Research Publications (Conference Paper)

Department of Chemical Engineering

2026-27

1. **Radha Das**, Sudip Karmakar, Soumyadwip Hazra, Arkadip Hait. "Agro -Waste Derived Bio-adsorbents For Removal of Carcinogenic Dyes from Industrial Effluents Towards Greener Future" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
2. **Radha Das**, Somdutta Sarkar, Sneha Patra, Subham Majumder. "Eco-Friendly Extraction of Nano-Silica from Agricultural Residues: A Sustainable Approach" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
3. Anubhab Chakraborty, Dipannita Mitra, Meghna Roy, Namrata Ghosh, **Radha Das**. "Carbon Capture, Utilizations, and Storage (CCUS): Opportunities, Challenges, and Future Perspectives" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
4. Aritri Pradhan, Dhara Abheek Ashok, Debdyuti Das, Anupam Bhunia, **Radha Das**. "Valorization of Refinery and Edible Oil Sludge via Hydrothermal Liquefaction (HTL)" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
5. Ritwika Chatterjee, Aratrika Das, Shourya Bhadra, **Radharani Das**. "Valorization of Agro-Wastes into Sustainable Adsorbents for Removal of Carcinogenic Dyes from Industrial Wastewater" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
6. **Rabindranath Jana**. "Effects of Nanomaterials in Fire Control" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26),

Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

7. Angshudeep Maji, MD Samim Khan, Priyadarshinee Maiti, Subhechha Maity, **Rabindranath Jana**. "Elimination of Micro-Nano Plastics (MNPs) and Environmental Waste-Water Management" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
8. Niladri Biswas, Aakash Kumar Supakar, MD Sajeed Ali, Mir Sajit Hosen, **Rabindranath Jana**. "Industry 5.0 and Digital Transformation for Sustainability: Assessing Marketing Value and Future Trajectories" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
9. Priyansu Chatterjee, Antariksha Pramanik, Krish Kumar Das, Ratul Dinda, **Rabindra Nath Jana**. "Bioethanol from Agricultural Waste" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
10. **Siddhartha Sankar Boxi**. "Photocatalytic Degradation of Paracetamol under Visible Light Using Semiconductor Nanomaterials" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
11. Sankhajit Pati. Somnath Samanta, **Siddhartha Sankar Boxi**. "Role of Green Hydrogen in Achieving Sustainable Energy and Net-Zero Emissions" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
12. Sk Sahin Rahaman, Sneha Das, Sanchita Das, Soumi Mahapatra, **Siddhartha Sankar Boxi**. "Converting Plastic Waste into Value-Added Products: A Pathway to a Circular Economy"

International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

13. Shyam Sundar Samanta, Sanju Nayek, Soumyajyoti Mandal, Sk Nasir Alam, **Siddhartha Sankar Boxi**. "Advancing Sustainable Agriculture through Smart Farming" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
14. Tirthoraj Dutta, Sayan Jana, Soumyadeep Bera, **Barnali Bej**. "Technological Advancement of Carbon Capture using Amine Based Efficient Adsorbent" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
15. Sayantika Halder, Tripanwita Sardar, **Barnali Bej**. "Catalytic Pyrolysis of Lignocellulosic Biomass using CO2 for Production of Hydrogen: A Sustainable Route" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
16. Sayan Mahata, Sk Abu Faran, Sourin Bhunia, Soumyadip Samanta, **Barnali Bej**. "Electrochemical CO2 Reduction: A Literature Survey on Catalysts, Mechanisms and Emerging Strategies" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
17. Kaustav Dhar, Kowstav Bhattacharyya, Kanchan Bera, Barnick Mondal, **Ujjal Ghosh**. "Nuclear Power in the Net-Zero Transition: Opportunities, Challenges and Circular Fuel Management" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
18. Goutam Thakur, Oishik Maity, Pralay Mahata, Himadri Das, **Ujjal Ghosh**. "Waste to Wealth: Sustainable Valorization of Fish Processing Residues for Net-Zero Goals"

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19. Debatri Samanta, Deblina Pradhan, Bhumi Pathak, Rikta Jana, Lipika Das Samanta, **Sutapa Roy**. "Pyrolysis-Based Conversion of Plastic Waste into Liquid Fuel: A Waste-to-Energy Technology" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
20. Sukriti Maity, Soumyanil Ganguly, Soumyadip Saha, Sanchayan Maiti, **Lipika Das Samanta**. "Unlocking the Potential of Calcium-Rich Waste: A Review of Sustainable Catalysts for Biodiesel Production" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
21. Ananya Mukherjee, Dibyajyoti Dey, Purbesh Mondal, **Lipika Das Samanta**, Sutapa Roy. "Carbon Capture Using Algae-Based Photobioreactor Systems" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
22. Bibek Acharjya, Jitendra Maity, Sutapa Roy, **Lipika Das Samanta**. "From Plastic Waste to Power: Optimizing Fuel Production from Polyethylene Waste" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
23. Atri Sen, Deb Kumar Jana, Archak Bera, **Lipika Das Samanta**, Sutapa Roy. "Transforming CO2 Emissions into Self-Healing Sustainable Cement Production: A review" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
24. Anupam Lohar, Aritra Mandal, Reetam Manna, Ayan Panja, **Keka Rana**. "Generation of Sustainable Fuel from Refinery Waste Sludge" International Conference on Sustainable

Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

25. Rudra Pratap Mal, Rup Das, Sayandip Das, Sayan Kumar Kar, **Keka Rana**. "Waste Water and Environmental Management of Food Processing Industry" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
26. Subhankar Patra, Subhajit Maity, Suman Mistry, Soubhik Patra, **Keka Rana**. "Precision Fermentation: An Emerging Platform for Sustainable Food Production" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
27. Sanajit Jana, Saikat Khanra, Upendra Pramanik, Sanjib Maity, **Keka Rana**. "Waste Water Treatment of Dairy Industry" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
28. Amrita Das, Sanket Gayen, Ankita Roychowdhury, Sankhadip Das, **Sonali Samanta**. "A Review of Agricultural Waste-Derived Biochar for Heavy Metal Removal from Contaminated Water" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
29. Tushar Koley, Tirthankar Jana, Triyan Mandal, **Sonali Samanta**. "A Review on Synthesis of Graphene-based Catalysts for Electrochemical and Photocatalytic Reduction of CO2 to Methanol Production" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

30. Suraj Manna, Sumanta Mallick, Sukanta Mandal, **Sonali Samanta**. "Microalgal Carbon Capture and Utilization for Sustainable Carbon Management and Circular Bioeconomy" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
31. Sudip Tunga, Soumyadip Samanta, Udita Manna, Subrata Samai, **Sonali Samanta**. "A Review on Recent Advances in TiO2-Based Photocatalysts for Sustainable CO2 Reduction to Solar Fuels" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
32. Supratik Quila, Suparna Hazra, Soumyadip Manna, Soumyadip Patra, **Sonali Samanta**. "A Review of Recent progress in Cu-Based Catalysts for Efficient CO2 to Dimethyl Ether Conversation" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
33. Arnab Dey, Ankit Maji, Ahamjit Dutta, Prakash Sahoo, **Suman Saha**. "Deep-Sea Mining of Critical Metals: Prospects, Environmental Impacts, and Sustainability Challenges" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
34. Kousani Banerjee, **Aditi Sinha**. "An extensive review on bio-mimetic superhydrophobic nanomaterials in the field of next generation wastewater treatment" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
35. **Aditi Sinha**, Samrita Bhunia, Somodip Das, Ritesh Das, Sanjib Barma, Biswajit Mandal, Avijit Ghosh. "Waste-Derived Biochar for Sustainable Wastewater Treatment: A Critical Review of Pollutant Removal" International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

36. Madhumita Jana, Krishna Mandal, Manisha Khatun, **Biswajit Mandal**. “Studies on the process of Harvesting Fresh Water from Air for Decentralized Water Supply” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
37. Saranya Paruya, **Monal Dutta**. “Optimization of Cryogenic Carbon Capture System through Process Simulation” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
38. Sharmistha Patra, Rishita Parh, **Monal Dutta**, Bitan Pratihar. “Water–Energy–Carbon Nexus in Wastewater Treatment: A Life Cycle Assessment Perspective for Achieving the Sustainable Development Goals: A Potential Review” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
39. Rounak Saha, Sayan Sheet, **Monal Dutta**, Bitan Pratihar. “Digital Transformation and Industry 5.0 for Net-Zero and Low-Carbon Industrial Systems” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
40. Ritobrata Samui, Souvik Mondal, Soumili Samanta, **Monal Dutta**, Bitan Pratihar. “Biotechnology for Sustainable Development: Innovations for a Greener Future” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
41. Soumyadip Jana, Soumyajit Das, Soumyasubhra Maiti, **Monal Dutta**, Bitan Pratihar. “Sustainable Process Engineering for Resource-Efficient and Low-Carbon Manufacturing” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

42. Arnab Samanta, Babai Dingal, Swapnashuvam Maity, **Monal Dutta**, Bitan Pratihar. “AI and Digital Technologies for Smart Circular Economy and Resource Recovery Systems” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
43. Chirashree Nayak, Parinita Santra, Rupanjana Pramanik, Aneswa Samanta, **Monal Dutta**. “Sugarcane Bagasse to Sustainable Aviation Fuel” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
44. Sibasis Saha, Monal Dutta, **Bitan Pratihar**. “Carbon Capture, Utilization, and Storage: Advancing Decarbonization for a Sustainable Future” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
45. Shreya Mandal, Rupa Panna, Trishna Das, **Bitan Pratihar**. “Advances in Biogas Production from Organic Waste: Process Optimization and Future Perspectives” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
46. Soumya De, Soumya Kundu, Monal Dutta, **Bitan Pratihar**. “Advances in Carbon-Sand Filtration for Domestic Water Treatment” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
47. Anubhab Pramanik, Kuntal Kundu, Manibrata Maity, Prantik Mandal, Monal Dutta, **Bitan Pratihar**. “Advances in Industrial Wastewater Management for Environmental Sustainability” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7

48. Debojit Dhul, Koushiki Pati, Pratyusha Samanta, Pritam Maity, **Bitan Pratihar**. “Plastic Waste to Fuel: Turning Trash into Energy” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7
49. Sumit Samanta, Supratik Das, Swarnab Manna, Shubhadip Manna, **Bitan Pratihar**. “Recent Developments in Smart Farming for Sustainable Agricultural Practices” International Conference on Sustainable Technologies, Circular Economy, and Environmental Resilience (ICSTCER-26), Haldia Institute of Technology, Haldia, West Bengal, September 15-16, 2026. ISBN Index of Proceedings: 978-81-978408-0-7