



**Report on
International Conference
On
“Advancement in Sustainable Materials for Energy
and Environment”
(ASMEE-2023)**

October 6th & 7th, 2023

Venue: CIPET-IPT, Raipur

Organized by:

**Central Institute of Petrochemicals Engineering & Technology (CIPET)
Institute of Petrochemicals Technology (IPT), Raipur**

Supported by:



**Department of Chemicals and Petrochemicals
Ministry of Chemicals and Fertilizers
Govt. of India**



**Science and Engineering Research Board (SERB)
Ministry of Science and Technology
Govt. of India**



**Chhattisgarh Council of Science & Technology
Govt. of Chhattisgarh**

About the Conference :

Currently, the world-wide humanity is passing through globally environment and energy crisis and facing challenges which need a concerted attention by the Governments, International Communities, Academicians, Researches, Industrialist and creative individuals. The International Conference on “**Advancement in Sustainable Materials for Energy and Environment (ASMEE 2023)**” was organized by Central Institute of Petrochemicals Engineering & Technology: Institute of Petrochemicals Technology (CIPET: IPT), Raipur during October 6th& 7th, 2023 in offline mode. ASMEE-2023 aimed to promote scientific information, interchange of research advances and technologies addressing emerging trends and challenges for the generation of new ideas and establish research and/or business links for progressive advances in sustainable material for energy and more importantly environment issues relevant to Sustainability in line with G20 theme.

Objective of the Conference:

The main objective of this international conference is:

- To create valuable and important platform for sharing the forefront of advanced sustainable material development for environment and energy.
- To address the priorities in sustainable polymeric materials to face the energy & environmental challenges ahead
- To spark innovative ideas by a wide range of expert speakers, policy makers and scientific leaders.
- To provide a platform for academia, industries, institutions for dissemination of applied knowledge among stakeholders.

Thrust Area of the conference :

- Functional and Smart polymeric Materials for Green Energy & Sustainable Environment.
- Nanomaterials for sustainable energy and environmental remediation.
- Migration and transformation of materials for sustainable development.
- Materials for carbon capture, storage and utilization.
- Nanomaterials for mitigation of water and air pollution.
- Energy and Carbon Neutrality.
- New energy materials, such as materials for solar energy, wind energy, geothermal, fuel cell, batteries, super capacitor etc.
- Renewable Feedstock.
- Plastic Waste Management and Circular Economy.
- Innovative Recycling Strategies.
- Alternatives to Single use Plastics.

- Strategies for reliable and sustainable power generation.
- Emerging Technologies for confronting the environmental impact by power sector & steel Industry.

After various deliberations, 22 invited speakers (including speakers from India and abroad) as per **Annexure 'I'** were finalized. A brochure was prepared and widely circulated to all reputed institutions, organizations, and industries to solicit contributory papers and posters. The brochure and program schedule of the conference is attached as **Annexure 'II'** and **Annexure 'III'**, respectively.

CIPET-IPT, Raipur received a very positive response from the presenters, and 43 research papers were selected for oral presentation, while 29 papers were chosen for poster presentation.

The conference preparations began with the call for abstracts on the website www.asmee2023.com. Total 110 abstracts were received, of which 72 were selected. The next step was the call for papers, and out of the 72 submissions, 43 were selected for oral presentations and 29 for poster presentations. These selections were included in the Conference Proceedings.

The conference implemented a rigorous peer-review process for all submitted manuscripts. This process began with an initial screening, where manuscripts with serious scientific flaws or those falling outside the scope of the conference were rejected. Manuscripts meeting the minimum criteria were then sent to domain experts for thorough review. The review process was single-blind, meaning the reviewers remained anonymous to the authors. Reviewers were tasked with determining the acceptance or rejection of the submitted paper, along with providing suggestions to enhance its quality. Upon receiving the review reports, authors were notified of the decision regarding acceptance or rejection.

Inaugural Session

The Inaugural session of the Conference on was held on **October 6th, 2023 9.30 AM**, wherein the following dignitaries were present

- **Prof. (Dr.) K. K. Pant**, Director, Indian Institute of Technology Roorkee
- **Prof. (Dr.) Shishir Sinha**, Director General, Central Institute of Petrochemicals Engineering & Technology
- **Shri S. S. Bajaj**, Director General, Chhattisgarh Council of Science & Technology, Govt. of Chhattisgarh
- **Prof. (Dr.) Rajeev Prakash**, Director, Indian Institute of Technology Bhilai
- **Prof. (Dr.) N.V. Ramana Rao**, Director, National Institute of Technology Raipur.

Many Senior Central & State Govt. officials, various scientists, faculties, research scholars & students from reputed institutes/organizations, renowned industrialists and press & media representatives were also present in the conference.



The commencement of the conference's inaugural session has commenced with the ceremonial lighting of a lamp, in the esteemed presence of all distinguished individuals. **Dr. Alok Sahu, Director & Head, CIPET: IPT, Raipur** welcomed all the dignitaries on the dias in a traditional way. In his welcome speech, he briefed about conference theme and journey of ASMEE-2023.

Prof. (Dr.) Rajeev Prakash, Director, IIT Bhilai congratulated CIPET Raipur for organising the international conference on the field which is a measure concern for society. He further expressed need to initiate a collaborative project between CIPET, Raipur and IIT Bhilai to develop biodegradable solutions for plastics, including PET bottles, and to work on recycling plastic of waste materials.

Shri S. S. Bajaj, Director General, Chhattisgarh Council of Science & Technology Raipur, Govt. of Chhattisgarh, expressed that the CIPET: IPT, Raipur, established with support of Govt. of Chhattisgarh and the Government of India now become a full-fledged centre and now organising International Conference on “Advancement in Sustainable Materials for Energy and Environment (ASMEE 2023) at CIPET: IPT, Raipur and congratulated the team of CIPET. He further advocated that as CIPET is having many high-end test equipments & machineries, they should work on project like eliminating single-use plastics and finding alternative etc.

Prof (Dr.) Shishir Sinha, Director General, CIPET highlighted the need of such International Conference on burning issue of Energy and environment. He emphasized that conference will serve as a platform for experts, researchers, academics, industry leaders, and policymakers from all corners of

the globe to come together, exchange ideas, and pave the way for innovative solutions in the realm of sustainable materials for energy and the environment. He told that, over the next two days, we will engage in stimulating discussions, share cutting-edge research, and foster collaborations that can shape the future of our planet positively. He conveyed his best wishes to organizers.

❖ *Keynote Speaker*



Prof. (Dr.) K. K. Pant

Director

Indian Institute of Technology Roorkee

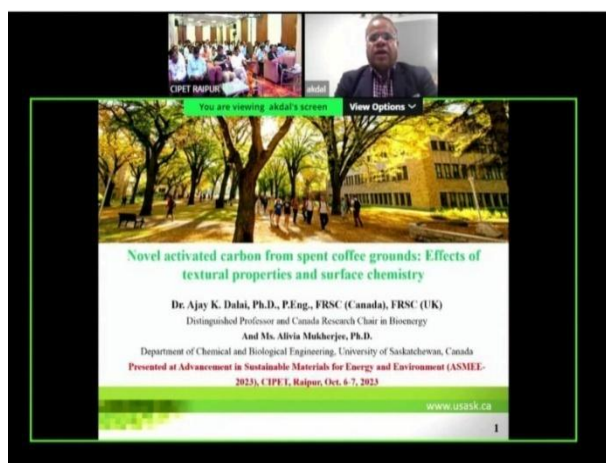
Research Area:

Fuel from Waste Biomass and Waste Plastic, CO₂ conversion technologies, Green Technologies for Sustainable Energy and Environment.

Title of paper:

“Emerging Trends in Sustainable Carbon Management materials: Challenges and Opportunities.”

❖ *International Speaker*



Dr. Ajai K. Dalai,

Professor

Chemical and Biological Engineering, University of Saskatchewan, Saskatoon, Canada

Research Area:

Chemical reaction design; Heterogeneous catalysis; Biomass and bioenergy; Petroleum processing; Sustainable energy

Title of paper:

“Novel activated carbon from spent coffee grounds: Effects of textural properties and surface chemistry.”



