

Research Publications (Conference Paper)

Department of Chemical Engineering

2025-26

1. **Siddhartha Sankar Boxi**, “Visible Light-Induced Degradation of Paracetamol with Semiconductor Nanomaterials”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
2. Sk Sakil Hossain, Sk Samim, **Siddhartha Sankar Boxi**, “Urine to Electricity: A Sustainable Approach Using Microbial Fuel Cells”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
3. Sk Sahin Rahaman, Sayan Pramanik, **Siddhartha Sankar Boxi**, “Algae to Petroleum – Turning Green Slime into Green Energy”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia, Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
4. Sayan Mahapatra, Soumyadip Manna, Soumyadip Patra, Sayan Das, **Siddhartha Sankar Boxi**, “Waste to Energy (WTE) Conversion: Technological Methods and Global Advancements”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia, Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
5. Priyansu Chatterjee, Antariksha Pramanik, Krish Kumar Das, **Siddhartha Sankar Boxi**, “Sustainable Biofuel Production from Municipal Sewage Sludge: A Waste-to-Energy”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia, Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.

6. Sujal Kumar Singh, Saikat Jana, Soumyadip Samanta, Soumen Dolai, **Siddhartha Sankar Boxi**, “Carbon Residue Formation of Fuel Oils”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
7. Barnali Bej, **Siddhartha Sankar Boxi**, “Nano Silica Based Gravity Filter for Application in River Water Purification: A Short Review”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, Haldia, Haldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
8. Madhumita Jana, Manisha Khatun, Krishna Mandal, **Barnali Bej**. “Green Building: The Future Aspects for Sustainability” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engg., Biotechnology and Food Technology, in association with IQAC, Haldia Institute of Technology, Haldia, West Bengal, 11-12th September, 2025.
9. Bristi Bera, Debasmita Nanda, **Barnali Bej**. “Biodegradable polymers: Synthesis, Characteristics and future prospects” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engg., Biotechnology and Food Technology, in association with IQAC, Haldia Institute of Technology, Haldia, West Bengal, 11-12th September, 2025.
10. Sanchita Das, Aritri Pradhan, Soumi Mahapatra, Sneha Das, **Ankita Mazumder**. “Green chemical technologies: Renewal Energy” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech- 25), organized by Haldia Institute of Technology, Haldia, West Bengal, 11 – 12th September, 2025.
11. Kriti Srivastava, Kumari Anushka, Muskan Kumari Saha, Nishat Fatma, **Ankita Mazumder**. “Green Solvents and Their Role in Sustainable Chemical Processes” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech- 25), organized by Haldia Institute of Technology, Haldia, West Bengal, 11 – 12th September, 2025.
12. Dibyajyoti Dey, Akash Giri, Arkadip Hait, Agnish Neogi, **Ankita Mazumder**. “Solar Energy A Sustainable Solution to the Global Energy Crisis” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech- 25),

- organized by Haldia Institute of Technology, Haldia, West Bengal, 11 – 12th September, 2025.
13. Syed Arheena Mehresh, Subhechha Maity, Rikta Jana, Sumona Mahapatra, Priyadarshinee Maiti, **Tanushree Ghosh**. “Process Intensification: Sustainable Solution Approaches In Food Industry” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech- 25)”, organized by the department of Chemical Engineering, deptment of Biotechnology, & Department of Food Technology, Haldia Institute of Technology, West Bengal, 11- 12th September, 2025.
 14. Sudip Tunga, Udit Manna, Ujjal Mandal, Subrata Samai and **Sonali Samanta**. “An Overview of Agricultural Waste-Derived Nanomaterials for Sustainable Waste Water Treatment by Heavy Metal Removal”. International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”.School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, In association with IQAC, HIT, organized by Haldia, West Bengal, 11- 12th September, 2025.
 15. Shyam Sundar Samanta, Sujoy Kumar Ghosh, Sudipta Jana and **Sonali Samanta**. “Advancements in Platinum/Carbon Based Cathode Catalysts for Proton Exchange Membrane Fuel Cells”. International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”.School of Chemical Engineering, Biotechnology and Food Technology, organized by Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
 16. Tushar Koley, Tirthankar Jana, Supratik Quila, Triyan Mandal and **Sonali Samanta**. “A Review on Hydrogen Generation from Plastic Waste using TiO₂-Based Photocatalysts”. International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”.School of Chemical Engineering, Biotechnology and Food Technology, organized by Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
 17. **Sonali Samanta**, Asit Kumar Saha and Rajat Chakraborty. “Development of Waste Fish Scale/TiO₂/Cu₂O Composite Catalyst for Photocatalysis of Methanol Production”. International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”. organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
 18. **Sonali Samanta**, Rajat Chakraborty, Asit Kumar Saha. “Synthesis, Characterization, and Photocatalytic Evaluation of Bio-Derived TiO₂ and TiO₂–Cu Catalysts Supported on Fish

