vibrant platform for knowledge exchange, fostering engaging discussions and potential collaborations among participants. The event not only showcased the latest advancements but also highlighted the interdisciplinary nature of research in surface science and nanotechnology, promising a bright future for these fields.

The online conference featured Prof. Sunil S. Bhagwat discussing "Mixed Surfactant Systems" and Prof. Chien-Hsiang Chang exploring "Characterization of vesicular structures formed of microalgae oils as drug delivery carriers." Invited online lectures included Prof. Saptarshi Mukherjee on "Biomolecule-Drug Interactions: Spectroscopy and Sequestration" and Dr. Kamalakanta Behera on "Ionic Liquid-Protein Interactions within Microheterogeneous Media." The virtual platform facilitated insightful discussions, showcasing the latest advancements in surfactant systems and biomolecular interactions.

The evening's valediction ceremony featured Prof. Rajiv Prakash, Director of the Indian Institute of Technology (IIT), Bhilai, as the Chief Guest. Prof. Sachchidanand Shukla, the honorable Vice-Chancellor of Pt. Ravishankar Shukla University, served as the Patron, with Prof. Asit Baran Mandal as President and Prof. Soumen Ghosh as Secretary of the Indian Society for Surface Science and Technology. The prize winners of the oral and poster presentations were felicitated by the awards and certificates. Recognition was also extended to Prof. Kallol K. Ghosh, Chairperson and Head of the School of Studies in Chemistry, Co-Chairman Prof. Manas Kanti Deb, Prof. Shamsheer Pervez, Prof. Manish K. Rai, the Convenor Dr. Kamlesh Shrivastava, Dr. Manmohan L. Satnami, and the Organizing Secretary Dr. Indrapal Karbhal for their unwavering support.

## Annexure -I

| <b>[A] KEYNOTE SPEAKER</b> |   |   |
|----------------------------|---|---|
| S.No                       | Name & Address  | Title   |
| 1.                         | <b>Prof. D.C. Mukherjee</b><br>Heritage Institute of Technology,<br>Kolkata                               | “A Cursory Glance to the Domain of Colloid and Interface Science.”  |
| <b>[B] PLENARY LECTURE</b> |   |   |
| 2.                         | <b>Prof. Amiya Kumar Panda</b><br>Vidyasagar University, West Bengal                                      | “Physico - Chemical Studies on The Oppositely Charged Mixed Surfactant Systems.”  |
| 3.                         | <b>Prof. Partha Sarathi Mukherjee</b><br>Indian Institute of Science Bangalore                            | “Self-Assembled Functional Molecular Vessels.”  |
| 4.                         | <b>Prof. Tarasankar Pal</b><br>Indian Institute of Technology Kharagpur                                   | “New Discovery Involving Metalloid Arsenic.”  |
| 5.                         | <b>Prof. Rakesh Kumar Mahajan</b><br>Guru Nanak Dev University Amritsar                                   | “Solubilization Behavior of Hydrophobic Drugs in Pure and Mixed Micelles of Pluronic Triblock Copolymers.”  |
| 6.                         | <b>Prof. B. K. Mishra</b><br>Sambalpur University Sambalpur   | “Fantasy Vs Reality in Prediction of Molecular Characteristics: A Surface Chemist Perspective.”   |
| 7.                         | <b>Prof. Sunil S. Bhagwat (ONLINE)</b><br>Indian Institute of Science Education and Research, Pune        | “Mixed Surfactant Systems.”   |
| 8.                         | <b>Prof. Chien-Hsiang Chang (ONLINE)</b><br>National Cheng Kung University, Taiwan                        | “Characterization of vesicular structures formed of microalgae oils as drug delivery carriers.”   |
| <b>[C] INVITED LECTURE</b> |   |   |
| 9.                         | <b>Prof. P. Venkatesu</b><br>Delhi University, New Delhi  | “Smart Anisotropic Colloidal Composites: A Suitable Platform for Modifying the Phase Transition of Diblock Copolymers by Gold Nanoparticles.”                 |
| 10.                        | <b>Dr. Sujit Kumar Ghosh</b><br>Jadavpur University, Kolkata  | “Thematic Design of Plasmonic Field Effect Transistors: Crossing the Milestones.”   |
| 11.                        | <b>Prof. P. A. Hassan</b><br>Bhabha Atomic Research Centre, Mumbai  | “Structure and Dynamics of Supercooled all Solid Micelles.”   |
| 12.                        | <b>Dr. Md. Sayem Alam</b><br>CSIR- Central Leather Research Institute (CLRI), Chennai                     | “Amphiphiles: Fundamental and Applications.”  |
| 13.                        | <b>Prof. Subit Kumar Saha</b><br>Birla Institute of Technology & Science (BITS Pilani), Hyderabad         | “Compaction of Calf Thymus DNA By Some Potential Surfactants in the Presence of Silica Nanoparticles and Applications Toward In Vitro/In Vivo Gene Delivery.” |
| 14.                        | <b>Dr. Ranjan Kumar Dwari</b><br>CSIR- Institute of Minerals and Materials Technology (IMMT), Bhubaneswar | “Green Surfactant: A Way Forward in Froth Flotation Process.”   |
| 15.                        | <b>Dr. Vinod K. Aswal</b><br>Bhabha Atomic Research Centre, Mumbai  | “Observation of Reentrant Phase Behavior in Charged Colloids.”  |