Dr. Kumar Patchigolla,

Reader

Carbon Capture and Storage Centre, Cranfield, Bedfordshire

Research Area:

Biomass and Waste, Carbon Capture and Storage Carbon, Climate and Risk Computing, Solar Power Conventional & Advanced Fuels. Renewable Energy

Title of paper:

“Net Zero Engineering: Materials Perspective”

❖ National Speaker

Dr. Sushanta Banerjee,
Professor

Materials Science Centre,
Indian Institute of Technology Kharagpur,
Research Area : Polymer synthesis,
Fluorinated high performance polymers,
Conductive polymers, polymeric membranes
Title of Paper: High-Performance Polymer-Membranes For Clean and Sustainable Energy: Gas Separation and Fuel-Cell Applications



Dr. D. S Bag,
Scientist-G

Defense Materials and Stores Research & Development Establishment (DMSRDE)
DRDO, Ministry of Defense,
Government of India, Kanpur
Research Area: Polymer and composite Materials, Nanocomposites for defense application
Title of Paper: “Smart and Self-healing Materials: Sustainable Materials’ Solution”



Prof. (Dr.) N V Ramana Rao
Director

National Institute of Technology Raipur
Research Area: Civil and Structural Engineering, Development of Sustainable Construction Materials
Title of Paper: “Recent Advances in Concrete and Sustainable Materials for Construction”



Ms. Bonya Mukharjee,
General Manager

Energy Management Department,
Bhilai Steel Plant, SAIL, Bhilai
Research Area: Energy Accounting and Energy Audit of Integrated Steel Plants
Title of Paper: “Emerging technologies for confronting environmental impact by steel Industries”



Dr. G L Devnani,
Professor

Department of Chemical Engineering,
HBTU Kanpur, Uttar Pradesh
Research Area: Natural Fiber Reinforced Polymer Composites
Title of Paper: “Environment Friendly Natural Fiber based Green Composites: Future Materials for Sustainable development”





Dr. Bhoje Gowd E,
Sr. Principal Scientist & Professor
 Materials Science & Technology Division,
 CSIR – NIIST Trivandrum,
Research Area: Polymer Physics,
 Nanostructured Materials, Polymer
 Crystallization, Block copolymers, Porous
 Polymers.
Title of Paper: “Hierarchically Architected
 Semicrystalline Polymer Aerogels”



Dr. O. P Pandey,
Professor
 Thapar University, Patiala, Punjab
Research Area : Metal matrix composites,
 Nanomaterials, energy materials,
 functionalized materials, heterogenous
 catalysis, Solid oxide fuel cells, Targeted
 drug delivery systems, Fluorescence
 materials
Title of Paper: “Waste Polymers – A source
 for energy devices.”



Dr. Babasaheb R. Sankapal
Professor
 Department of Physics,
 Visvesvaraya National Institute of
 Technology, Nagpur.
Research Area: Materials Science,
 Supercapacitor, Solar Cells, Gas Sensor
Title of Paper: “Smart advanced
 nanomaterials: Device grade colourful solar
 cell and flexible solid state supercapacitor”



Prof. Naveen Navani
Professor
 Department of Biotechnology,
 Indian Institute of Technology Roorkee.
Research Area: NanoBiotic Materials,
 Microbes' mediated bioremediation of
 polluted environments, Microbial
 Biotechnology and Nanobiotechnology
Title of Paper: “An Efficient recyclable
 catalytic nano platform for the detection,
 removal and disintegration of xenobiotics in
 water”



Shri Rajeev Kumar Dwivedi,
Director
 TTRC, LOHIA-Corp, Kanpur
Research Area : Plastics Product
Title of Paper: “Plastics Waste recycling – Need
 for Standardization



Dr. Sanjib Banerjee

Associate Professor & Head,
Department of Chemistry,
Indian Institute of Technology Bhilai
Research Area : Polymer Chemistry,
Biomaterials, Stimuli-responsive Materials,
CO₂ Capture, Energy Storage Technologies
Title of Paper:“Functional porous polymers
for CO₂ capture applications”



Dr. Samir Bajpai

Professor,
Department of Civil Engineering
National Institute of Technology Raipur
Research Area: Environmental Engineering/
Water, Wastewater Treatment, Environmental
Management, Air pollution Monitoring
& Modelling. Solid Waste Management
Title of Paper: Assessment of impact of
materials for evaluating the sustainability of
building construction using LCA.



Dr. Jai Gopal Goel

Director
Indian Institute of Thinking Technology
Panchkula, Hariyana
Research Area : Motivational & spiritual
speaker, Mind nurturer, thinking technology
trainer
Title of Paper: Positive thinking technique
concept towards better life



Dr. Smita Mohanty,

Director & Head (Principal Scientist)
CIPET: SARP –LARPM, Bhubaneswar
Research Area : Polymer Composites,
Nanocomposites, Recycling & Waste
Management, Biopolymers
Title of Paper:“Plastic carry bags - A
preference or choice: Life cycle assessment
(LCA) in Indian perspective and
methodological decisions”



Mr. Sanjeev Kumar Saxena,

General Manager
NTPC Raipur
Research Area : Sustainable Ash and FGD
Gypsum Utilization
Title of Paper:“Sustainable ash and FGD
gypsum utilization in NTPC”

❖ Participant / Audience Photographs



❖ Contributory Speaker

Dr. Pranali Nikam,

College of Dairy Science & Food Technology, DSVCKV, Raipur

“Gold Nanoparticles based Sensing System for Colorimetric Detection of Hg ++ in Water and Milk Samples”

Dr. Bhawana Jain,

Siddhachalam Laboratory, Raipur

“Antibacterial and Photocatalytic Degradation via Zn-B-Cyclodextrin Nanocomposite”

Dr. Sharda Bharti,

NIT Raipur

“Synthesis And Characterization of Bimetallic Cu/Zn Chitosan Nanocomposite for Enhanced Antimicrobial Activity”

Dr. Shashi Kant Tiwari,

Indira Gandhi Krishivishva Vidyalaya, Raipur, Chhattisgarh (C.G.)

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| <p><i>“Bound Rubber Properties of Chlorobutyl Elastomer Nanocomposites: Effect of Carbon Nano-Graphite Loading and Storage Time”</i></p> |
| <p>Dr. Reecha Sahu, Amity Institute of Biotechnology, Amity University, Chhattisgarh <i>“Fabrication of Keratin-ZnO Nanoparticle Nanogel as a Sustainable Wound Dressing Material”</i></p> |
| <p>Sarvaree Bano, Rungta College of Engineering & Technology, Bhilai <i>“Environmental and Medicinal Applications of Organically Synthesized Cu and CuO Nanoparticles”</i></p> |
| <p>Akansha Singhai, Amity University, Raipur <i>“Revolutionizing Wound Healing: Harnessing the Power of Nanogels”</i></p> |
| <p>Sapna Jain, College of Dairy Science & Food Technology, DSVCKV, Raipur <i>“Nanotechnology Based Edible Packaging in Food Industry: A Sustainable Approach”</i></p> |
| <p>Dr. K. A. Rajesh, CIPET: IPT, Kochi <i>“Additive Manufacturing of Sustainable Products Based on Polylactic Acid/Thermoplastic Polyurethane Compatibilised Blends”</i></p> |
| <p>Dr. Parv Nayak, College of Food Technology, IGKV, Raipur Chhattisgarh <i>“Possibilities of Developing Biodegradable Packaging Film from Mango Kernel Starch: A Review”</i></p> |
| <p>Dr. Kush Kumar Nayak, Amity Institute of Biotechnology, Amity University Chhattisgarh <i>“Eco-Friendly Tea Bag: Sustainable Paper-Based Sachets from Banana Stem and Grasses”</i></p> |
| <p>Baba Linkanmani Sahoo, CIPET: SARP-LARPM, Bhubaneswar <i>“Sustainable polymeric films: Exploring the Effects of Chain Extender and Nucleating Agent on Polylactic acid (PLA) and Polyhydroxybutyrate (PHB) based Blown Films”</i></p> |
| <p>Kharsheed Ahmed, Indira Gandhi National Tribal University, Amarkantak, MP <i>“Green Synthesis of SnO_2 and Au Doped SnO_2 Via Delonix Regia Flower, Characterization and Its Electrochemical Studies”</i></p> |
| <p>Abhishek Chandel, Thapar Institute of Engineering and Technology, Patiala, Punjab <i>“Conversion of ZrO_2 to ZrC using waste polymer as Carbon Source”</i></p> |
| <p>Bhanendra Sahu, Indian Institute of Technology Bhilai <i>“Functional Diblock Copolymers with Dual Responsiveness Enabled by Recyclable photoRDRP”</i></p> |
| <p>Dr. S C Shit, Ex-Principal Director, CIPET <i>“The Scientific Approaches to Mechanical Recycling of Plastics Waste”</i></p> |
| <p>Dr. P. C Padhi, CIPET: IPT, Bhubaneswar <i>“An Experimental Investigation of Wood Polymer Composite (WPC) for Manufacturing “LOUVERS” using Recycled Polypropylene (RPP) as Polymer Matrix”</i></p> |
| <p>Mahendra Shrivastava, School of Energy and Environment Management, RGPV, Bhopal <i>“Recent Development in Biomass as A Fuel: A Review”</i></p> |
| <p>Selvi K, CIPET, IPT-Kochi</p> |