Scales and Eggshells”. CHEMCON 2025. IICHE, organized by Annamalai Regional Centre, 27 -30th December, 2025.

19. Ananya Mukherjee, Adreeja Majumdar, Babai Dingal, Debatri Samanta, Sutapa Roy, Biswajit Mandal, **Lipika Das Samanta** “Innovative Colour Spectrum of Hydrogen and Pathways to produce Green Hydrogen towards Carbon Neutrality” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)” organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
20. Parinita Santra, Rupanjana Pramanik, ChirashreeNayak, Monami De, Biswajit Mandal, Sutapa Roy and **Lipika Das Samanta** “Power on the Move: Materials and Manufacturing of Flexible Organic Solar Cells” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)” organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
21. Arnab Sadhu, BibekAcharjya, JitendraMaity, Ratul Sasmal, Sutapa Roy, Biswajit Mandal, **Lipika Das Samanta** “Emerging Pathways to produce Clean and Green Hydrogen to accelerate the Net-zero Target Achievement and Sustainable Development” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)” organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, In association with IQAC, HIT, Haldia, West Bengal, 11 – 12th September, 2025.
22. **Monal Dutta**. “Exploring the Potentials of Hybrid Renewable Energy Systems-A Review” 2nd International Conference on Renewable Energy Technologies and Bio Sustainability ICRETBS 2025, organized by Centre for Education Innovation and Entrepreneurship, Kolkata, West Bengal, 22-24rd March, 2025.
23. **Sunil Baran Kuila, Monal Dutta**. “A Comparative Study of Nuclear and Thermal Power Generation: Efficiency, Sustainability, and Environmental Aspects” IChE-CHEMCON-2025, Annamalai University, organized by Annamalainagar-608002, Tamilnadu, India., 27 – 30th December, 2025. P-463
24. Dhara Abheek Ashok, Akash Panja, Anwesha Das, Rajesh Mondal, **Keka Rana**, “Unlocking sugarcane bagasse for second-generation (2G) ethanol is essential for sustainable energy advancement”, International Conference on “Advancement of Green

- Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, in Association with IQAC, HIT, Haldia, West Bengal, 11-12th September, 2025.
25. Sukanta Mandal, Suman Mistry, Dipak Das, Sudip Dolai, Soumyajit Shit, **Keka Rana**, “Algae-Based Biofuels: A Sustainable Solution for Future Energy Demands” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, in Association with IQAC, HIT, Haldia, West Bengal, 11-12th September, 2025.
26. Subhankar Patra, Subhajit Maity, Swati Paul, Satyajit Sahoo, **Keka Rana**, “Review on Formation of Sustainable Organic Fertilizer from Municipality biodegradable solid waste” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, in Association with IQAC, HIT, Haldia, West Bengal, 11-12th September, 2025.
27. **Keka Rana**, “Unlocking the Potential of Membrane Technology through Performance Analysis of Nanomaterials”, International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech-25)”, organized by School of Chemical Engineering, Biotechnology and Food Technology, Haldia Institute of Technology, in Association with IQAC, HIT, Haldia, West Bengal, 11-12th September, 2025.
28. **Keka Rana**, Debasish Sarkar, “Precise Hydrodynamic Analysis of Rotating Disk-Membrane (RDM) Module Through Computational Fluid Dynamics Approach”, CUCHE Alumni Conference 2025 on, “The Expanding Horizon of Chemical Engineering”, organized by Department of Chemical Engineering, University of Calcutta, India, 21 -22rd December, 2025.
29. Asit Kumar Saha, **Keka Rana**, “AI-Powered Camera Augmented Stethoscope for Diagnostic Applications”, Indian Institute of Chemical Engineering (IICHE), CHEMCON 2025, IICHE, organized by Annamalai Regional Centre, 27 – 30th December, 2025.
30. Muskan Kumari Saha, Mayank Sharma, **Keka Rana**, “Revolutionizing Drug Delivery: Achieving Safety and Precision with Advanced Nanocarriers”, 21st Annual session of Students’ Chemical Engineering Congress (SCHEMCON 2025)”, organized by IICHe-VIT