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| 16.                                    | <b>Prof. Anjali Pal</b><br>Indian Institute of Technology, Kharagpur                                    | “Photo-Fenton reaction on Co (II)-anchored admicellar support for dye degradation.”  |
| 17.                                    | <b>Dr. Santosh Kumar</b><br>Central Institute of Technology, Kokrajhar, Assam                           | “Edible Coating as a Solution to Maintain Quality and Extend Shelf-life of Fruits and Vegetables.”   |
| 18.                                    | <b>Dr. Sujoy Sarkar</b><br>Vellore Institute of Technology, Chennai                                     | “Nano to Nano: Ionic Strength Induced Local Electrodeposition of ZnO nanoparticles using Scanning Electrochemical Microscopy.”                               |
| 19.                                    | <b>Prof. Saptarshi Mukherjee (ONLINE)</b><br>Indian Institute of Science Education and Research, Bhopal | “Biomolecule-Drug Interactions: Spectroscopy and Sequestration.”   |
| 20.                                    | <b>Dr. Kamalakanta Behera (ONLINE)</b><br>University of Allahabad, Prayagraj                            | “Ionic Liquid-Protein Interactions within Micro heterogeneous Media: A Spectroscopic Investigation.”   |
| <b>[D] SHORT INVITED LECTURE</b>       |   |  |
| 21.                                    | <b>Dr. Biswarup Chakraborty</b><br>Indian Institute of Technology Delhi, New Delhi                      | “Tuning the Surface or Core of Ionic Metal Oxide Nanocrystals for Photo(electro)catalytic Applications.”   |
| 22.                                    | <b>Dr. Gulmi Chakraborty</b><br>C. V. Raman Global University, Bhubaneswar Odisha                       | “Aromatic amino acids based green amphiphiles: Fascinating morphology and biological relevance”  |
| 23.                                    | <b>Dr. Sourav Das</b><br>The Bhawanipur Education Society College, Kolkata                              | “In-depth examination of interactions between polyelectrolytes and surfactants bearing opposite electrical charges.”   |
| 24.                                    | <b>Dr. Jayanta Kumar Midya</b><br>Jagannath Kishore College, Purulia, West Bengal                       | “Kinetic and mechanistic study of the oxidation of fructose by colloidal MnO <sub>2</sub> in aqueous acidic medium in presence of different micellar media.” |
| 25.                                    | <b>Dr. Bhanushree Gupta</b><br>Centre for Basic Sciences, Pt. Ravishankar Shukla University Raipur      | “Nanoencapsulation of Lemongrass Essential Oil to Boost Bioactivity against Some Common Food Borne Bacteria.”  |
| 26.                                    | <b>Dr. Archana Aastkar</b><br>Government Nagarjuna Post Graduate College of Science, Raipur             | “Thermodynamic And Kinetic Study Of Removal Of Heavy Metals From Waste-Water By Using Albizia Lebbeck.”  |
| 27.                                    | <b>Dr. Santosh Kumar Verma</b><br>Yulin University China  | “Yttrium, Nickel microalloying to activate the regulation of Mg/MgH <sub>2</sub> hydrogen storage.”  |
| 28.                                    | <b>Dr. Manoj Kumar Banjare</b><br>Mahaveer Academy of Technology and Science University Raipur          | “Host-Guest Complexation of Ionic Liquids with $\alpha$ - and $\beta$ -Cyclodextrins: A Comparative Study”   |
| 29.                                    | <b>Dr. Tushar Kant</b><br>Shaheed Kawasi Rodda Pedda Govt. College Kuakonda, Dantewada                  | “Design and Development of Paper-based Sensor Using Nano-Ink: An Electrochemical Approach”   |
| 30.                                    | <b>Dr. Toshikee Yadav</b><br>Centre for Basic Sciences, Pt. Ravishankar Shukla University Raipur        | “Surface Active Ionic Liquids for Solubilization of Polycyclic Aromatic Hydrocarbons (PAHs).”  |
| <b>[E] SPECIAL SESSION (DST PURSE)</b> |   |  |

