

Integrating Industrial Waste into Road Construction is Key to India's Circular Economy Vision - Dr. N. Kalaiselvi

Turning Foundry Waste into Roads: CSIR-CRRI, IIF, and Suyog Elements Join Hands for Sustainable Infrastructure

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In a significant step towards sustainable infrastructure and circular economy practices, CSIR-Central Road Research Institute (CSIR-CRRI) is spearheading efforts for the effective utilization of Waste Foundry Sand (WFS) in road construction.

To advance this initiative, the Institute of Indian Foundrymen (IIF) has entered into a collaborative Research & Development (R&D) agreement with CSIR-CRRI and Suyog Elements at CSIR Science Centre New-Delhi, under the gracious presence of Secretary DSIR and Director General CSIR, Dr. N.Kalaiselvi. The partnership aims to develop and facilitate innovative, sustainable, and scalable solutions for the utilization of the WFS of Coimbatore Cluster in road infrastructure.



Exchange of MOA between the CSIR-CRRI, IIF and Suyog Elements India Pvt. Ltd.

During this event, while addressing the gathering, Dr. Kalaiselvi informed that

“The utilization of industrial by-products like Waste Foundry Sand in road construction reflects CSIR’s commitment to sustainable development and circular economy. Collaborative R&D initiatives such as this will help transform waste into valuable resources while supporting the nation’s infrastructure growth.”



Dr. N.Kalaiselvi, DG CSIR and Secretary DSIR, addressing the gathering at CSIR Science Centre

Waste Foundry Sand, a by-product of the metal casting industry, poses environmental challenges due to its large-scale generation and disposal requirements. Leveraging this material in road construction aligns with national priorities on resource efficiency, waste minimization, and sustainable development.

Adding further, the **Director of CSIR-Central Road Research Institute Dr. Ch. Ravi Sekhar** said that *“CSIR-CRRI has been at the forefront of developing sustainable and innovative road technologies. The utilization of Waste Foundry Sand is a significant step toward transforming industrial by-products into valuable construction materials.*

Speaking on this occasion **Mr. Sushil Sharma, President, IIF** informed that the *“Coimbatore foundry cluster is India’s largest foundry cluster, comprising nearly 800–1000 foundry units, which is supplying castings to various domestic sectors and export markets. However, it also generates significant quantities of foundry sand waste, creating challenges in disposal and environmental management. This project aims to address these challenges by enabling the scientific reuse of foundry sand in road construction, thereby converting waste into a valuable infrastructure resource”.*

Mr. Satish Pandey, Senior Principal Scientist and Head Flexible Pavement Division of CRRI, who is leading this project, informed that this collaboration *“aims for a structured research program, involving characterization of different types of foundry sand, including green sand and resin bonded sand, and developing customized processing and utilisation protocols suited for road construction. CSIR CRRI scientific endeavour will be to replicate the successful model of Steel Slag Road technology for waste to wealth conversion for foundry industries as well.*

This initiative is expected to:

- Promote environmentally sustainable road construction practices
- Reduce dependency on natural aggregates

- Provide an effective solution for industrial waste management
- Support the Government of India's vision of circular economy and green infrastructure

Speaking on the occasion, Dr. Vinod Karar, Chief Scientist and Head TMBD, CRRI highlighted that *“under this collaborative project, CSIR-CRRI will provide technical expertise and scientific validation, while IIF will facilitate industry outreach and knowledge dissemination. Suyog Elements will contribute to the implementation and scaling of the developed technologies.”*



Dr. N.Kalaiselvi, DG CSIR with CRRI, IIF and Suyog elements officials

This partnership represents a crucial step toward transforming industrial waste into valuable construction resources, reinforcing CSIR-CRRI's leadership in innovative road technologies. The collaboration is poised to create a strong framework for industry-research synergy and accelerate the adoption of eco-friendly materials in infrastructure development across the country.

The event was attended by the senior officials of The Institute of Indian Foundrymen, including Mr. **Prayut Bhamawat**, Hon-Secretary, **S Muthukumar**, Hon. Treasurer, Dr. Sheela Bhide, Advisor, **Dr. Abhishikta Roychowdhury**, Executive Director, **Dr Rajesh Goel**, Chairman, **IIF Delhi Chapter Sanjeev Kumar**, Director - FIC and **IIF Northern Region Basant Kumar**, Joint Director, FIC, Delhi Chief Scientists of CRRI, comprising Dr. K. Ravinder, Dr. Nasim Akhtar, Dr. P.S. Prasad, Dr. Pradeep Kumar, industry representatives from **Suyog Elements India Pvt. Ltd.** **Shri Yogesh Varsada**, President, Mr. Jeel Varsada, Vice President and Mr. Naresh Tahilramani, Vice President, and stakeholders from the road and steel sectors, highlighting the growing importance of **science-driven solutions for sustainable infrastructure development in India.**

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