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|---|
| <p>“Conjugated Polymer Nanoparticles for Pathogen Detection for Real-time Monitoring of Water Quality”</p> <p>Dr. Rajesh Panda, CIPET:IPT, Ahmedabad</p> <p>“The Influence of Phenalkamine on the Structural and Mechanical Properties of Epoxy Systems with a Focus on Tribological Behavior”</p> |
| <p>Dr. G Nag Bhargavi, Govt. Pt. Shyamacharan Shukla College Dharsiwa, Raipur</p> <p>“Investigation of Structural, Optical And Dielectric Properties of Europium and Gadolinium Modified Barium Zirconium Titanate Ceramic”</p> |
| <p>Kowsika Murugesan, CIPET: SARP- APDDRL, Bengaluru</p> <p>“Super Capacitive Behaviour of CuO/Polypyrrole Nanocomposite Decorated with Zinc Oxide Nanoparticle”</p> |
| <p>Kukil Sharma, NIT, Raipur</p> <p>“Integration of Sustainable Materials and Architectural Design for Energy-Efficient Buildings”</p> |
| <p>Dr. Ganesh Prasad Shukla, Guru Ghasidas University, Bilaspur</p> <p>“Exploring the Relationship Among Drivers and Green Technologies: A Theoretical Study”</p> |
| <p>Dr. B. L. Sinha, Indira Gandhi Krishi Vishva Vidyalaya, Raipur</p> <p>“Energy Utilization Pattern Of Muskmelon (Cucumismelo) Production Under Drip Irrigation System”</p> |
| <p>Stephen Jose, CIPET: IPT, Kochi</p> <p>“Green Synthesis of ZnO Nanoparticles from Lemon Peel and its Photophysical Characteristics for Light Emitting Diodes (LEDs)”</p> |
| <p>Roshni Pattanayak, CIPET:SARP-LARPM, Bhubaneswar</p> <p>“A Sustainable Development of Modified Cellulose Acetate Formulation For Health and Hygiene Application”</p> |
| <p>Malaya Ranjan Parida, SARP-LARPM::CIPET, Bhubaneswar</p> <p>“Plasma Treated Bio Derived Fillers Reinforced Flame Retardant Thermoplastic Composites: A Study on Mechanical, Thermal, Morphological, Acoustic and Flammability Characteristics”</p> |
| <p>Satyabrata Sahoo, Ravenshaw University, Cuttack</p> <p>“Evaluating the Effects of Sterilization Techniques on Biomedical Plastic Wastes: Implication for Recycling”</p> |
| <p>Rakhi Pal, CIPET:IPT, Bhubaneswar</p> <p>“To Produce A Polyethylene Terephthalate (PET) from Polyethylene Terephthalate (PET) Waste By Chemical Recycling Process”</p> |
| <p>Tanu Nirwan, CIPET: IPT, Ahmedabad</p> <p>“Upcycling of Citrus Fruit Pomace Biowaste via Chemical Treatment”</p> |
| <p>Soumyadeep Bera, Centre for Interdisciplinary Sciences, (JISIASR), Kolkata</p> <p>“Effectiveness of TMTD in Selective Devulcanization of EPDM Wastes: An Energy Efficient Approach”</p> |
| <p>Ms. Ambika Joshi, Assistant Professor, CIPET Raipur</p> |

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| <p>“Elastomer (NBR/SBR)Based Sustainable Materials for Defense Applications”</p> <p>Dr. Jitendra Sinha, IGKV Raipur</p> <p>“Innovative Strategy for Environment Friendly Reuse of Food Packets”</p> |
| <p>Mr. Rijan Sahu, Kalinga University, Raipur</p> <p>“Analysis of Renewable Source of Energy Which is Biodiesel Blended With Diesel”</p> |
| <p>Aanchal Chandrakar, S. V. College of Agril. Engg. and Tech & RS, IGKV Raipur</p> <p>“Design and Development of Solar Powered Smart Vertical Tower Hydroponics System using Nutrient Film Technique”</p> |
| <p>Manoj Kumar Mallick, SARP-LARPM:CIPET, Bhubaneswar</p> <p>“Randomly Embedded Quaternary Metal in Porous Activated Carbon As A Counter Electrode for Dye-Sensitized Solar Cells Under Dim-Light Effect”</p> |
| <p>Shailoneil Sahu, NIT Raipur</p> <p>“Blue-green Infrastructure– An Opportunity for Sustainable India”</p> |
| <p>Pooja Priyadarsini, CIPET:SARP-LARPM, Bhubaneswar</p> <p>“Preparation and Characteristic Analysis of Extruded Blown Guar Gum Based PBAT/PLA Composite Film”</p> |
| <p>Swati Kumari, CIPET: IPT, Ahmedabad</p> <p>“Sustainable Carbon Filler for Rubber Compounds with Comparable Mechanical Properties to Standard Carbon Black”</p> |



❖ *Poster Presenters*

| Name of Presenter | Title of Paper |
|---|---|
| Dr. Ravishankar Lanjhiyana <i>IGKV Raipur</i> | “A Review on Waste Tyres Through Different Ways in Horticulture” |
| Ankush Koundal <i>CIPET: IPT, Ahmedabad</i> | “Replacement of Conventional Wood Pulp with Agricultural Waste for Rayon Fiber Production” |
| Sarang D., Ginni Gitika, C. K. Paikra, Pophaly, A.K. Tripathi <i>College of Dairy Science & Food Technology, DSVCKV, Raipur</i> | Microbiological Safety of Edible Products: Sustainability of Food for Human Consumption |
| Harshvardhan Rajpurohit <i>CIPET: IPT, Ahmedabad</i> | Polymeric Based Biomaterial Used as Orthopaedics and Dental Applications: A Review |
| Jivan Jyoti <i>Kalinga University</i> | Enhancing the Property of Flexible Pavement (FP) With the Application of Waste Plastic Materials (WPM) |
| Kritika <i>CIPET: IPT, Ahmedabad</i> | Environmentally Sustainable Wastewater Treatment and Power Generation Utilizing Semi-Crystalline Copper Oxide/Sodium Alginate Grafted Polypyrrole Composite |
| Mayank <i>CIPET: IPT, Ahmedabad</i> | Extraction of Carboxymethylcellulose from Water Hyacinth as a Reinforcement for Bio Based Plastic |
| Ms. Payal Sahu <i>Amity University Chhattisgarh, Raipur</i> | Biochar Industry: The Tool of Climate Change Mitigation to Circular Bioeconomy Approach |
| Ruchi Tomar <i>CIPET: IPT, Ahmedabad</i> | Assessing the Influence of Calcium Carbonate in Recycled Glass Fiber-Reinforced Polypropylene (GFRPP) Composites |
| Vishwajeet Kshirsagar <i>CIPET: IPT, Ahmedabad</i> | To Manufacture a Biodegradable Film by Using Sugarcane Bagasse as a Raw Material |
| Sankalp Tiwari <i>Kalinga University Raipur</i> | Fabrication and Comparison of Wear Rate of Al ₂ O ₃ And ZrO ₂ Based Ceramic Composite Material |
| Ujala <i>CIPET: IPT, Ahmedabad</i> | Graphene Quantum Dots: Features of Photoluminescence (PL of GQD) |
| Tusharkanta S Nayak, <i>CIPET: SARP-LARPM, Bhubaneswar</i> | Development and Property Analysis of Polyurethane/Strontium Titanium Oxide Composite for Biomedical Applications |
| Vargobi Mukherjee, <i>Amity University Chhattisgarh, Raipur</i> | Exopolysaccharide (EPS) is an emerging tool for bioremediation in heavy metals absorption |
| Aditya Sharma <i>CIPET: IPT, Ahmedabad</i> | Thermo-Mechanical Exploration of PEEK and Surface Activated PI-Sized Carbon Fiber (PICF) with Atmospheric Dielectric Barrier Discharge (ADBBD) |
| Vismay Pujari <i>CIPET: IPT, Ahmedabad</i> | Study of Hygroscopicity on the Mechanical Properties of Natural Functionalized Sisal Fiber |
| Sudhanshu Kumar, Vinayak Shukla <i>CIPET: IPT, Ahmedabad</i> | Enhancing Mechanical, Thermal, and Morphological Properties of PP/POM Blend Nanocomposites Through Nanoclay Incorporation |