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| 31.                      | <b>Prof. Gazala Habib</b><br>Indian Institute of Technology, Delhi  | “Aerosol chemical profiles for important emission sources widely spread over Indian subcontinent.”   |
| 32.                      | <b>Prof. Paromita Chakraborty</b><br>SRM Institute of Science and Technology<br>Chennai                                     | “Air-Water-Health Nexus for plastic additives: new challenges related to COVID-19 pandemic.”   |
| 33.                      | <b>Prof. Shams Pervez</b><br>S.O.S in Chemistry, Pt. Ravishankar Shukla<br>University, Raipur                               | “Recent Findings of atmospheric organic aerosols in different environments.”   |
| <b>[F] AWARD LECTURE</b> |   |  |
| 34.                      | <b><u>Dr. Syamasri Gupta Memorial Lecture</u></b><br><b>Prof. Rajan Patel</b><br>Jamia Millia Islamia University, New Delhi | “Synthesis, interfacial parameters and synergistic antimicrobial activity of pyrrolidinium based-ionic liquids with melittin.”                 |
| 35.                      | <b><u>Best Paper (JSST) Award Lecture</u></b><br><b>Ms. Pallabi Boro</b><br>Gauhati University, Guwahati, Assam             | “Effect of Variation of pH and Shell Thickness upon the Optical and Structural Characteristics of PVA Capped CdSe and CdSe/ZnO Nanoparticles.” |

## ANNEXURE -II TECHNICAL PROGRAM

### 21<sup>st</sup> National Conference on Surfactants, Emulsions & Biocolloids (NATCOSEB XXI)

November 23-25, 2023

**Day 1: Thursday, November 23, 2023**

**(VENUE: Pt. Ravishankar Shukla University Auditorium)**

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| 8:00 – 9:30   | Registration  |
| 10:00 – 11:00 | <b>Inauguration</b> (VENUE: Pt. Ravishankar Shukla University Auditorium)   |
| 11:00-11:15   | <b>HIGH- TEA</b>  |
| 11:30 – 12:15 | <b>Chairperson:</b> Prof. D.C. Mukherjee<br><b>Keynote Lecture:</b> Padmashri Prof. G. D. Yadav, Institute of Chemical Technology, Mumbai<br><b>Title:</b> “Selectivity Engineering in Multiphase Catalysis: Role of Microphases, Interfaces and Phase Transfer Catalysis.” |
| 12:15– 12:50  | <b>Chairperson:</b> Prof. S.P. Moulik<br><b>Plenary Lecture</b><br><b>PL-1:</b> Prof. Amiya Kumar Panda, Vidyasagar University, West Bengal,<br><b>Title:</b> “Physico - Chemical Studies on The Oppositely Charged Mixed Surfactant Systems.”                              |
| 13:00 – 14:00 | <b>LUNCH- BREAK</b>   |
| 14:00 – 15:25 | <b>Chairperson:</b> Prof. A D Sawant<br><b>Plenary Lecture</b><br><b>PL-2:</b> Prof. Partha Sarathi Mukherjee, IISc Bangalore<br><b>Title:</b> “Self-Assembled Functional Molecular Vessels.”   |
| 14:00-14:35   | <b>Invited Lecture</b><br><b>IL-1:</b> Prof. P. Venkatesu, Delhi University, New Delhi<br><b>Title:</b> “Smart Anisotropic Colloidal Composites: A Suitable Platform for Modifying the Phase Transition of Diblock Copolymers by Gold Nanoparticles.”                       |
| 14:35-15:00   | <b>IL-2:</b> Dr. Sujit Kumar Ghosh, Jadavpur University, Kolkata<br><b>Title:</b> “Thematic Design of Plasmonic Field Effect Transistors: Crossing the Milestones.”   |
| 15:00-15:25   |   |
| 15:30 - 15:40 | <b>TEA</b>  |
| 15:45 - 17:15 | <b>Chairperson:</b> Prof. Amiya Kumar Panda<br><b>Plenary Lecture</b><br><b>PL-3:</b> Prof. Tarasankar Pal, IIT Kharagpur<br><b>Title:</b> “New Discovery Involving Metalloid Arsenic.”   |
| 15:45 – 16:15 |   |



