Two-days International Conference On

International Conference on Advanced Materials for Green Chemistry and Sustainable Environment

(February 15-16, 2024)

A Brief Report

Organized by

School of Basic and Applied Sciences

K.R. MANGALAM UNIVERSITY

Sohna Road, Gurugram

Venue : Moot Court, 4th Floor, A Block

K.R MANGALAM University

Gurugram, India **Contents**

Preface

The International Conference on Advanced Materials for Green Chemistry and Sustainable Materials (AMGSE-2024) was organized by School of Basic and Applied Sciences, K. R. Mangalam University, Gurugram in collaboration with Indian Science Congress Association (ISCA) Rohtak Chapter and International Association of Advanced Materials, Sweden on February 15-16, 2024, at K R Mangalam University, Gurugram (India). In recent years, the global community has increasingly recognized the urgency of transitioning towards sustainable practices

across all sectors. The field of materials science plays a crucial role in this transition, as it empowers us to develop new materials and processes that minimize environmental impact while maximizing efficiency and performance.

The conference would serve as a platform to encourage networking and the establishment of collaborations among attendees within their respective fields. It also offers opportunities to stay informed about the latest advancements and trends in the industry through keynote presentations, oral sessions, and exhibitions. The overarching goal of the conference is to propel the field of nanotechnology forward by promoting interdisciplinary collaboration and facilitating the exchange of knowledge and ideas.

The creation of advanced materials, distinguished by their unique physical and chemical characteristics and structures, has captured the attention of active researchers worldwide. This focus has gained prominence due to its significant impact on advancing industrial sectors and fostering innovation across various fields, including energy, environment, healthcare, and information technology. The primary objective is to facilitate scientific engagement and discussions among researchers, scientists, and industrialists spanning diverse and expanding domains.

Acknowledgements

We would like to express our sincere gratitude to Prof. R K Sinha, Dean Research; Prof. S. K. Khatkar, HOD, Maharshi Dayanand University, Rohtak; Prof. Meena Bhandari, Dean of School of Basic and Applied Sciences whose support and efforts have been instrumental in the organization and success of the International Conference on Advanced Materials for Green Chemistry and Sustainable Materials.

We extend our appreciation to the esteemed speakers whose expertise and insights have enriched the conference program, sparked thought-provoking discussions and fostering knowledge exchange. We are immensely grateful to the members of the organizing committee for their tireless dedication in coordinating every aspect of the conference, from program development to logistics planning. Their commitment has been invaluable in ensuring a seamless and enriching experience for all participants.

We also extend our thanks to our sponsors, Indian Science Congress Association (ISCA) Rohtak Chapter and International Association of Advanced Materials, Sweden whose generous support has helped make this event possible. Their investment in sustainability initiatives reflects a shared commitment to advancing research and innovation in the field of green chemistry and sustainable materials.

Special thanks are due to the reviewers and volunteers who have contributed their time and expertise to ensure the quality and integrity of the conference proceedings.

Last but not least, we would like to express our gratitude to all the participants for their active engagement and enthusiasm throughout the conference. Your passion for sustainability inspires us all to continue pushing the boundaries of scientific discovery and technological innovation.

Together, we are catalyzing positive change and paving the way towards a more sustainable future.

Title of the conference: International Conference on Advanced Materials for Green Chemistry and Sustainable Environment

Objective of the Conference: The objectives of the International Conference on Advanced Materials for Green Chemistry and Sustainable Materials is multi-faceted and encompasses several key aims:

- Facilitate the exchange of knowledge, ideas, and research findings among experts, researchers, scientists, engineers, and industry professionals in the field of advanced materials for green chemistry and sustainable materials.
- Foster interdisciplinary collaboration between academia, industry, and government agencies to address the complex challenges related to sustainability and green chemistry, leveraging the diverse expertise and perspectives of participants.
- Provide a platform for showcasing cutting-edge research, innovations, and technological advancements in the development of advanced materials with reduced environmental impact and improved sustainability profiles.
- Promote awareness and understanding of the principles of green chemistry and sustainable materials among stakeholders, encouraging the adoption of sustainable practices in research, industry, and society at large.
- Networking and Professional Development: Create opportunities for networking, collaboration, and professional development, enabling participants to establish valuable connections, forge partnerships, and stay abreast of the latest developments and trends in the field.

Overall, the conference aimed to serve as a catalyst for accelerating the transition towards a more sustainable future by promoting the development and adoption of advanced materials and green chemistry principles across various sectors, ultimately contributing to the preservation of natural resources, reduction of environmental pollution, and enhancement of global well-being.