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| Pranshula Panigrahi <i>CIPET:SARP-LARPM, Bhubaneswar</i> | Probing Diketopyrrolopyrrole (Dpp) Materials via Substitute Identity: A Comprehensive Electrochemical and Photophysical Study |
| Neha Singla <i>CSIR-National Physical Laboratory</i> | Synthesis of Hydrophobic and Electroactive PolyanilineBased Coatings for Anticorrosion Application |
| Rahul Saha <i>CSIR-National Physical Laboratory</i> | Synthesis of E-Waste Derived Self-Cleaning Coating Compositions |
| Pooja Mohapatra <i>Burla Orissa</i> | Synthesis and Analysis of PVDF/PANI Nanocomposites Enhanced with Mxene/F-SWCNT Hybrid Nanofillers for Electromagnetic Interference Shielding and Electrochemical Device Applications |
| Sumi Vincent <i>CIPET:SARP-LARPM,Bhubaneswar</i> | Sustainable and Antibacterial Chitosan-Cellulose-Based 3D Printable Composites for Potential Healthcare Applications |
| Yashwant Kumar Sahu <i>CV Raman University Raipur</i> | Plastics Waste Management:Threats and Opportunity: A Study with Respect to Bilaspur Municipal Corporation |
| Sanjana Das, Aman Kumar Gupta, Yagyadeep <i>CIPET: IPT Raipur</i> | Agronomic Sprayable mulch films by Biowaste |
| Atul Dubey, Astha Patel, Pushkar Tiwari <i>CIPET: IPT Raipur</i> | Conversion of Single Use Plastic (Thermocol) into Synthetic Fiber Using an Agro-waste |
| Nidhi Chandrakar <i>Amity Institute of Biotechnology, Amity University Chhattisgarh</i> | Biofilm: A Future Approach for Bioremediation on Environmental Adulteration |
| Ashish Raghavan, Smita Mohanty <i>CIPET:SARP-LARPM,Bhubaneswar</i> | Sustainable Energy Harvesting: Triboelectric Generators Utilizing Recycled PVC and PP from Biomedical Plastic Waste |
| Dilip Sahu, R S Singh, A K Singh <i>Govt. V.Y.T. PG. Autonomous College, Durg</i> | Reinforcement of Multiwalled Carbon Nanotube in Microcellular Silicone Elastomer: In Comparison with Nano-Graphite |



❖ *Industry Networking Meet*

An Industry Networking meet was also organized during the International Conference on 6th October 2023, chaired by **Dr. Sushil Kumar Verma, Former Director General of CIPET**, and co-chaired by **Shri R. K. Dwivedi, Director TTRC of Lohia Corp Kanpur**. The event was attended by more than 65 industries. Various technical and eco-commercial matters were discussed during the meet.



❖ *Incubator / Start-Up Meet*

An incubator/startup meet was also organized under the Chairmanship of **Dr. Prakash Biswas, Professor & Head, Department of Chemical Engineering, IIT Roorkee** and Co-chaired by **Shri Sumit Kumar, Head, MSME Raipur**. Around 22 incubators/startups participated in this meet.



❖ *Valedictory Function*

The valedictory session was held on 7th October, 2023. **Prof. (Dr.) Shishir Sinha, Director General CIPET** appreciated the organizing team to conduct the whole conference flawless. He congratulated all the winners who got prize in oral/poster presentation. Awards for the Best Oral and Poster Presentations were presented to the selected participants. He emphasized that CIPET should continue to organize such programs in future which enhances the brand image of CIPET. **Dr. Alok Sahu, Director & Head, CIPET:IPT Raipur** and Convener of ASMEE 2023, expressed his sincere thanks to all the team members for their continuous hard work for past many weeks to organize this conference successfully. The Program was coordinated by **Mr. Nitesh Kumar Jain, Officer (P&A)**.



❖ Conclusion

In conclusion, the International Conference on “Advancement in Sustainable Materials for Energy and Environment” was a resounding success, bringing together a diverse group of participants from around the world who shared a common passion for addressing the critical challenges of sustainability and environmental preservation. With a total of more than 100 participants, including 43 oral and 29 poster presentations, this conference provided a valuable platform for the exchange of ideas, knowledge, and innovative research.

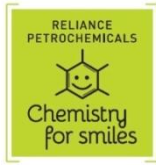
Throughout the conference, we witnessed the collaborative spirit of researchers, scientists, and professionals who are dedicated to advancing sustainable materials and technologies. The oral presentations offered in-depth insights into cutting-edge research, while the poster presentations showcased a wide array of exciting projects and ideas.

Discussions during the conference were not only intellectually stimulating but also fostered connections and collaborations among participants. The diverse range of topics covered, from renewable energy resources to eco-friendly materials, demonstrated the multidisciplinary nature of the field and the collective effort required to address the complex challenges facing our environment.

As we move forward, let us carry the momentum from this conference into our ongoing research and collaborative endeavors, with the shared goal of creating a more sustainable and environmentally friendly future for all.

❖ Our Sponsors

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International Conference on

“Advancement in Sustainable Materials for Energy and Environment” (ASMEE 2023)

October 6th – 7th, 2023

Venue: CIPET: IPT Raipur

List of Invitees

| <u>Keynote Speaker</u> | | | |
|--------------------------------------|---|--|---|
| S. No | Name & Designation | Research/ Expertise Area | Affiliated Department and Institute |
| 1. | Dr. K. K. Pant, <i>Director & Professor</i> | Fuel from Waste Biomass and Waste plastic, CO ₂ conversion technologies, Green Technologies for Sustainable Energy and Environment, | Department of Chemical Engineering Indian Institute of Technology, Roorkee |
| <u>International Speakers</u> | | | |
| 2. | Dr. Ajai K. Dalai, <i>Professor</i> | Chemical reaction design; Heterogeneous catalysis; Biomass and bioenergy; Petroleum processing; Sustainable energy | Chemical and Biological Engineering, Saskatoon, Canada , University of Saskatchewan, Saskatoon |
| 3. | Dr. Kumar Patchigolla, <i>Reader</i> | Biomass and Waste, Carbon Capture and Storage Carbon, Climate and Risk Computing, Solar Power Conventional & Advanced Fuels. Renewable Energy | Carbon Capture and Storage Centre, Cranfield , Bedfordshire |
| <u>National Speakers</u> | | | |
| 4. | Dr. Vimal Katiyar, <i>Professor</i> | Synthetic and Natural Polymers, Polymer Processing, Bio-thermoset, Nano-biocomposite, Organic Solar Cells | Department of Chemical Engineering Indian Institute of Technology Guwahati |

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| 5. | Prof Prakash Biswas <i>Professor & Head</i> | Design and synthesis of nanostructured materials as shape and size selective catalyst for the conversion of CO ₂ and methane to hydrogen/synthesis gas, (MOFs) catalyst for hydrogen production and CO ₂ capturing, Green catalytic process | Head of Chemical Engineering Department, Indian Institute of Technology Roorkee |
| 6. | Dr. Sushanta Banerjee, <i>Professor</i> | Polymer synthesis, Fluorinated high performance polymers, Conductive polymers,,polymeric membranes | Materials Science Centre, Indian Institute of Technology Kharagpur, |
| 7. | Prof. D. S. Arya <i>Professor</i> | Hydrological data analysis, surface water modelling, urban hydrological systems, climate impacts on water resources using hydrological modelling tools | Department of Hydrology, Indian Institute of Technology Roorkee |
| 8. | Dr. D. S Bag, <i>Scientist-G</i> | Polymer and composite Materials, Nanocomposites for defense application | Defense Materials and Stores Research & Development Establishment (DMSRDE)DRDO, Ministry of Defense, Government of India, Kanpur |
| 9. | Dr. N V Ramana Rao <i>Director</i> | Civil and Structural Engineering, Development of Sustainable Construction Materials | NIT Raipur |
| 10. | Ms. Bonya Mukharjee, <i>General Manager</i> | Energy Accounting and Energy Audit of Integrated Steel Plants | Energy Management Department, Bhilai Steel Plant, SAIL,Bhilai, |
| 11. | Dr. G L Devnani, <i>Associate Professor</i> | Natural Fiber Reinforced Polymer Composites | Department of Chemical Engineering, HBTU East Campus, Nawabganj, Kanpur, Uttar Pradesh 208002 |
| 12. | Dr. Bhoje Gowd E, <i>Sr Principal Scientist and Professor</i> | Polymer Physics, Nanostructured Materials, Polymer Crystallization, Block copolymers, Porous Polymers | Materials Science & Technology Division, CSIR - NIIST Trivandrum, |
| 13. | Dr. O. P Pandey, <i>Professor</i> | Metal matrix composites, Nanomaterials, energy materials, functionalized materials, heterogenous catalysis, Solid oxide fuel cells, Targeted drug delivery systems, Fluorescence materials | Thapar University, P.O. Box 32, Bhadson Road, Patiala, Punjab, |