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| 16:15 – 16:40 | <b>Invited Lecture</b><br><b>IL-3: Prof. P. A. Hassan, BARC, Mumbai</b><br><b>Title: “Structure and Dynamics of Supercooled all Solid Micelles.”</b>  |
| 16:40 – 17:05 | <b>IL-4: Dr. Md. Sayem Alam, CSIR-CLRI, Chennai</b><br><b>Title: “Amphiphiles: Fundamental and Applications.”</b>   |
| 17:00 - 18:30 | <b>POSTER PRESENTATION</b><br><b>Chairpersons: Dr. Atanu Mitra/ Dr. Biswarup Chakraborty</b><br><b>POSTER No.: P1 to P51</b><br><b>(VENUE: First Floor, Pt. Ravishankar Shukla University Auditorium)</b> |
| 18:30 - 20:00 | <b>CULTURAL PROGRAM</b><br><b>(VENUE: Pt. Ravishankar Shukla University Auditorium)</b>   |
| 20:00         | <b>DINNER</b>   |

**Day 2: Friday, November 24, 2023**  
**(VENUE: Sir C.V. Raman Hall, S.O.S in Chemistry)**

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| 9:30-10:00  | <b>Chairperson: Prof. Soumen Ghosh</b><br><b>Dr. Syamasree Gupta Memorial Lecture</b><br><b>Prof. Rajan Patel, Jamia Millia Islamia University, New Delhi</b><br><b>Title: “Synthesis, interfacial parameters and synergistic antimicrobial activity of pyrrolidinium based-ionic liquids with melittin.”</b> |
| 10:00-11:30 | <b>Chairperson: Prof. Asit Baran Mandal</b><br><b>Plenary Lecture</b>   |
| 10:00-10:35 | <b>PL-4: Prof. Rakesh Kumar Mahajan, G.N.D.U. Amritsar</b><br><b>Title: “Solubilization Behavior of Hydrophobic Drugs in Pure and Mixed Micelles of Pluronic Triblock Copolymers.”</b>  |
| 10:35-11:00 | <b>Invited Lectures</b><br><b>IL-5: Prof. Subit Kumar Saha, BITS Pilani, Hyderabad</b><br><b>Title: “Compaction of Calf Thymus DNA By Some Potential Surfactants in the Presence of Silica Nanoparticles and Applications Toward In Vitro/In Vivo Gene Delivery.”</b>   |
| 11:00-11:25 | <b>IL-6: Dr. Ranjan Kumar Dwari, CSIR-IMMT, Bhubaneswar</b><br><b>Title: “Green Surfactant: A Way Forward in Froth Flotation Process.”</b>  |
| 11:30-11:40 | <b>TEA</b>  |