Themes and Sub-Themes of the Conference

The conference themes include, but are not limited to:

Material Science for Energy Applications:

- Emerging Solar Cell Materials
- Advances in Fuel Cell Materials

- Novel Materials for Energy Storage
- Materials for Energy Conversion Technologies

Advanced Nanomaterials: Fabrication, Characterization, and Applications:

- Bottom-Up Nanomaterial Fabrication
- Top-Down Nanomaterial Fabrication
- Advanced Characterization Techniques for Nanomaterials
- Biomedical Applications of Nanomaterials
- Nanomaterials for Electronics and Photonics **Environmental Sustainability in Materials:**

- Green Materials for Water Treatment
- Sustainable Packaging Materials
- Circular Economy: Challenges and Opportunities
- Life Cycle Assessment of Materials
- Sustainable Building Materials **Polymer Matrix Nanocomposites:**

- Nanoparticle Reinforcements in Polymer Composites
- Processing Techniques for Polymer Nanocomposites
- Mechanical Properties of Polymer Matrix Nanocomposites
- Electrical and Thermal Conductivity in Polymer Nanocomposites **Green Catalysis and Nanocatalysts:**

- Biocatalysis for Green Synthesis
- Photocatalysis for Environmental Applications
- Heterogeneous Nanocatalysts
- Sustainable Approaches to Catalysis
- Nanomaterials in Healthcare for Environmental Sustainability:
- Nanomedicine for Disease Diagnosis
- Environmental Impact of Medical Nanomaterials
- Biodegradable Nanomaterials in Healthcare

- Nanotechnology for Environmental Monitoring in Healthcare Facilities

Sustainable Energy Solutions:

- Advanced Materials for Solar Energy Harvesting
- Energy Storage Solutions for Renewable Energy
- Materials for Sustainable Nuclear Energy
- Smart Grid Technologies for Sustainable Energy Distribution • Materials for Energy-Efficient Lighting Systems

Inaugural Function

The inaugural session was honored by the presence of esteemed individuals including Dr. Sushil Kumar, Chief Scientist at CSIR-NPL, New Delhi, who served as the chief guest. Also in attendance were Prof. R. K. Sinha, Vice Chancellor of K. R. Mangalam University, Prof. S. P. Khatkar, Convenor of ISCA Rohtak chapter, and Prof. Vinod Bala Taxak from MDU Rohtak as Guest of Honor. Dr. Ashutosh Tiwari, Director of IAAM Sweden, Dr. Meena Bhandari, organizing head,

and Dr. Chandra Mohan and Dr. Neeraj Kumari, Convenors of AMGSE-2024, were also present. The session commenced with the Saraswati Vandna and Lamp lighting ceremony The session was preceded by Dean Research, Prof. R K Sinha where he welcomed all the dignitaries of the conference. He highlighted the importance of advanced materials in various fields and underscored the importance of sustainable practices in chemistry and environmental conservation. Dr. Sushil Kumar, chief guest of the conference told that we are confronted a myriad of environmental issues, from climate change and pollution to resource depletion and biodiversity loss. These challenges demand bold and innovative solutions, and it is within the realm of advanced materials and green chemistry that we find tremendous potential for transformative change. Advanced materials offer us the opportunity to revolutionize industries and technologies, enabling us to develop products and processes that are more energy-efficient, less resource-intensive, and environmentally benign. From biodegradable polymers to renewable energy materials, the possibilities are endless. Prof. S. P. Khatkar emphasized green chemistry. He explained the role of green chemistry in guiding the individual approach towards sustainability. By embracing the principles of green chemistry—such as waste prevention, the use of renewable feedstocks, and the design of safer chemicals—the environmental impact of chemical processes can be minimized and enhance the overall sustainability of our industries. Dr. Meena Bhandari underscored the importance of individuals in attaining sustainability objectives, emphasizing that accomplishing these goals goes beyond mere technological advancement. She highlighted the necessity for global collaboration, cooperation, and collective efforts, stressing the need to surpass disciplinary confines and unite towards shared aims. Dr. Ashutosh Tiwari, director of IAAM and collaborator of the conference said that the conference is a platform for the participants to unite the experts from all over the world working for the betterment of our planet. In the last, Dr Neeraj Kumari, Convenor of the conference invited all the dignitaries of the conference for opening the abstract book of the conference.

Invited lectures:

Professor Dr. Rakesh Kumar Sharma, representing the Green Chemistry Network Centre at the University of Delhi, delivered a keynote lecture addressing the theme "Green Chemistry Network Centre (GCNC): Integrating Green Chemistry Principles into Academia and Industry." He introduced the Green Chemistry Network Centre (GCNC), an initiative designed to integrate green chemistry principles into both academic and industrial settings. This centre serves as a platform to advocate for sustainable practices and mitigate the environmental impact of chemical processes. Through collaborative efforts among researchers, educators, and industry experts, the GCNC aims to develop and implement innovative green chemistry solutions. These solutions are focused on

reducing waste, preserving resources, and minimizing the use of hazardous substances in chemical processes. By fostering partnerships and facilitating knowledge exchange, the GCNC endeavours to promote the adoption of green chemistry principles across various sectors, thereby advancing a more sustainable and environmentally friendly approach to chemistry.