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| 14. | Mr. Krishana Joshi, <i>Managing Director</i> | Polymers, Compounding, Setting up of plastics & chemical industries | Wavin Vectus, Orbia Group, Noida |
| 15. | Dr. Babasaheb R. Sankapal <i>Professor</i> | Materials Science, Supercapacitor, Solar Cells, GasSensor | Department of Physics , VNIT, Nagpur |
| 16. | Prof. Naveen Navani <i>Professor</i> | Nano Biotic Materials, Microbes' mediated bioremediation of polluted environments, Microbial Biotechnology and Nanobiotechnology | Department of Biotechnology, Indian Institute of Technology Roorkee. |
| 17. | Shri Rajeev Kumar Dwivedi, <i>Director</i> | Plastics product manufacturing and standardization | TTRC, LOHIA-Corp Kanpur |
| 18. | Dr. Sanjib Banerjee <i>Associate Professor & Head,</i> | Polymer Chemistry, Biomaterials, Stimuli-responsive Materials, CO2 Capture, Energy Storage Technologies | Dept. of Chemistry, Indian Institute of Technology Bhilai |
| 19. | Dr. Samir Bajpai <i>Professor</i> | Environmental Engineering/ Water, Wastewater Treatment, Environmental Management, Air pollution Monitoring & Modelling. Solid Waste Management | Civil Engineering Department National Institute of Technology Raipur |
| 20. | Dr. Jai Gopal Goel <i>Director</i> | Motivational & spiritual speaker, Mind nurturer, thinking technology trainer | Indian Institute of Thinking Technology, Panchkula |
| 21. | Dr. Smita Mohanty, <i>Director & Head (Principal Scientist)</i> | Polymer Composites, Nanocomposites, Recycling & Waste Management, Biopolymers | LARPM, CIPET Bhubaneswar |
| 22. | Mr. Sanjeev Kumar Saxena, <i>General Manager</i> | Sustainable Ash and FGD Gypsum Utilization | NTPC Raipur |

CONFERENCE BROCHURE

ASMEE-2023







INTERNATIONAL CONFERENCE ON
“Advancement in Sustainable Materials
for Energy and Environment”
ASMEE-2023
6th & 7th, OCTOBER 2023

Organized By
 केंद्रीय पेट्रोसायन अभियांत्रिकी एवं प्रौद्योगिकी संस्थान (सिपेट) रायपुर
 Central Institute of Petrochemicals Engineering & Technology
 (Formerly Central Institute of Plastics Engineering & Technology)
 CIPET : IPT, Raipur


Supported By
 Department of Chemicals & Petrochemicals
 Ministry of Chemicals & Fertilizers
 Govt. of India

Deadline for Abstract Submission
 5th September 2023

Last Date of Registration
 15th September 2023

About Conference

Currently, the world-wide humanity is passing through global environment and energy crisis and facing challenges which need a concerted attention by the Governments, International Communities, Academicians, Researchers, Industrialist and creative individuals. The International Conference on “Advancement in Sustainable Materials for Energy and Environment (ASMEE 2023)” is being organized by Central Institute of Petrochemicals Engineering & Technology: Institute of Petrochemicals Technology (CIPET: IPT), Raipur during October 6th & 7th, 2023. ASMEE-2023 aims to promote scientific information, interchange of research advances and technologies addressing emerging trends and challenges for the generation of new ideas and establish research and / or business links for progressive advances in sustainable material for energy and more importantly environment issues relevant to Sustainability in line with G20 theme. The conference will feature key note invited speakers from renowned Academicians/Researchers/Scientists in respective disciplines, contributed oral papers, and poster presentations.

Objective of Conference

- ✦ To provide a platform for academia, industries, institutions for dissemination of applied knowledge among stakeholders.
- ✦ To spark innovative ideas by a wide range of expert speakers, policy makers and scientific leaders.
- ✦ To address the priorities in sustainable polymeric materials to face the energy & environmental challenges ahead
- ✦ To create valuable and important platform for sharing the forefront of advanced sustainable material development for environment and energy.

Thrust Area of Conference

- ▶ Functional and Smart polymeric Materials for Green Energy & Sustainable Environment.
- ▶ Nanomaterials for sustainable energy and environmental remediation
- ▶ Migration and transformation of materials for sustainable development
- ▶ Materials for carbon capture, storage and utilization
- ▶ Nanomaterials for mitigation of water and air pollution
- ▶ Energy and Carbon Neutrality
- ▶ New energy materials, such as materials for solar energy, wind energy, geothermal, fuel cell, batteries, super capacitor etc.
- ▶ Renewable Feedstock
- ▶ Plastic Waste Management and Circular Economy
- ▶ Innovative Recycling Strategies – Recycle, Reuse, Reduce, Rethink.
- ▶ Alternatives to Single use Plastics
- ▶ Strategies for reliable and sustainable power generation
- ▶ Emerging Technologies for confronting the environmental impact by power sector & steel Industry

About CIPET

Central Institute of Petrochemicals Engineering & Technology (CIPET) (formerly known as Central Institute of Plastics Engineering & Technology) is a premier academic institution for higher & technical education under the Department of Chemicals and Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India having its head office at Chennai & various centres across the country. CIPET is fully devoted in Academics, Research, Technology Support, and Skill Training.



CIPET centre at Raipur is established with joint support of Govt. of India & Govt. of Chhattisgarh & in 2015. CIPET, Raipur center is equipped with state-of-the-art facilities in the areas of Design, CAD/CAM/CAE, Tooling, Mould Manufacturing, Plastics Processing, Testing and Quality Assurance and also accredited with ISO 9001:2015 QMS, NABL, NABCB.



Who should attend this?

Conference provides an opportunity for academicians, scholars, researchers, industry persons, and policy makers with different backgrounds to discuss their experience, new ideas and research outcomes in the forum of experts and speakers.

The conference committee highly encourages participation of PhD and PG students to present their research work, or literature review, or findings, case studies etc. in the broad spectrum of themes.

Committee Members

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Director General, CIPET

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President,
CG Plastics Association, Raipur

Shri Sumit Kumar
Head, BIS, Raipur

Shri S. Rajeev
Head, MSME, Raipur

Dr. K. N. Pandey
Ex Scientist, DMSRDE, Kanpur

Call for Abstract

ASMEE-2023 welcomes high-quality, cutting-edge research on materials and technology for sustainable energy and environment particularly encourages original, novel fundamental, and engineering research covering the mentioned thrust area of this International Conference. The document should consists the following contents:-

- ❑ Title should be in bold Arial 16 font.
- ❑ Author names should be in Arial 14 font and affiliation in Arial 12 font
- ❑ The presenting author should be underlined
- ❑ Abstract should not be more than 250 words.
- ❑ Doc file. Abstract should be prepared in A4 size paper.
- ❑ The line spacing should be 1.5 and the font size is 12 with Arial style.
- ❑ The abstract should include 3-5 keywords that define the subject matter.
- ❑ The general guideline/ template for abstract can be downloaded from website.

Abstract should be submitted at conference website (www.asmee2023.com).

Acceptance of abstracts shall be intimated through email after scrutinizing by subject experts & will be published in journal of repute.

POSTER PRESENTATION

- ❑ The poster should be printed before attending the conference.
- ❑ E-poster will also be accepted.
- ❑ The poster should be in English and portrait orientation size of A1 (23.4 x 33.1 inches).
- ❑ The title of the poster and name of authors should be placed at the top of the poster.
- ❑ The author's names, emails and address should be highlighted & the name of the presenting author should be underlined.
- ❑ All diagrams and paragraphs should be neatly prepared and readable
- ❑ Different colors and textures/symbols should be used for each line or bar contained in the graph or chart.
- ❑ Authors have complete freedom in displaying their information in figures, tables, text and photographs.
- ❑ The finalized poster should also be submitted in Portable
- ❑ Document Format (.pdf) at website : www.asmee2023.com

The best oral papers and posters will be awarded at the closing function of the conference.

Registrations & Contacts

TECHNICAL COMMITTEE

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Registration Details

| | |
|---|------------|
| Students (B.Tech,M. Tech.,M. Sc.) | 500/- INR |
| Research Scholars | 1500/- INR |
| Faculty/Academicians | 2000/- INR |
| Delegates from Industries/R&D Organizations | 3000/- INR |
| Foreign Delegates | 250/- USD |

REGISTRATION INSTRUCTIONS

Please make sure in which category you can apply for registration. Fee should be paid in advance prior to registration. DD / NEFT / UTR No. should be filled into the registration form. In case of any query regarding, feel free to contact us.