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| 11:40-13:20   | <b>Chairperson: Prof. Pramila Kumari Misra,</b><br><b>Invited Lectures</b>   |
| 11:40-12:05   | <b>IL-7: Dr. Vinod K. Aswal, BARC, Mumbai</b><br><b>Title: “Observation of Reentrant Phase Behavior in Charged Colloids.”</b>  |
| 12:05-12:30   | <b>IL-8: Dr. Samik Kumar Hait, Indian Oil Corporation Ltd, Faridabad</b><br><b>Title: “Nanotechnology Innovations and Commercialization –Challenges and Opportunities: Indian Oil Perspective.”</b>  |
| 12:30-12:55   | <b>IL-9: Prof. Anjali Pal, IIT Kharagpur</b><br><b>Title: “Photo-Fenton reaction on Co (II)-anchored admicellar support for dye degradation.”</b>  |
| 12:55-13:20   | <b>IL-10: Dr. Santosh Kumar, Central Institute of Technology, Kokrajhar, Assam</b><br><b>Title: “Edible Coating as a Solution to Maintain Quality and Extend Shelf-life of Fruits and Vegetables.”</b>   |
| 13:30-14:15   | <b>LUNCH- BREAK</b>  |
| 14:15-14:40   | <b>Chairperson: Prof. Subit Kumar Saha</b><br><b>Best Paper (JSST) Award Lecture</b><br><b>Ms. Pallabi Boro, Gauhati University, Guwahati, Assam</b><br><b>Title: “Effect of Variation of pH and Shell Thickness upon the Optical and Structural Characteristics of PVA Capped CdSe and CdSe/ZnO Nanoparticles.”</b> |
| 14:40-16:00   | <b>SPECIAL SESSION FOR ENVIRONMENTAL CHEMISTRY<br/>(PURSE PROJECT)</b>   |
|               | <b>Chairperson: Prof. Manas K. Deb</b><br><b>Special Lectures</b>  |
| 14:40 – 15:05 | <b>SL 1: Prof. Gazala Habib, IIT Delhi</b><br><b>Title: “Aerosol chemical profiles for important emission sources widely spread over Indian subcontinent.”</b>   |
| 15:05 – 15:30 | <b>SL 2: Prof. Paromita Chakraborty, SRM Chennai</b><br><b>Title: “Air-Water-Health Nexus for plastic additives: new challenges related to COVID-19 pandemic.”</b>   |
| 15:30 – 15:55 | <b>SL 3: Prof. Shamsh Pervez, S.O.S in Chemistry PRSU Raipur</b><br><b>Title: “Recent Findings of atmospheric organic aerosols in different environments.”</b>   |
| 16:00-16:15   | <b>TEA</b>   |
| 16:15-18.15   | <b>Chairpersons: Prof. Bijay Kumar Mishra / Dr. Santosh Singh Thakur</b><br><b>ORAL PRESENTATION (YOUNG SCIENTIST COMPETITION) [12 minutes]</b>  |

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|               | <p style="text-align: center;"><b>PAPER No. 1 to 10</b></p> <p><b>OP -1: Koushlendra Singh Rajput, IEHE Bhopal</b><br/> <b>Title: “Micellization and Dissolution Behaviour of An Anti-Cancer Agent with In Presence of Cationic, Anionic and Neutral Surfactants.”</b></p> <p><b>OP -2: Swetashree Pattanaik, School of Chemistry, Sambalpur University, Odisha</b><br/> <b>Title: “Efficiency of a Natural Surfactant in Pipeline transport of Crude oil-water Emulsions: Revelation of Mechanism and conditions of Stabilizations.”</b></p> <p><b>OP -3: Debasish Pal, IIT Kharagpur</b><br/> <b>Title: “Degradation of Ciprofloxacin Under Ambient Condition in Synthetic and Real Wastewater Using Microporous Ammonium Phosphomolybdate as A Catalyst.”</b></p> <p><b>OP -4: Arnab Banerjee, Presidency University, Kolkata</b><br/> <b>Title: “Temperature-Dependent Micellization of a Surface-Active Ionic Liquid and An Anionic Polyelectrolyte in Aqueous Solution: Insight from Physicochemical and Computational Studies.”</b></p> <p><b>OP -5: Tripathi Nitumani Narendramani, SVNIT Surat</b><br/> <b>Title: “Salt Induced Thermo-Responsive Micellization and Aggregation for Nanostructure Evaluation In PEO-PPO-PEO-Based Block Copolymers.”</b></p> <p><b>OP -6: Shalini Dyagala, Bits Pilani Hyderabad</b><br/> <b>Title: “Compaction of Calf Thymus DNA By A Potential One-Head-Two-Tail Surfactant: Properties Of Nanomaterials And Biological Testing For Gene Delivery.”</b></p> <p><b>OP -7: Maitreyee Mitra, Vidyasagar University, Medinipur</b><br/> <b>Title: “Interfacial Adsorption And Aggregation Behaviour Of Hexadecyltrimethylammonium Bromide In Water-Dioxane Mixed Solvent System.”</b></p> <p><b>OP -8: Sanyukta Bhattacharjee, IIT- PATNA</b><br/> <b>Title: “Osmolytes In Polymeric Environment: Enlightening The Changes In Water Dynamics And Properties Of Polymeric Solution”</b></p> <p><b>OP – 9: Sapna Rooprao Warkari, RTM University, Nagpur</b><br/> <b>Title: “Thermodynamic Studies Of Ethaline And Its Mixture With Water: A Volumetric, Acoustic And Surface Approach”</b></p> <p><b>OP -10: Yogyata Chawre, S.O. S In Chemistry PRSU Raipur</b><br/> <b>Title: “Oxidase Mimicking Activity of Cerium Oxide for the Detection of Neurotransmitter and Pesticide”</b></p> |
| 18.15 -19.00  | <p><b>Short Invited Lecture</b></p> <p><b>Chairperson: Dr. Sujit Kumar Ghosh</b></p>  |
| 18:15 – 18:30 | <p><b>SIL 1: Dr. Biswarup Chakraborty, IIT Delhi</b></p> <p><b>Title: “Tuning the Surface or Core of Ionic Metal Oxide Nanocrystals for Photo(electro)catalytic Applications.”</b></p>  |
| 18:30 – 18:45 | <p><b>SIL 2: Dr. Sabita Patel, NIT Rourkela</b></p> <p><b>Title: “Design and synthesis of PEG based micellar drug delivery vehicles for application in cancer therapy.”</b></p>   |