Another keynote lecture was presented by **Professor Dr. Shatendra K. Sharma** from the Department of Physics at Netaji Subhas University of Technology, New Delhi. His presentation focused on "analytical techniques for material characterization," which delves into the myriad analytical methods utilized for material analysis and characterization in the realms of Nanotechnology and Chemistry. The discussed techniques encompass UV/VIS/IR spectroscopy, FTIR, XRD, X-ray Fluorescence (XRF) Spectroscopy, Transmission Electron Microscopy (TEM), Scanning Transmission Electron Microscopy (STEM), and Atomic Force Microscopy (AFM). Each technique is succinctly elucidated, detailing its operational principles and applications. For instance, UV/VIS/IR spectroscopy is employed to measure light absorption and scattering in samples, particularly useful in characterizing nanoparticles with sensitive optical properties. XRD serves in mineral identification and materials science crystallography, while XRF spectroscopy aids in elemental analysis. TEM and STEM provide high-resolution imaging capabilities, and AFM facilitates atomic-scale surface analysis. These techniques serve as indispensable tools for researchers across diverse scientific disciplines, including physics, chemistry, biology, and engineering.

Dr. Avni Khatkar, a Scientist in the LF, HF Voltage, Current, and Microwave Metrology department at CSIR National Physical Laboratory, New Delhi, India, delivered an invited lecture titled "Empowering Indian Power Grid: Integrating Green Technologies and Real-Time Monitoring using PMUs." In her presentation, she addressed the transition of the Indian power sector towards renewable energy sources to mitigate environmental impact and meet escalating energy demands. Despite significant energy generation capacity, a substantial segment of the population lacks reliable electricity access due to grid inefficiencies and frequent outages. Dr. Khatkar underscored the critical importance of real-time grid monitoring, particularly employing Phasor Measurement Units (PMUs), to tackle these challenges. PMUs enable dynamic grid monitoring, facilitating swift corrective measures during stress periods and outages, and enhancing post-event analysis. The lecture emphasized the evaluation of PMU performance through standardized tests and highlighted their pivotal role in integrating renewables and modernizing the grid towards sustainability. Through accurate measurements, PMUs contribute to outage

prevention, economic loss minimization, and the transformation of the grid into a smart, environmentally friendly system.

Additionally, two speakers delivered their presentations online. **Dr. Sónia Alexandra Correia** Carabineiro from NOVA University of Lisbon, Portugal, presented an online keynote lecture titled "Environmental Catalysis by Gold Nanoparticles." The lecture explores the conversion of gold from an inert substance into a highly efficient catalyst upon transformation into nanoparticles, marking a significant breakthrough in catalysis. Gold nanoparticles, when meticulously dispersed on nanoscale supports, exhibit remarkable catalytic properties across various reactions. The presentation underscores the crucial role of precise preparation techniques in achieving this catalytic efficacy. It delves into diverse methodologies employed for depositing gold nanoparticles onto a range of substrates such as metal oxides and carbon materials. Furthermore, the discussion encompasses the characterization of these nanoparticles and emphasizes their wide-ranging applications in catalysis, notably in the reduction of environmental pollutants such as CO, CO2, volatile organic compounds, and nitrogen oxides. In essence, the presentation underscores the pivotal role of gold nanoparticles in addressing pressing environmental challenges through catalytic processes.

Another online keynote lecture was presented by **Dr. Raviraj Kulkarni,** who serves as the chairman of BOS Nanotechnology at the University of Alberta, Canada. His lecture focused on "Green chemistry routes for nanomaterial synthesis," wherein he discussed environmentally sustainable methods employed for the production of nanomaterials. These methods aim to minimize or eliminate the use of hazardous chemicals while reducing energy consumption and waste generation during synthesis processes. Common strategies highlighted in the discussion include the utilization of benign solvents, renewable feedstocks, and alternative energy sources such as microwave or ultrasound irradiation. By employing green synthesis techniques, nanomaterials with desired properties can be obtained for various applications, thereby mitigating environmental impact and promoting sustainability within the field of nanotechnology.

Following the lectures, distinguished guests, along with the Convenors and Co-Convenors, gathered in the Bosch lab located on the ground floor of A-block for lunch. Meanwhile, participants and other members of the conference organizing committee gathered in the Canteen area of C-Block for lunch. Subsequently, parallel poster and oral presentation sessions took place at different venues.

The poster session was held in the Sunken Garden outside the A-Block Canteen, where 32 participants from different institutes showcased their research work through posters. The

evaluation of these posters was conducted by our esteemed guests, Dr. Avni Khatkar and Prof. (Dr.) R.K. Sharma, along with internal faculty members Dr. Kriti and Dr. Vicky Kapoor of KRMU.

On the first day of the conference, four parallel sessions of oral presentations were held at various locations: B018, B121, B010, and the Moot Court, from 3:00 pm to 4:00 pm.

The four oral presentation sessions encompassed the following themes:

- Advancing Environmental Sustainability: Innovations, Challenges, and Solutions
- Green Chemistry: Innovations for Sustainable Solutions
- Exploration of the Biological Properties and Applications of Nanomaterials
- Advancements in Nanomaterials: Synthesis and Applications

The session in B010 was chaired by Dr. Smita S. Kumar, Faculty of Environmental Science & Engineering, CUH, with co-chairmanship by Dr. Sudesh Neyol, Associate Professor of Chemistry at NCERT, New Delhi. The moderators for this session were Dr. Hemant and Dr. Prabhakar Bhandari from K.R. Mangalam University.