FOR MORE INFO

visit our website : www.asmee2023.com

Scan here to REGISTER



VENUE:

CIPET : Institute of Petrochemicals Technology (IPT),
Plot No. 48, Industrial Area Bhanpuri,
Near Urkura Railway Station, Bhanpuri,
Raipur - 493221 (Chhattisgarh)
Email: asmee2023@cipet.gov.in



International Conference On

“ADVANCEMENT IN SUSTAINABLE MATERIALS FOR ENERGY AND ENVIRONMENT”

(ASMEE-2023)

October 6th & 7th, 2023

Program Schedule

| Day 1: 6 th October, 2023 | |
|--|------------------|
| Registration | 8:00 hrs onwards |
| Inaugural Session | 9:15-10:15 hrs |
| Keynote Address: Prof. K. K. Pant, Director, IIT Roorkee | 10:15-11:00hrs |
| High Tea | 11:00-11:15 hrs |

| Session-I | |
|---|-----------------|
| Venue (Hall-I, Seminar Hall, 3 rd Floor) | 11:15-13:15 hrs |
| Invited Talks | Time |
| Session Chairperson: Dr. Prakash Biswas, Professor, IIT Roorkee | |
| Dr. D. S. Bag, Scientist-G, DMSRDE Kanpur <i>“Smart and Self-healing Materials: Sustainable Materials Solution”</i> | 11:15-11:45hrs |
| Dr. Vimal Katiyar, Professor, IIT Guwahati <i>“Microplastics: Another Threat for Human Health?”</i> | 11:45-12:15 hrs |
| Dr. Sanjib Banerjee, Associate Professor, IITBhilai, Raipur <i>“Functional Porous Polymers for CO₂ Capture Applications”</i> | 12:15-12:45 hrs |
| Prof. N.V. Ramana Rao Director, National Institute of Technology Raipur <i>“Recent Advances in Concrete and Sustainable materials for Construction”</i> | 12:45-13:15 hrs |
| Lunch Break | 13:15-14:00 hrs |

| Session-II | |
|---|-------------------------|
| Venue (Hall-I, Seminar Hall, 3rd Floor) | 14:00-16:20 hrs |
| Session Chairpersons: Prof. D. S. Arya, Professor, IIT Roorkee Dr. Amit Keshav, Associate Professor, NIT Raipur | |
| Invited Talks | Time |
| Dr. Kumar Patchigolla, Reader, Carbon Capture and Storage Centre, Cranfield, Bedfordshire <i>“Net Zero Engineering: Materials Perspective”</i> | 14:00-14:30 hrs |
| Dr. Naveen Navani, Professor, IIT Roorkee <i>“An Efficient Recyclable Catalytic Nano Platform for the Detection, Removal and Disintegration of Xenobiotics in Water”</i> | 14:30-15:00 hrs |
| Contributory Lectures (Theme: Nano-composites & Smart Polymeric Materials) | |
| Pranali Nikam, College of Dairy Science & Food Technology, DSVCKV, Raipur <i>“Gold nanoparticles based sensing system for colorimetric detection of Hg⁺⁺ in water and milk samples”</i> | 15:00-15:10 hrs |
| Dr. Bhawana Jain, Siddhachalam Laboratory, Raipur <i>“Antibacterial and Photocatalytic Degradation via ZnO-B-Cyclodextrin Nanocomposite”</i> | 15:10- 15:20 hrs |
| Dr. Sharda Bharti, NIT Raipur <i>“Synthesis And Characterization of Bimetallic Cu/Zn Chitosan Nanocomposite for Enhanced Antimicrobial Activity”</i> | 15:20- 15:30 hrs |
| Dr. Shashi Kant Tiwari, Indira Gandhi KrishivishvaVidyalaya, Raipur, Chhattisgarh (C.G.) <i>“Bound Rubber Properties of Chlorobutyl Elastomer Nanocomposites: Effect of Carbon Nano-Graphite Loading and Storage Time”</i> | 15:30- 15:40 hrs |
| Dr. ReechaSahu, Amity Institute of Biotechnology, Amity University, Chhattisgarh <i>“Fabrication of Keratin-ZnO nanoparticle Nanogel as a sustainable wound dressing material”</i> | 15:40- 15:50 hrs |
| SarvareeBano, Rungta College of Engineering & Technology, Bhilai <i>“Environmental and Medicinal Applications of Organically Synthesized Cu and CuO Nanoparticles”</i> | 15:50- 16:00 hrs |
| Akansha Singhai, Amity University, Raipur <i>“Revolutionizing Wound Healing: Harnessing the Power of Nanogels”</i> | 16:00-16.10 hrs |

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| Sapna Jain, College of Dairy Science & Food Technology, DSVCKV, Raipur <i>“Nanotechnology Based Edible Packaging in Food Industry: A Sustainable Approach”</i> | 16:10-16:20 hrs |
| Venue (Hall-III, Video Conference Hall, 2nd Floor) | 14:00-16:10 hrs |
| Session Chairpersons: Dr. Vimal Katiyar, Professor, IIT Guwahati, Dr. Smita Mohanty, Principal Scientist, CIPET:LARPM, Bhubaneswar | |
| Invited Talks | Time |
| Dr. O. P. Pandey, Professor, Thapar University, Patiyala <i>“Waste Polymers – A Source for Energy Devices”</i> | 14:00-14:30 hrs |
| Dr. Bhoje Gowd E, Senior Principal Scientist & Professor, CSIR-NIIST, Trivandrum <i>“Hierarchically Architected Semicrystalline Polymer Aerogels”</i> | 14:30-15:00 hrs |
| Contributory Lectures (Theme: Materials from Renewable Feedstock) | 15:00-16:10 hrs |
| Dr. K. A. Rajesh, CIPET:IPT, Kochi <i>“Additive Manufacturing of Sustainable Products Based on Polylactic Acid/Thermoplastic Polyurethane Compatibilised Blends”</i> | 15:00-15:10 hrs |
| Dr. Parv Nayak, College of Food Technology, IGKV, Raipur Chhattisgarh <i>“Possibilities of Developing Biodegradable Packaging Film from Mango Kernel Starch: A Review”</i> | 15:10- 15:20 hrs |
| Dr. Kush Kumar Nayak, Amity Institute of Biotechnology, Amity University Chhattisgarh <i>“Eco-Friendly Tea Bag: Sustainable Paper-Based Sachets from Banana Stem and Grasses”</i> | 15:20- 15:30 hrs |
| Baba Linkanmani Sahoo, CIPET: SARP-LARPM, Bhubaneswar <i>“Sustainable polymeric films: Exploring the Effects of Chain Extender and Nucleating Agent on Polylactic acid (PLA) and Polyhydroxybutyrate (PHB) based Blown Films”</i> | 15:30- 15:40 hrs |
| Khrsheed Ahmed, Indira Gandhi National Tribal University, Amarkantak, MP <i>“Green synthesis of SnO₂ and Au Doped SnO₂ via Delonix regia flower, characterization and its electrochemical studies”</i> | 15:40- 15:50 hrs |
| Abhishek Chandel, Thapar Institute of Engineering and Technology <i>“Conversion of ZrO₂ to ZrC using waste polymer as Carbon Source”</i> | 15:50- 16:00 hrs |
| Bhanendra Sahu, IIT Bhilai <i>“Functional Diblock Copolymers with Dual Responsiveness Enabled by Recyclable photo RDRP”</i> | 16:00-16:10 hrs |

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| Tea Break | 16:30-16:45 hrs |
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| Session-III | |
|---|-----------------|
| Venue (Hall-I, Seminar Hall, 3 rd Floor) | 16:45-17:55 hrs |
| Session Chairpersons: Dr. Bhoje Gowd E, Senior Principal Scientist & Professor, CSIR-NIIST, Trivandrum Mr. Sumit Kumar, Head, BIS, Raipur | |
| Invited Talks | Time |
| Mr. Rajeev Dwivedi Director (TTRC), Lohia Corp, Kanpur <i>“Plastics Waste recycling – Need for Standardization”</i> | 16:45-17:15 hrs |
| Contributory Lectures (Theme: Waste Management & Recycling) | |
| Dr. S C Shit, Ex-Principal Director, CIPET <i>“The Scientific Approaches to Mechanical Recycling of Plastics Waste”</i> | 17:15-17:25 hrs |
| Dr. P. C Padhi, CIPET: IPT, Bhubaneswar <i>“An Experimental Investigation of Wood Polymer Composite (WPC) for Manufacturing "LOUVERS" using Recycled Polypropylene (RPP) as Polymer Matrix”</i> | 17:25-17:35 hrs |
| Mahendra Shrivastava, School of Energy and Environment Management, RGPV, Bhopal <i>“Recent Development in Biomass as A Fuel: A Review”</i> | 17:35-17:45 hrs |
| Selvi K, CIPET, IPT-Kochi <i>“Conjugated Polymer Nanoparticles for Pathogen Detection for Real-time Monitoring of Water Quality”</i> | 17:45-17:55 hrs |
| Venue (Hall-III, Video Conference Hall, 2 nd Floor) | 16:45-17:55 hrs |
| Session Chairperson : Prof. Naveen Navani, Professor, IIT Roorkee Dr. Manisha Agrawal, Professor, RCET, Bhilai | |
| Invited Talks | Time |
| Dr. G. L. Devnani, Associate Professor, HBTU Kanpur <i>“Environment Friendly Natural Fiber based Green Composites: Future Materials for Sustainable Development”</i> | 16:45-17:15 hrs |
| Contributory Lectures (Theme: Energy & Environment) | |
| Dr. Rajesh Panda, CIPET:IPT, Ahmedabad <i>“The Influence of Phenalkamine on the Structural and Mechanical Properties of Epoxy Systems with a Focus on Tribological Behavior”</i> | 17:15-17:25 hrs |
| Dr. G Nag Bhargavi, Govt. Pt. Shyamacharan Shukla College Dharsiwa, Raipur | 17:25-17:35 hrs |