Student Chapter, School of Chemical Engineering, Vellore Institute of Technology, Vellore, India, 3-4th October, 2025.

31. Aishi Basak, Aritra Changdar, Sunil Baran Kuila, Sucheta Das Maji, Lipika Das Samanta, **Sutapa Roy**, “Synthesis of Novel Antibacterial Aloe Vera-based Biocompatible Polymeric Hydrogels as a Potential Disinfectant” participated the 21st Annual Session of students’ Chemical Engineering Congress, organized by IChE-VIT Students Chapter, School of Chemical Engineering, organized by Vellore Institute of Technology in association with Indian Institute of Chemical Engineers, Vellore Regional Centre, held from 3rd to 4th October 2025.
32. Manavi Kumari, Kousani Banerjee, Abhinav Maiti, **Sutapa Roy**, Lipika Das Samanta “From Waste to Wealth: The Critical Review of Utilization of Spent Tea Leaves in Oil Spill and Wastewater Remediation” participated the 21st Annual Session of students’ Chemical Engineering Congress, organized by IChE-VIT Students Chapter, School of Chemical Engineering, Vellore Institute of Technology in association with Indian Institute of Chemical Engineers, Vellore Regional Centre, held from 3rd to 4th October 2025.
33. Prince Kumar Sah, Arpita Halder, Ajay Banerjee, Sunil Baran Kuila, Sucheta Das Maji, Lipika Das Samanta, Biswajit Mandal, **Sutapa Roy**, “Development of a Biocompatible Biodegradable Hydrogel Nanocomposite and Evaluation of the ability to inhibit Microbial Growth” participated the 21st Annual Session of students’ Chemical Engineering Congress, organized by IChE-VIT Students Chapter, School of Chemical Engineering, Vellore Institute of Technology in association with Indian Institute of Chemical Engineers, Vellore Regional Centre, held from 3rd to 4th October 2025.
34. Saranya Paruya, **Sutapa Roy**, Lipika Das Samanta, “Reaction Kinetics and Mechanistic Insights into Supercritical Water Oxidation of Phenol: A Critical Review” participated the 21st Annual Session of students’ Chemical Engineering Congress, organized by IChE-VIT Students Chapter, School of Chemical Engineering, Vellore Institute of Technology in association with Indian Institute of Chemical Engineers, Vellore Regional Centre, held from 3rd to 4th October 2025.
35. **Radharani Das**, Srusti Maity, Sattwik Maity, “Photo-catalytic Degradation of Methylene Blue Dye in Presence of Semiconductor Nano-Materials” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)” organized by School of Chemical Engineering, Food Technology, and Biotechnology,

at Haldia Institute of Technology, In association with IQAC, HaldiaHaldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.