In B018, Dr. Reena, Associate Professor at DPGITM College, Gurugram, chaired the session, while Dr. Bindu Mangla, Associate Professor at the Department of Chemistry, J C Bose University of Science and Technology, Faridabad, served as the co-chair. The session was moderated by faculty members from K.R. Mangalam University.

Dr. Anoop Yadav from the Environment Science Department at Central University of Haryana chaired the session in B121, with co-chair Dr. Vinod Kumar, Associate Professor at the School of Medical & Allied Sciences, G D Goenka University, Gurugram. Moderators for this session were Dr. Surender Kumar Yadav and Dr. Ruby Jindal from K.R. Mangalam University.

A total of 17 participants from various colleges and universities contributed to the oral presentation sessions. Throughout these sessions, participants shared their research findings, innovative technologies, and best practices in the realms of green chemistry and sustainable development. Discussions revolved around the pivotal role of advanced materials in combating environmental pollution, the integration of green chemistry principles into industrial processes, and strategies for fostering circular economy models. All session chairs and co-chairs were presented with mementos and certificates by KRMU faculties to acknowledge their valuable time and effort dedicated to judging the sessions.

Following the presentation sessions, all attendees convened in the Moot Court, where Conference organizing Head Dr. Meena Bhandari delivered concluding remarks for day 1 of the conference. Subsequently, Convenor Dr. Neeraj Kumari extended a vote of thanks to all guests, participants,

and members of the conference team for their dedication and contributions, thus ensuring the success of day 1 of the conference.

The second day of the conference commenced with the esteemed presence of Prof. R. K. Parashar and Prof. S. Kukreti from Delhi University, whose insightful perspectives set the tone for the day's proceedings. Dr. Shalini Anand, representing CFEES-DRDO, Delhi, brought her expertise to the forefront, followed by Prof. Pratima Solanki from JNU, Delhi, whose profound research findings captivated the audience. Dr. Sudesh Neyol from NCERT, Delhi, shared valuable insights, while Prof. Seema Pathak from Amity University, Haryana, provided a comprehensive overview of her research endeavours. Their presentations encompassed a diverse range of topics, illuminating various fields with their expertise, delivered through engaging invited and keynote lectures. Additionally, the conference embraced a global perspective with Dr. Ajay Kumar Mishra from Durban University, South Africa, joined virtually and shared their insights. Despite the virtual setting, his lecture resonated strongly with the audience, fostering interactive discussions during the question-answer sessions.

The commencement of the day-2 of the conference was marked by a warm and gracious welcome extended to all attendees in the distinguished setting of the Moot Court, located on the 4th floor of the A-Block. The speaker, representing the organizing committee, conveyed gratitude to all participants for their presence and emphasized the importance of their contributions to the conference's objectives.

Invited talk

During the online invited presentation delivered by **Dr. Ajay Kumar Mishra** from Durban University, South Africa, the focal point revolved around Nanocomposite Materials for Wastewater Treatment. Nanocomposite materials have emerged as promising contenders in the realm of wastewater treatment, offering innovative solutions to address the escalating environmental challenges. These materials, characterized by their unique composition at the nanoscale, exhibit enhanced properties ideal for efficient pollutant removal from wastewater streams. Incorporating nanoparticles into a composite matrix enhances the overall performance by synergistically leveraging the distinct advantages of each component. Nanocomposites boast high surface area-to-volume ratios, facilitating greater adsorption capacities and catalytic activities, thereby effectively targeting diverse contaminants present in wastewater. Furthermore, their tunable properties allow for tailored designs to meet specific treatment requirements, ensuring

versatility and adaptability across various wastewater compositions. The utilization of nanocomposite materials in wastewater treatment signifies a paradigm shift towards sustainable and eco-friendly solutions, promising significant advancements in mitigating water pollution and safeguarding environmental health for future generations.

Keynote speaker

During the Keynote Lecture delivered by **Dr. Shalini Anand**, Scientist F, CFEES, New Delhi, the focal point revolved around Environment Risk Assessment Framework and Disposal Methodologies for Nanomaterial Waste Sustainable Management. The management of nanomaterial waste poses significant challenges in terms of environmental sustainability and risk mitigation. To address these concerns, the development of an Environment Risk Assessment Framework coupled with efficient disposal methodologies is imperative. This framework encompasses a systematic approach to identify, assess, and manage potential risks associated with the disposal of nanomaterial waste. By integrating principles of environmental science, toxicology, and risk assessment, stakeholders can comprehensively evaluate the environmental impacts of nanomaterial waste and implement appropriate mitigation strategies. Furthermore, the adoption of sustainable disposal methodologies is paramount to minimize adverse environmental consequences. These methodologies encompass innovative techniques such as recycling, reclamation, and controlled incineration, which aim to reduce waste volumes and mitigate environmental contamination. By establishing a robust Environment Risk Assessment Framework and implementing sustainable disposal methodologies, we can effectively manage nanomaterial waste while safeguarding environmental integrity and promoting sustainable practices.

