ORGANIC RECYCLING SYSTEMS LIMITED
CLEANTECH | INNOVATION | ENGINEERING

22nd April 2025

BSE Limited
Department of Corporate Services
Listing Department
P J Towers,
Dalal Street,
Mumbai - 400001
Scrip Code: 543997

Dear Sir/Madam,

Sub: Press Release.

In accordance with Regulation 30 of the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015, please find enclosed herewith Press Release in respect of collaboration between Organic Recycling Systems Limited (the Company) and IIT Kharagpur on Waste-to-Energy and Catalytic Technology Research.

We request you to take the same on record.

Thanking you,

Yours faithfully,

For Organic Recycling Systems Limited

SEEMA HARISHCHANDRA GAWAS
Digitally signed by SEEMA HARISHCHANDRA GAWAS
Date: 2025.04.22 08:37:11 +05'30'

Seema Gawas
(Company Secretary & Compliance Officer)

Engineering New Frontiers: IIT Kharagpur and ORSL Collaborate on Waste-to-Energy and Catalytic Technology Research

Collaboration focuses to advance applied research and technology development in catalysis, carbon utilization, and waste valorisation.

Navi Mumbai, 22nd April 2025: The Indian Institute of Technology Kharagpur (IITKGP), a premier institute of national importance, has entered into a strategic Memorandum of Understanding (MoU) with Organic Recycling Systems Ltd. (ORSL), a leading company in sustainable waste management and bioenergy solutions. This collaboration marks a significant step toward accelerating company's research and innovation ecosystem in the domains of clean energy, carbon utilization, and circular economy.

This strategic partnership outlines a robust framework for collaborative research, capacity building, technology transfer, and the commercialization of cutting-edge solutions. By combining IITKGP's deep research capabilities with ORSL's practical experience and industry insight, the initiative aims to unlock new frontiers in sustainable technologies. The agreement identifies six core technical areas where joint efforts will shape the future research agenda between the two institutions.

One of the key focus areas is the development of novel catalysts for converting carbon dioxide (CO_2) into value-added products. The teams will work on advanced catalytic processes for CO_2 methanation and conversion into mixed alcohols, which hold promise in reducing greenhouse gases while producing usable fuels. They will also explore methane cracking and reforming techniques using both experimental and computational approaches. Machine learning tools will be deployed to accelerate catalyst discovery, optimize reaction pathways, and improve efficiency in carbon utilization technologies.

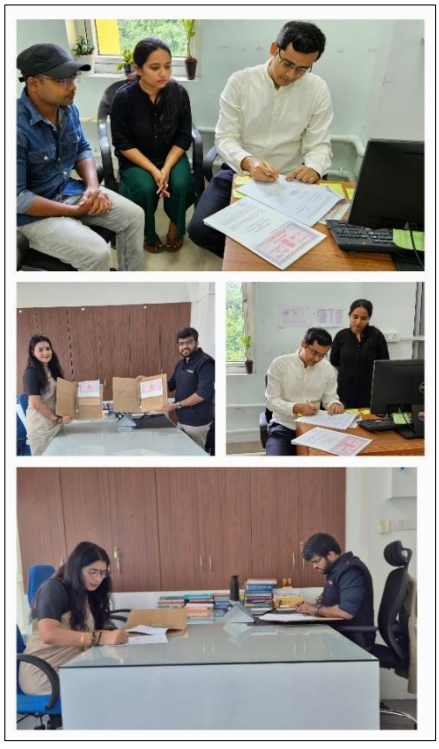

Figure 1: MoU Signing of ORSL and IIT-Kharagpur

In the domain of bioenergy, the collaboration seeks to enhance processes for the production of BioCNG, bioethanol, and biohydrogen. Research teams will work on catalysis for converting waste into renewable

dimethyl ether (rDME), a clean fuel alternative. An additional focus will be laid on the valorisation of biochar-enriched digestate, turning it into a resource for soil amendment or as a support material in catalytic applications. Advanced reactor design and process modeling will be another key focus area, with research directed toward kinetic modeling of catalytic reactions in fixed-bed and fluidized-bed reactors. These efforts will be supplemented by techno-economic and life cycle assessments to evaluate feasibility, scalability, and environmental impact. Artificial intelligence and machine learning will be embedded in the process modeling framework to enhance optimization, reduce trial-and-error, and enable predictive design.

The MoU also encompasses collaborative efforts in analytical and characterization studies. This includes the synthesis, testing, and performance evaluation of catalysts, and the establishment of standardized protocols for the analysis of biochar, wastewater, and solid waste. These studies aim to ensure consistency, reliability, and applicability of solutions developed under the partnership. An especially promising area of research is the development of biomass-based activated carbon. By utilizing residues such as coconut shells and agro-waste, the teams will design high-performance activated carbon with potential applications in gas and water purification. Functionalization techniques will be explored to improve adsorption capacities for heavy metals and organic pollutants. This work will span laboratory development, pilot studies, and commercial deployment. Human resource development forms a cornerstone of this collaboration. Faculty, students, and researchers will engage in mutual exchanges, contributing to knowledge sharing and skill enhancement. Joint training programs, workshops, and conferences will be organized to disseminate knowledge, promote interdisciplinary dialogue, and foster innovation. The two institutions will work hand-in-hand to bring research outputs closer to market through technology scale-up, patenting, and commercialization initiatives.

At ORSL, we believe that research and development must translate into scalable, real-world solutions," said Mr. Yashas Bhand, CEO and Director of Organic Recycling Systems Limited. "Our collaboration with IIT Kharagpur is rooted in this principle—where deep scientific inquiry meets industrial pragmatism. This partnership will enable us to co-develop technologies that are not only scientifically robust but also commercially viable, ensuring that innovations reach the market faster and with greater impact.The IITKGP–ORSL collaboration bridges the gap between fundamental research and industrial application and exemplifies how academic-industry partnerships can address real-world challenges with scalable, science-based solutions. By combining state-of-the-art research infrastructure with field-tested industry experience, this alliance is set to make meaningful contributions to India's environmental and energy goals in the years to come.

About Us

Organic Recycling Systems Limited (ORS) is a pioneering engineering firm specializing in environmental solutions, offering comprehensive waste management solutions across various waste types and the entire value chain. Established in 2008 by technocrats, ORS focuses on developing robust, cost-effective, and eco-friendly technologies. With proven expertise, ORS operates India's premier Waste to Energy (WTE) plant, leveraging patented anaerobic biomethanation technology, recognized by the Government of India's National Master Plan. Additionally, ORS operates a Municipal Solid Waste (MSW) processing plant in Solapur, Maharashtra, converting waste into electricity and compost since 2013. Recognized as a leader in best practices under the Swachh Bharat Mission, ORS is now positioned for EPC opportunities nationwide. ORS operates through three main business verticals: Project development & Technology Licensing, Product Vertical, and Consulting Vertical, providing a comprehensive range of services and solutions in the environmental sector. Through ongoing R&D initiatives and intellectual property development, ORS continues to innovate with new products and technologies, further expanding its presence and impact across the waste value chain.