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|---|------------------------|
| <i>“Investigation of Structural,Optical And Dielectric Properties of Europium and Gadolinium Modified Barium Zirconium Titanate Ceramic”</i> | |
| Kowsika Murugesan, CIPET: SARP- APDDRL, Bengaluru <i>“Super Capacitive Behaviour of Cuo/Polypyrrole Nanocomposite Decorated with Zinc Oxide Nanoparticle”</i> | 17:35-17:45 hrs |
| Kukil Sharma, NIT, Raipur <i>“Integration of Sustainable Materials and Architectural Design for Energy-Efficient Buildings”</i> | 17:45-17:55 hrs |

Venue (Hall-I, Seminar Hall, 3rd Floor)

| | |
|---|------------------------|
| <i>Session on Positive thinking techniques by Dr. Jai Gopal Goel, Director, Indian Institute of Thinking Technology, Panchkula Haryana</i> | 18:00-18:45 hrs |
| Sangeet Sandhya followed by Dinner | 19.00 onwards |

Poster Session (Hall-II, 3rd Floor)

14:00-17:30 hrs

Industry Connect (Hall-IV, Conference Hall, 2nd Floor)

Panel Chairman: Dr. Sushil Kumar Verma, Former Director General, CIPET

12:00-13:00 hrs

Incubator / Start-up Meet (Hall-IV, Conference Hall, 2nd Floor)

Panel Chairman: Dr. Prakash Biswas, Professor, IIT Roorkee

15:00-16:00 hrs

Posters

| Name of Presenter | Title of Paper |
|---|---|
| Dr. Ravishankar Lanjhiyana <i>IGKV Raipur</i> | A Review on Waste Tyres Through Different Ways in Horticulture |
| Ankush Koundal <i>CIPET:IPT, Ahmedabad</i> | Replacement of Conventional Wood Pulp with Agricultural Waste for Rayon Fiber Production |
| Sarang D., Ginni Gitika, C. K. Paikra, Pophaly, A.K. Tripathi <i>College of Dairy Science & Food Technology, DSVCKV, Raipur</i> | Microbiological Safety of Edible Products: Sustainability of Food for Human Consumption |
| Harshvardhan Rajpurohit <i>CIPET:IPT, Ahmedabad</i> | Polymeric Based Biomaterial Used as Orthopaedics and Dental Applications: A Review |
| Jivan Jyoti <i>Kalinga University</i> | Enhancing the Property of Flexible Pavement (FP) With the Application of Waste Plastic Materials(WPM) |

| | |
|---|---|
| Kritika <i>CIPET:IPT, Ahmedabad</i> | Environmentally Sustainable Wastewater Treatment and Power Generation Utilizing Semi-Crystalline Copper Oxide/Sodium Alginate Grafted Polypyrrole Composite |
| Mayank <i>CIPET:IPT, Ahmedabad</i> | Extraction of Carboxymethylcellulose from Water Hyacinth as a Reinforcement for Bio Based Plastic |
| Ms. Payal Sahu <i>Amity University Chhattisgarh, Raipur</i> | Biochar Industry: The Tool of Climate Change Mitigation to Circular Bioeconomy Approach |
| Ruchi Tomar <i>CIPET:IPT, Ahmedabad</i> | Assessing the Influence of Calcium Carbonate in Recycled Glass Fiber-Reinforced Polypropylene (GFRPP) Composites |
| Vishwajeet Kshirsagar <i>CIPET:IPT, Ahmedabad</i> | To Manufacture a Biodegradable Film by Using Sugarcane Bagasse as a Raw Material |
| Sankalp Tiwari <i>Kalinga University Raipur</i> | Fabrication and Comparison of Wear Rate of Al ₂ O ₃ And ZrO ₂ Based Ceramic Composite Material |
| Ujala <i>CIPET:IPT, Ahmedabad</i> | Graphene Quantum Dots: Features of Photoluminescence (PL of GQD) |
| Tusharkanta Nayak, <i>CIPET:SARP-LARPM, Bhubaneswar</i> | Development and Property Analysis of Polyurethane/Strontium Titanium Oxide Composite for Biomedical Applications |
| Vargobi Mukherjee, <i>Amity University Chhattisgarh, Raipur</i> | Exopolysaccharide (EPS) is an emerging tool for bioremediation in heavy metals absorption |

| Day 2:7th October, 2023 | |
|---|-------------------------|
| Registration | 8:00 hrs onwards |
| Session-I | |
| Venue (Hall-I, Seminar Hall, 3rd Floor) | 9:00-11:00 hrs |
| Keynote Address: Dr. Ajay K. Dalai, Professor, University of Saskatchewan, Saskatoon <i>"Novel Activated Carbon from Spent Coffee Grounds: Effects of Textural Properties and Surface Chemistry"</i> | 9:00- 10:00 hrs |
| Invited Talks/ Lectures | Time |
| Session Chairpersons: Dr. D. S. Bag, Scientist G, DMSRDE Kanpur | |
| Dr. Sushanta Banerjee, Professor, IIT Kharagpur <i>"High-Performance Polymer-Membranes for Clean and Sustainable Energy: Gas Separation and Fuel-Cell Applications"</i> | 10:00-10:30hrs |
| Mr. Sanjeev Kumar Saxena, General Manager, NTPC Raipur <i>"Sustainable Ash and FGD Gypsum Utilization in NTPC"</i> | 10:30-11:00hrs |
| Tea Break | 11:00-11:15 hrs |

| Session-II | |
|--|------------------------|
| Venue (Hall-I, Seminar Hall, 3rd Floor) | 11:15-13:15 hrs |
| Session Chairperson: Dr. Sushanta Banerjee, Professor, IIT Kharagpur Dr. G. L. Devnani, Associate Professor, HBTU, Kanpur | |
| Invited Talks | Time |
| Dr. Babasaheb R. Sankapal, Professor, VNIT Nagpur <i>“ Smart Advanced Nanomaterials : Device Grade Colourful Solar Cell And Flexible Solid State Supercapacitor”</i> | 11:15-11:45 hrs |
| Dr. Smita Mohanty, Principal Scientist, CIPET LARPM, Bhubaneshwar <i>“Plastics Carry Bags- A Preference or Choice:Life Cycle Assessment (LCA) in Indian Prospective and Methodological Decisions”</i> | 11:45-12:15 hrs |
| Dr. Samir Bajpai, Professor, NIT Raipur <i>“Sustainable Technologies for Cement Manufacturing”</i> | 12:15-12:45 hrs |
| Contributory Lectures (Theme: Nano-composites & Smart Polymeric Materials) | |
| Dr. Mehar Afroz Qureshi, College of Dairy Science and Food Technology, DSVCKV, Raipur <i>“Application of Nanotechnology in Food And Dairy Processing:AnOverview”</i> | 12:45-12:55 hrs |
| Kamlesh Kumar Dhritlahre, ICAR-CIFE, Mumbai <i>“Preparation of Chitosan Nanoparticles – A Novel Approach”</i> | 12:55-13:05 hrs |
| Sagar Kumar Rajak, NIT Raipur <i>“Green Synthesis of MgO Nanoparticles and its Application in Degradation of Methyl Violet Dye”</i> | 13:05-13.15 hrs |
| Venue (Hall-III, Video Conference Hall, 2nd Floor) | 11:15-13:15 hrs |
| Session Chairperson: Mr. Umesh Chitlangia, Ex. Chairman CII, Chhattisgarh Mr. B. Ravi, Director & Head, CIPET:SARP, ARSTPS, Chennai | |
| Invited Talks | Time |
| Ms. Bonya Mukharjee, General Manager, SAIL <i>“Emerging Technologies for Confronting Environmental Impact by Steel Industries”</i> | 11:15-11:45 hrs |
| Mr. Krishna Joshi, Managing Director, Wavin Vectus, Orbia Group <i>“Sustainable Plumbing & Infra”</i> | 11:45-12:15 hrs |
| Contributory Lectures (Theme: Materials from Renewable Feedstock) | |
| 12:15-13:15 hrs | |