Guest lectures

During the guest lecture presentation delivered by **Dr. Seema Pathak**, Head Department of Chemistry, Amity University, Manesar, the focal point revolved around Therapeutic Potential of Rudraksha. Rudraksha, derived from the seeds of the Elaeocarpus ganitrus tree, holds a significant place in traditional medicine systems, particularly in Ayurveda and traditional Indian practices. Recent scientific studies have shed light on the therapeutic potential of Rudraksha beads. These beads are believed to possess bioactive compounds with anti-inflammatory, antioxidant, and antimicrobial properties. Research suggests that Rudraksha extracts may exhibit anti-cancer properties by inducing apoptosis in cancer cells and inhibiting tumor growth. Furthermore, Rudraksha has been investigated for its neuroprotective effects, potentially offering benefits in the management of neurodegenerative diseases. Additionally, Rudraksha beads are known to have stress-relieving and mood-enhancing properties, making them a potential adjunct in mental health

management. While further research is warranted to fully elucidate the therapeutic mechanisms and potential applications of Rudraksha, these preliminary findings underscore its promising role in holistic healthcare and wellness practices.

Prof. Rakesh Kumar Parashar from the Department of Chemistry, University of Delhi is a respected academic known for his expertise in his field. With a background in Biophysical Chemistry, he has contributed significantly to research and education within the university community and beyond. He shared his expertise on Synthesis of Triazoles appended benzothiazoles and melatonin as LAD inhibitors with promising antifungal activity with the participants. He explained various medical and biological applications of natural compounds with 2-amino-benzothiazole motifs, including anti-bacterial, anti-fungal, anti-HIV, anti-inflammatory, anti-cancer, and anti-convulsant properties. Therefore, utilizing two amino-benzothiazole scaffolds as the basis for new molecules, he designed a new molecule within the context of synthetic method, followed by appropriate modification to produce a variety of compounds with anti-fungal activity. All the synthesized compounds have shown excellent antifungal activity in their minimum concentration. Further, active hybrids have been docked within the active site of sterol 14-α-demethylase enzyme to explore their binding interaction energy and possible interactions with receptor. Accordingly, these findings confirmed that this compound emerged as the most potent fungicide; thereby it might be an excellent drug-like candidate worthy of further pursuit. Comparative analysis of the binding potential of the synthesized molecules and commercially available drug fluconazole revealed a remarkable note: the docking scores for the three designed drugs are much greater than those of the fluconazole molecule.

After the expert sessions, 3 parallel sessions of oral presentations were held at various locations: A213 and Moot Court, from 12:25 to 13:15. The theme of the sessions were Advanced Nanomaterials: Synthesis, Characterization, and Applications, Exploring the Frontier: Smart Energy Nanomaterials, Exploring the Frontier: Environment Sustainability. The session in moot court was chaired by Dr Pratima Solanki, Head Special Centre for Nanoscience, JNU, New Delhi. The moderators of the session were Dr Suman Srivastava and Dr Sujata. During the session, the participants shared their thoughts on different topic like role of mixed metal nitrides-anchored rGO nanohybrid for simultaneously enhancing the anticorrosion and mechanical performance of multifunctional epoxy coatings, modelling of deforestation under effects of population density and environmental sustainability, effect of metal, non-metal and Co-Dopant on optical properties, surface morphology, and crystal structure of titanium dioxide nanoparticles and many more. The presentations provided a wealth of valuable information, and participants demonstrated

commendable defense during the question-and-answer session. The online session was chaired by Dr. Sudesh Neyol, NCERT, Chairperson of the session and moderated by Dr. Prabhakar Bhandari from K.R. Mangalam University. The online session took place at A213 where more than 40 participants from Dubai, Malaysia, and various parts of India presented their work. During the session, the effect of Hydrogen Gas on Titanium Dioxide using Heterostructure H2-TiO2: An abinitio Study was presented where the presentation confirmed both rutile and anatase based H_2-TiO_2 heterostructure and observed comparative variation in diverse properties of Titanium Dioxide due to Hydrogen Gas considering potential application in Hydrogen Fuel based engine and container where TiO_2 is used. Another presenter discussed about the sunstainable energy solutions for Environmental pollution control where the participants compared the advancements of hydrogen fuel cells in India and overseas. The presenter from Malaysia interacted with the participants on bio-waste management: global health concern where the segregation of biodegradable and nonbiodegradable Biomedical wastes should be there.

VALEDICTORY CEREMONY

The valedictory ceremony marked the culmination of AMGSE-2024, which had convened scholars, professionals, and enthusiasts from diverse fields for 2 days, held in Moot Court, Ablock, 4^{th} Floor, the ceremony provided an opportunity to reflect on the achievements, insights, and collaborations forged throughout the conference. The ceremony commenced with opening remarks by Dr. Meena Bhandari (Dean, SBAS), expressing gratitude to all participants for their contributions to the success of the event. She highlighted the significance of the conference in fostering interdisciplinary dialogue, sharing knowledge, and addressing pressing issues within the field. A series of keynote speeches followed, delivered by distinguished speakers who offered reflections on the themes, discussions, and outcomes of the conference. Their insights provided valuable perspectives, inspiring attendees to continue their work and collaborations beyond the conference.