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| 18:45 – 19:00 | SIL 3: <b>Dr. Gulmi Chakraborty</b> , C. V. Raman Global University, Bhubaneswar Odisha<br><br>Title: <b>“Aromatic amino acids based green amphiphiles: Fascinating morphology and biological relevance”</b> |
| 19:00- 20:00  | AGM (ANNUAL GENERAL MEETING)<br>(VENUE: <b>Sir C.V. Raman Hall, S.O.S in Chemistry</b> )   |
| 20:00         | <b>DINNER</b>  |

**Day 3: Saturday, November 25, 2023**  
(VENUE: **Sir C.V. Raman Hall, S.O.S in Chemistry**)

|               |   |
|---------------|---|
| 9:30 – 11:00  | <b>Chairperson: Prof. Anjali Pal</b>  |
| 9.30 - 10:00  | <b>Plenary Lecture</b><br><b>PL-5: Prof. B. K. Mishra</b> , Sambalpur University<br><br>Title: <b>“Fantasy Vs Reality in Prediction of Molecular Characteristics: A Surface Chemist Perspective.”</b><br>Invited Lecture  |
| 10:00 – 10:25 | <b>IL-11: Dr. Sujoy Sarkar</b> , VIT Chennai<br><br>Title: <b>“Nano to Nano: Ionic Strength Induced Local Electrodeposition of ZnO nanoparticles using Scanning Electrochemical Microscopy.”</b>  |
| 10:30-10:45   | <b>TEA</b>  |
| 10:45 – 11:00 | <b>Short Invited Lecture</b><br><b>Chairperson: Prof. Kamlesh Shrivastava</b><br><b>SIL 4: Dr. Sourav Das</b> , The Bhawanipur Education Society College, Kolkata<br><br>Title: <b>“In-depth examination of interactions between polyelectrolytes and surfactants bearing opposite electrical charges.”</b> |
| 11:00 – 11:15 | <b>SIL 5: Dr. Jayanta Kumar Midya</b> , Jagannath Kishore College, Purulia, West Bengal<br><br>Title: <b>“Kinetic and mechanistic study of the oxidation of fructose by colloidal MnO<sub>2</sub> in aqueous acidic medium in presence of different micellar media.”</b>                                    |
| 11:15 – 11:30 | <b>SIL 6: Dr. Bhanushree Gupta</b> , CBS Pt. R. S. U., Raipur<br><br>Title: <b>“Nanoencapsulation of Lemongrass Essential Oil to Boost Bioactivity against Some Common Food Borne Bacteria.”</b>  |
| 11:30– 11:45  | <b>SIL 7: Dr. Archana Aastkar</b> , Science College Raipur<br><br>Title: <b>“Thermodynamic And Kinetic Study Of Removal Of Heavy Metals From Waste-Water By Using Albizia Lebbeck.”</b>   |

