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NIIST offers tech for titanium industry



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Eco-friendly process termed as game changer for industry

In a move aimed at equipping the domestic titanium industry with better technology, the CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, has joined hands with the Tamil Nadu-based V.V. Minerals for demonstration of an environment- friendly process for upgradation of ilmenite, a natural mineral present in the beach sands of Kerala and Tamil Nadu.

The technology developed by the CSIR-NIIST involves the conversion of ilmenite to beneficiated titanium feedstock, which is the base material for production of titanium metal and titanium dioxide, two critical products used in the aerospace, automotive, medical, sports, cosmetics and paint industries.

The conventional process of conversion involves the use of concentrated hydrochloric or sulphuric acid to remove the iron values present in ilmenite as ferrous chloride. Disposal of the acidic effluents however has been a major issue for industry. Kerala Minerals and Metals Limited (KMML), a public sector unit located at Chavara, Kollam, has often faced public ire for polluting water resources and posing a public health hazard.

Titanium feedstock

“We have developed an environment-friendly process for conversion of ilmenite to titanium feedstock with a 70 per cent reduction in acid consumption. The bulk of the iron values are removed in the form of oxides free of excess acidity and chloride contamination,” says A. Ajayaghosh, Director, CSIR- NIIST. He feels that this could be a game changer for the titanium industry as a whole.

“During the laboratory scale demonstration, we could produce titanium feedstock with more than 90 per cent titanium do oxide,” Harikrishna Bhat, Chief Scientist, Material Science and Technology division, NIIST, told *The Hindu* . He said the institute would assist V.V. Minerals in demonstrating the process at a pilot plant to be established at Gummidipoondy, near Chennai.

The plant would produce 100 tonnes of beneficiated ilmenite per day for test marketing, consumer feedback and generation of sufficient engineering and process data for the design of a commercial production unit.

A leading manufacturer and exporter of heavy minerals, V.V. Minerals has plans to adopt state-of-the-art technology for upgradation of ilmenite to a beneficiated product with better market value.

The partnership agreement was signed in Thiruvananthapuram on Thursday in the presence of Dr. Ajayaghosh and Director, V.V. Minerals, V. Subramanian.

Pilot plant to be set up under technology partnership at Gummidipoondy, near Chennai

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