Outstanding contributions and achievements were celebrated through the presentation of awards. Categories included Best Paper and Best Poster Presentation. Recipients were applauded for their exemplary work and dedication. **Best oral/poster presentation awards**

The jury of the session chair and co-chair have selected overall five best oral presentation and three poster presentation awards based on relevance of their work to the conference theme.

S N	Title of talk	Presenter	Affiliation	Award

01	Sustainable Energy Solutions for Environmental pollution control	Jenifer Robinson	University of Technology and Applied Sciences, Muscat, Sultanate of Oman	Oral Presentation
02	Bio-waste management: global health concern	Meena Jha	Lincoln University College, Petaling Jaya, Selangor, Malaysia	Oral Presentation
03	Investigation of InN and ITO Thin Films in SPR Based Fiber Optic Refractive Index Sensor	Dr Vicky Kapoor	SBAS, K R Mangalam University	Oral Presentation
04	MoS_2: An Efficient Multifunctional Environment-Friendly	Ms Priya Gupta	SBAS, K R Mangalam University	Poster Presentation
	Catalyst for Sustainable Chemical Growth			
05	Bio- based planting solutions: harnessing arachis Hypogaea biomass for sustainable gardening practices.	Ms. Manvi	Maharaja Agrasen School, New Delhi	Poster Presentation

In the last, the session was concluded by Dr Neeraj Kumari, Convenor of the conference with vote of thanks. She expressed her gratitude to all participants, volunteers, and staff who had contributed to the success of Conference. The importance of continued collaboration and knowledge exchange was emphasized as essential for addressing the challenges facing the field.