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| 11:45 – 12:00 | SIL 8: <b>Dr. Santosh Kumar Verma</b> , Yulin University China<br>Title: <b>“Yttrium, Nickel microalloying to activate the regulation of Mg/MgH<sub>2</sub> hydrogen storage (ONLINE/OFFLINE).”</b>                                   |
| 12:00 – 12:15 | SIL 9: <b>Dr. Manoj Kumar Banjare</b> , MATS Raipur<br>Title: <b>“Host-Guest Complexation of Ionic Liquids with <math>\alpha</math>- and <math>\beta</math>-Cyclodextrins: A Comparative Study”</b>                                   |
| 12:15 – 12:30 | SIL 10: <b>Dr. Tushar Kant</b> , Govt. College Kuakonda, Dantewada<br>Title: <b>“Design and Development of Paper-based Sensor Using Nano-Ink: An Electrochemical Approach”</b>  |
| 12:30 – 12:45 | SIL 11: <b>Dr. Toshikee Yadav</b> , CBS Pt. R. S. U., Raipur<br>Title: <b>“Surface Active Ionic Liquids for Solubilization of Polycyclic Aromatic Hydrocarbons (PAHs).”</b>   |
| 13:00 – 13:30 | Plenary Lecture (ON LINE)<br>Chairperson: <b>Prof. Atanu Mitra</b><br><br>PL-6 (ON LINE): <b>Prof. Sunil S. Bhagwat</b> , IISER Pune<br>Title: <b>“Mixed Surfactant Systems.”</b>   |
| 13:30 - 14:15 | <b>LUNCH BREAK</b>  |
| 14:00 – 15:30 | Chairperson: <b>Prof. Tarasankar Pal</b><br><br>Invited Lecture (ON LINE)   |
| 14:30 – 14:55 | IL-12 (ON LINE): <b>Prof. Saptarshi Mukherjee</b> , IISER Bhopal<br>Title: <b>“Biomolecule-Drug Interactions: Spectroscopy and Sequestration.”</b>  |
| 14:55 – 15:20 | IL-13 (ON LINE): <b>Dr. Kamalakanta Behera</b> , University of Allahabad, Prayagraj<br>Title: <b>“Ionic Liquid-Protein Interactions within Micro heterogeneous Media: A Spectroscopic Investigation.”</b>                             |
| 15:20 – 15:55 | Plenary Lecture (ON LINE)<br>PL-7 (ON LINE): <b>Prof. Chien-Hsiang Chang</b> , National Cheng Kung University, Taiwan<br>Title: <b>“Characterization of vesicular structures formed of microalgae oils as drug delivery carriers”</b> |
| 16:00         | <b>VALEDICTORY &amp; PRIZE DISTRIBUTION</b>   |

# Inauguration





# First Day Technical Session





# Poster Session



# Cultural Program



## Second Day Program





# Third Day Program



# Valedictory Program







**NEWS PAPER COVERAGE**

**CENTRAL Chronicle**  
 NATION  
 CENTRAL CHRONICLE PAPER, SUNDAY, NOVEMBER 26, 2023

### 21st National Chemistry seminar concludes at RSU

**Research scholars receive awards**

The seminar also celebrated the exceptional contribution of research scholars. First Prize for Young Scientist Award presented to Dr. Anshu Choudhary, RSU, Secular Prize awarded by Anus... (text continues with details of the awards and the seminar's success).

**The Hitavada**  
 21st National Conference on Surfactants, Emulsions and Biocolloids commences

The 21st National Conference on Surfactants, Emulsions and Biocolloids commenced at RSU... (text continues with details of the conference's inauguration and the presence of the Vice-Chancellor).

**नईदुनिया सिटी रायपुर**  
 एक ही मंच पर राष्ट्रीय 40 वें अखिल स्थापना उत्सव

### विज्ञानियों ने नवाचार और खोज का उपयोग देशहित में करने पर दिया जोर

पं. विश्वेश्वर शुक्ल विश्वविद्यालय में तीन दिवसीय राष्ट्रीय रसायन सम्मेलन शुरू, देशभर से शामिल हुए विरोधज्ञान ने दिया व्याख्यान

विज्ञानियों ने नवाचार और खोज का उपयोग देशहित में करने पर दिया जोर... (text continues with details of the national chemistry conference and the role of the university).