36. **Radharani Das** , Subhojit Ash, Suman Kr Patra, Ishita Sinha , “Low-Cost Agro-Waste Derived Bio-Adsorbents for Chromium (VI) Detoxification from Industrial Discharges Towards a Greener Future” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)”organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, HaldiaHaldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
37. **Radharani Das**, Subhojit Ash, Sattwik Maity, & Soumyajit Maity, “Green Synthesis of Nano - Silica from Agricultural Wastes: Waste to Wealth” International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)”organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, HaldiaHaldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
38. Sudip Karmakar ,Soumyadwip Hazra, Supriya Jana, **Rasdarani Das** “Production of Bio-Plastics from Agricultural Wastes for Sustainable Environment’ International Conference on “Advancement of Green Technology for Sustainable Environment (Green Tech – 25)”organized by School of Chemical Engineering, Food Technology, and Biotechnology, at Haldia Institute of Technology, In association with IQAC, HaldiaHaldia Institute of Technology, Haldia, WB, India, 11-12th September, 2025.
39. **Rabindranath Jana**, “Smart Materials for Sustainable Environment”, International Conference on Smart Materials (SMART 2025), organized by Institute of Fire and Safety Engineering, Haldia-721654, p15-19, 27-28th Dec, 2025.
40. **Siddhartha Sankar Boxi**, Priya Jana, “Parametric Studies of Coir Pith for the Applications as a Plant Growing Medium”, 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
41. Ranit Maity, **Siddhartha Sankar Boxi**, “Production of Biodiesel Using Moringa Oleifera Leaves as a Green Catalyst: A Sustainable Alternative”, 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
42. Barnali Bej, Siddhartha Sankar Boxi, Dwaipaya Roy, Kadrunnisa Khatun. “A Review on Nano Silica Based Filter Medium for River Water Purification” 2nd International

Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.

43. **Barnali Bej**, Sayantan Ghosal, Siddhartha Sankar Boxi. “Production of Biodiesel using Aluminium Based Nanocatalyst: A Short Review” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
44. **M. Dutta**, “A Potential Review on Advanced Energy Technologies for Sustainable and Resilient Low Carbon Future,” Proceedings of the Second International Conference on Advances in Energy and Environmental Engineering 2026, organized by Pune, Maharashtra, India: Grinrey Publishing, 30-31st January, 2026.
45. **M. Dutta**, B. Pratihari, “A Synergistic Pathway for Sustainable Future: Integrating Circular Economy and Supply Chain Justice”, International Conference on “Green Horizons: Redefining Business and Sustainability Paradigms in the Technological Era. organized by D. Y. Patil International University, Akurdi, Maharashtra, India. 2, ISBN: Journal Press India. 27-28th March 2026. DOI: 10.17492/JPI/DYPATIL/2601.
46. **M. Dutta** and S. B. Kuila, “Integrating safety, health, and environmental management practices for chemical sustainable process industry: A comprehensive review,” in Proc. in Proc. 4th Int. Conf. CHEM-TECHNOVA, organized by HBTU Kanpur, 12-14th March, 2026.
47. **M. Dutta** and S. B. Kuila, “Sustainable Solid Waste Management A Potential Review” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
48. **B. Pratihari** and M. Dutta, "Plastic Waste-derived Membranes for Water Treatment: Current Status and Future Perspectives," in Proc. in Proc. 4th Int. Conf. CHEM-TECHNOVA, organized by HBTU Kanpur, 12-14th March, 2026.
49. S. Mandal, S. S. Hossain, and **K. Rana**, “Sustainable Energy Recovery from Municipal Solid Waste: A Waste-to-Energy Approach for Urban Environments,” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
50. S. Paruya, S. Maity, S. Roy, and **L. Das**, “Phenol Oxidation Kinetics under Supercritical Conditions: A Sensitivity-Based Design Study Using DWSIM,” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.

51. A. Mukherjee, D. Dey, A. K. Saha, **L. Das Samanta**, and S. Roy, “Silk-Fibroin Aerogels for Carbon Dioxide Capture: A Review,” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
52. A. Neogi, J. Maity, S. Maiti, S. Midya, S. B. Kuila, S. Das Maji, B. Mandal, **L. Das Samanta**, and S. Roy, “Fabrication of antibacterial hydrogel biomaterial based on chitosan/acrylic acid-co-acrylamide/Aloe Vera/Zinc Oxide for biomedical application,” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
53. Debadutta Patra, Ommkar Prasad Das, **Bisweswar Das**, “Ensemble machine learning-based prediction of space time yield for CO₂ hydrogenation to ethanol,” 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.
54. Subhechha Maity, Soumyanil Ganguly, Prabal Sahoo, Sahil Shaw, Sunil Baran Kuila, **Tanushree Ghosh**, “Development of gelatin based polymeric hydrogel as a drug delivery carrier” in 2nd International Conference on “Advances in Chemical and Material Sciences”, organized by Centre for Education, Innovation and Entrepreneurship (CEIE) Kolkata, 12 – 14th April, 2026.