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| Dr. Ganesh Prasad Shukla & Pranav Gupte, GGU, Bilaspur <i>“Exploring the Relationship Among Drivers and Green Technologies: A Theoretical Study”</i> | 12:15-12:25 hrs |
| Dr. B. L. Sinha, Indira Gandhi KrishivishvaVidyalaya, Raipur <i>“Energy Utilization Pattern OfMuskmelon (Cucumismelo) Production Under Drip Irrigation System”</i> | 12:25-12.35 hrs |
| Stephen Jose, CIPET: IPT, Kochi <i>“Green Synthesize of ZnO Nanoparticles from Lemon Peel and its Photophysical Characteristics for Light Emitting Diodes (LEDs)”</i> | 12:35-12.45 hrs |
| Roshni Pattanayak, CIPET:SARP-LARPM, Bhubaneswar <i>“A Sustainable Development of Modified Cellulose Acetate Formulation For Health and Hygiene Application”</i> | 12:45-12.55 hrs |
| Malaya Ranjan Parida, SARP-LARPM::CIPET, Bhubaneswar <i>“Plasma Treated Bio Derived Fillers Reinforced Flame Retardant Thermoplastic Composites: A Study on Mechanical, Thermal, Morphological, Acoustic and Flammability Characteristics”</i> | 12:55-13.05 hrs |

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| Lunch Break | 13:15-14:00 hrs |
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| Session-III | |
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| Venue (Hall-I, 3rd Floor) | 14:00-15:00 hrs |
| Contributory Lectures (Theme: Waste Management & Recycling) | |
| Session Chairperson: Dr. Swasti Sthapak, Associate Professor, NIT Raipur Dr. Anjali Oudhia , Professor, Govt Nagarjuna PG College of Science, Raipur | |
| Satyabrata Sahoo, Ravenshaw University, Cuttack <i>“Evaluating the Effects of Sterilization Techniques on Biomedical Plastic Wastes: Implication for Recycling”</i> | 14:00-14:10 hrs |
| Rakhi Pal, CIPET:IPT, Bhubneshwar <i>“To Produce A Polyethylene Terephthalate (PET) from Polyethylene Terephthalate (PET) Waste By Chemical Recycling Process”</i> | 14:10-14:20 hrs |
| Tanu Nirwan, CIPET: IPT, Ahmedabad <i>“Upcycling of Citrus Fruit Pomace Biowaste via Chemical Treatment”</i> | 14:20-14:30 hrs |

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| Soumyadeep Bera, Centre for Interdisciplinary Sciences, (JISIASR), Kolkata <i>“Effectiveness of TMTD in Selective Devulcanization of EPDM Wastes: An Energy Efficient Approach”</i> | 14:30-14:40 hrs |
| Mrs. Ambika Joshi, Asst Professor, CIPET Raipur <i>“Elastomer (NBR/SBR blend) based Sustainable materials showing effect of compatibilizer in different blend ratios”</i> | 14:40-14:50 hrs |
| Dr. Jitendra Sinha, IGKV Raipur <i>“Innovative Strategy for Environment Friendly Reuse of Food Packets”</i> | 14:50-15:00 hrs |
| Venue (Hall-III, Video Conference Hall, 2nd Floor) | 14:00-15:00 hrs |
| Contributory Lectures (Theme: Energy & Environment) | 14:00-14:50 hrs |
| Session Chairperson: Dr. A. K. Tripathi, Dean, College of Dairy Science & Food Technology, Raipur Dr. R. Joseph Ben Singh, Senior Scientist & Head, CIPET:SARP - APDDRL, Bengaluru | |
| Mr. RijanSahu & Mr. Gaurav Tamrakar, Kalinga University, Raipur <i>“Analysis of Renewable Source of Energy Which is Biodiesel Blended With Diesel”</i> | 14:00-14:10 hrs |
| Aanchal Chandrakar, S. V. College of Agril. Engg. and Tech & RS, IGKV Raipur <i>“Design and Development of Solar Powered Smart Vertical Tower Hydroponics System using Nutrient Film Technique”</i> | 14:10-14:20 hrs |
| Manoj Kumar Mallick, SARP-LARPM:CIPET, Bhubaneswar <i>“Randomly Embedded Quaternary Metal in Porous Activated Carbon As A Counter Electrode for Dye-Sensitized Solar Cells Under Dim-Light Effect”</i> | 14:20-14:30 hrs |
| Shailoneil Sahu, NIT Raipur <i>“Blue-green Infrastructure– An Opportunity for Sustainable India”</i> | 14:30- 14:40 hrs |
| Pooja Priyadarsini, CIPET:SARP-LARPM, Bhubaneswar <i>“Preparation and Characteristic Analysis of Extruded Blown Guargum Based PBAT/PLA Composite Film”</i> | 14:40-14:50 hrs |
| Swati Kumari, CIPET: IPT, Ahmedabad <i>“Sustainable Carbon Filler for Rubber Compounds with Comparable Mechanical Properties to Standard Carbon Black”</i> | 14:50 – 15:00 hrs |

Poster Session (Hall-II, 3rd Floor)

11:15-13:00 hrs

| Posters | |
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| Name of Presenter | Title of Paper |
| Aditya Sharma <i>CIPET: IPT, Ahmedabad</i> | Thermo-Mechanical Exploration of PEEK and Surface Activated PI-Sized Carbon Fiber (PICF) with Atmospheric Dielectric Barrier Discharge (ADBBD) |
| Vismay Pujari <i>CIPET: IPT, Ahmedabad</i> | Study of Hygroscopicity on the Mechanical Properties of Natural Functionalized Sisal Fiber |
| Sudhanshu Kumar, Vinayak Shukla <i>CIPET: IPT, Ahmedabad</i> | Enhancing Mechanical, Thermal, and Morphological Properties of PP/POM Blend Nanocomposites Through Nanoclay Incorporation |
| Pranshula Panigrahi <i>CIPET:SARP-LARPM, Bhubaneswar</i> | Probing Diketopyrrolopyrrole (Dpp) Materials via Substitute Identity: A Comprehensive Electrochemical and Photophysical Study |
| Neha Singla <i>CSIR-National Physical Laboratory</i> | Synthesis of Hydrophobic and Electroactive Polyaniline Based Coatings for Anticorrosion Application |
| Rahul Saha <i>CSIR-National Physical Laboratory</i> | Synthesis of E-Waste Derived Self-Cleaning Coating Compositions |
| Pooja Mohapatra <i>Burla Orissa</i> | Synthesis and Analysis of PVDF/PANI Nanocomposites Enhanced with Mxene/F-SWCNT Hybrid Nanofillers for Electromagnetic Interference Shielding and Electrochemical Device Applications |
| Sumi Vincent <i>CIPET:SARP-LARPM, Bhubaneswar</i> | Sustainable and Antibacterial Chitosan-Cellulose-Based 3D Printable Composites for Potential Healthcare Applications |
| Yashwant Kumar Sahu <i>CV Raman University Raipur</i> | Plastics Waste Management: Threats and Opportunity: A Study with Respect to Bilaspur Municipal Corporation |
| Sanjana Das, Aman Kumar Gupta, Yagyadeep <i>CIPET: IPT Raipur</i> | Agronomic Sprayable mulch films by Biowaste |
| Atul Dubey, Astha Patel, Pushkar Tiwari <i>CIPET: IPT Raipur</i> | Conversion of Single Use Plastic (Thermocol) into Synthetic Fiber Using an Agro-waste |
| Nidhi Chandrakar <i>Amity Institute of Biotechnology, Amity University Chhattisgarh</i> | Biofilm: A Future Approach for Bioremediation on Environmental Adulteration |
| Ashish Raghavan, Smita Mohanty <i>CIPET:SARP-LARPM, Bhubaneswar</i> | Sustainable Energy Harvesting: Triboelectric Generators Utilizing Recycled PVC and PP from Biomedical Plastic Waste |

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| Dilip Kumar Sahu, R S Singh, A K Singh <i>Govt. V.Y.T. PG. Autonomous College, Durg</i> | Reinforcement of Multiwalled Carbon Nanotube in Microcellular Silicone Elastomer: In Comparison with Nano-Graphite |
| Khilendra Ratre, Ojasvee , Domesh Kumar <i>CIPET: IPT Raipur</i> | Depolymerization of Waste Polyethylene Terephthalate in Supercritical Ethanol |

Hall I (Seminar Hall) Valedictory Session

15:15-16:00 hrs