Photo 1: Lamp lighting ceremony during inauguration session

Photo 2: Audience during inaugural ceremony

Photo 3: Conference delegates and convenors during release of abstract book

Photo 4: Dr Avni Khatkar during her invited talk on Microwave Metrology

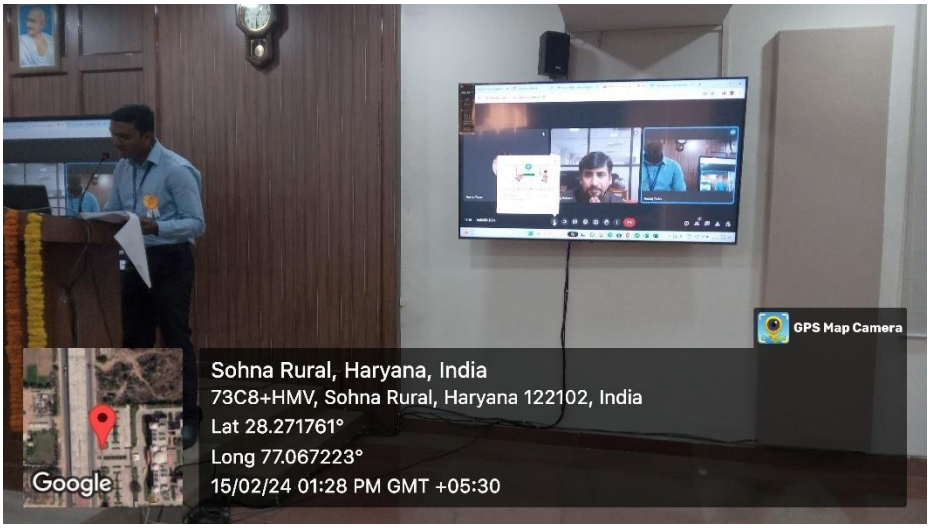

Photo 5: Dr Raviraj Kulkarini during his talk on nanotechnology

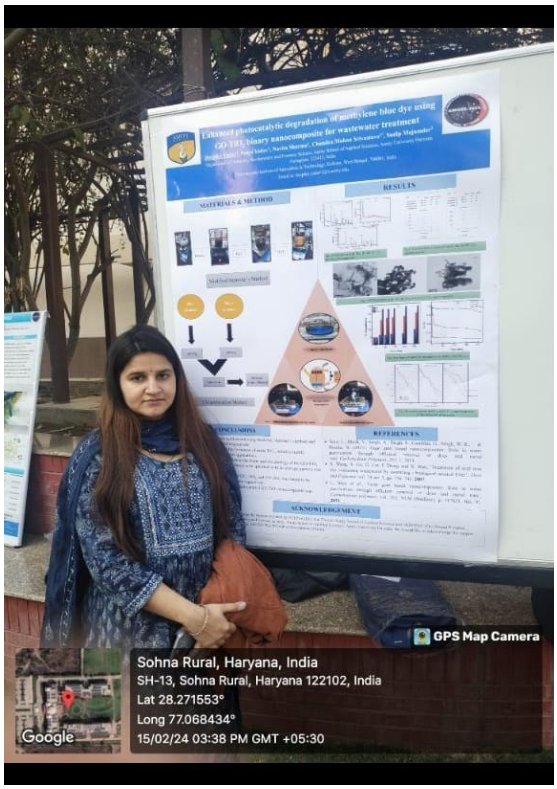

Photo 6: Participant during her poster presentation

Photo 7: Participant during her poster presentation

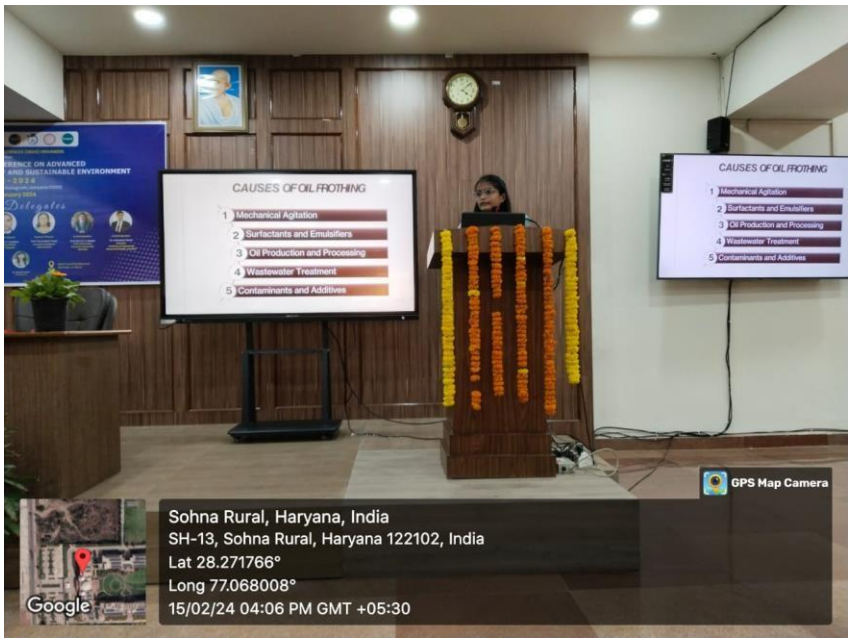

Photo 8: Participant during her oral presentation on first day of the conference

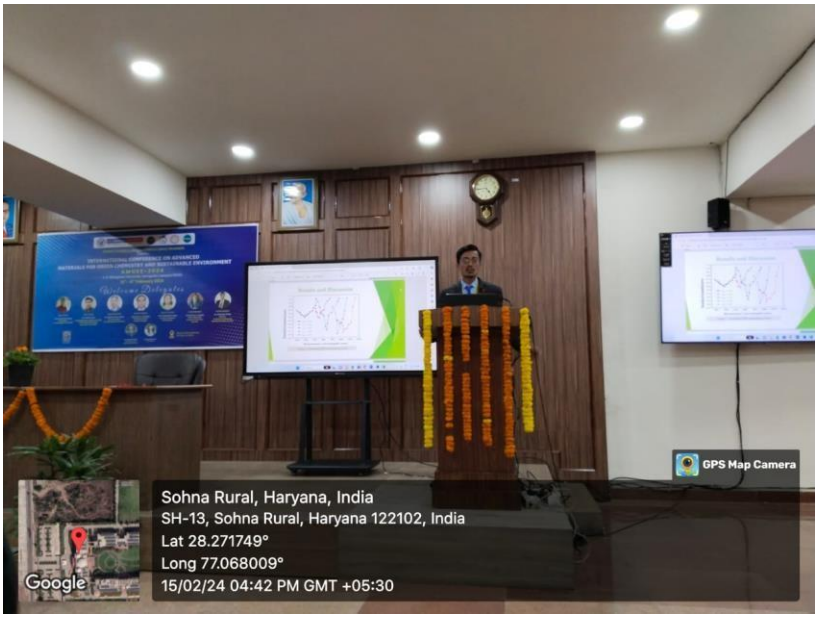

Photo 9: Participant during her oral presentation on first day of the conference

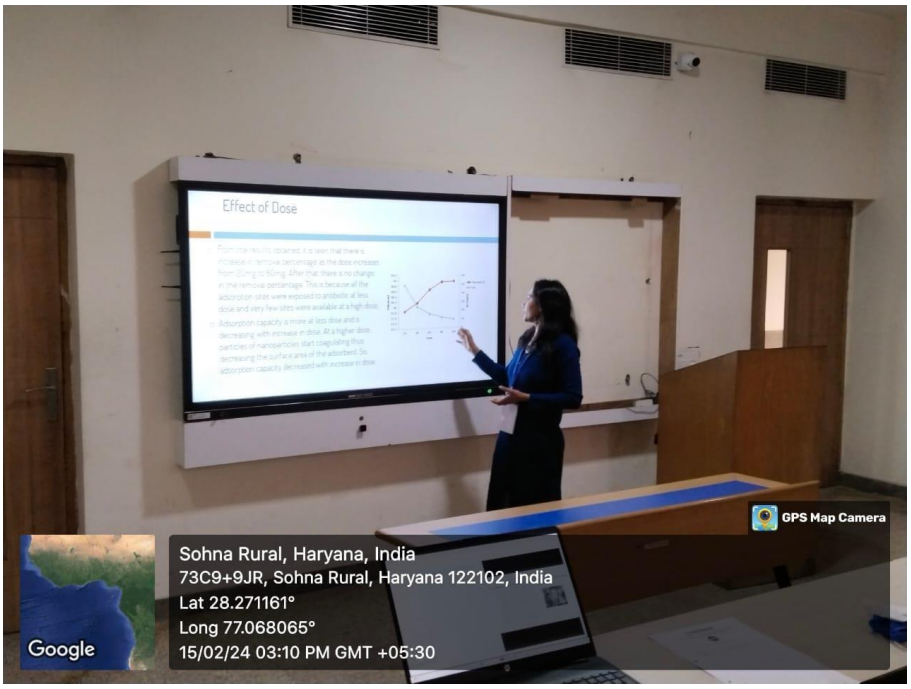

Photo 10: Participant during her oral presentation on first day of the confere

Photo 11: Dr Smita facilitated Dr Anil Kumar as session co-chair

Photo 12: Dr Arvind Negi deliver his talk online on second day of his conference

Photo 13: Dr Shailini Anand during her talk on Environment Risk Assessment Framework and Disposal Methodologies

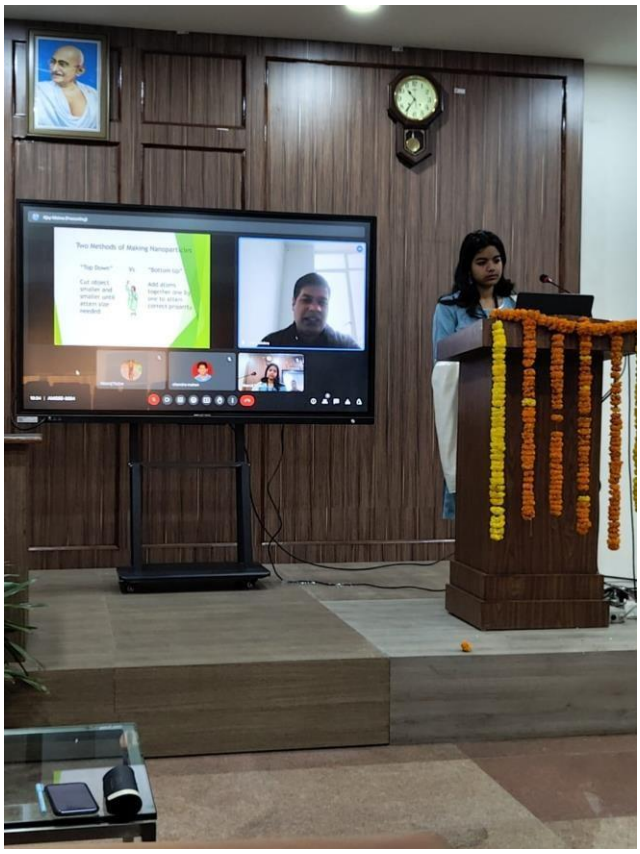

Photo 14: Dr Ajay Kumar Mishra during his talk on Nanocomposite Materials for Wastewater Treatment

Photo 15: Moderator and session chair during online presentation of the participants during second day of the conference

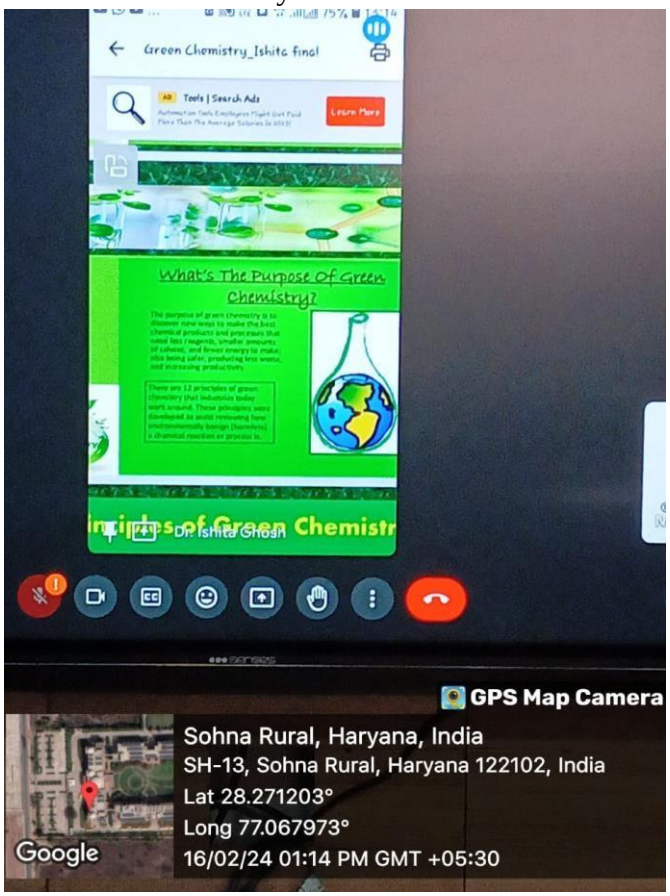

Photo 16: Participant during online presentation of the participants during second day of the conference

Photo 17: Prof R K Parashar during his talk on Triazoles appended benzothiazoles and melatonin

Photo 18: The chief guest and delegated of conference distributed best oral presentation award

Photo 19: The chief guest and delegated of conference distributed best poster presentation award