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NML gets Tungsten Extraction Pilot Plant

CSIR-NML

25th May 2017

Samir VKamat, Outstanding Scientist & Director, Defence Materials Research Laboratory (DMRL) inaugurated the 'Tungsten Extraction Pilot Plant' at CSIR-National Metallurgical Laboratory (NML) on Thursday.

Defence Research & Development Organization (DRDO) through Defence Metallurgical Research Laboratory (DMRL), Hyderabad has financed for setting-up of this pilot plant at CSIR-NML located at Nildih. The CSIR-NML 'Tungsten Extraction Technology' will be demonstrated in this pilot plant before its commercialisation by DRDO.

An official of NML said that Tungsten is a strategic metal and found critical application in defence, mining, communications and also in various sectors.

Globally, monopolistic world market is occupied by Chinese in the supply of tungsten and the annual demand of tungsten over 1500 MT in India is met through imports in general.

In order to make import substitution and partly self reliant in terms of annual domestic tungsten demand, particularly for defence applications, indigenous tungsten recycling technology becomes highly essential & important.

CSIR-NML in the recent past has already developed and successfully commercialized tungsten carbide scrap recycling technology.

The very much essence of commissioning of this pilot plant is to widen the scope of this technology in order to accommodate other varieties of tungsten bearing scraps.

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Avenue Mail

CSIR-NIIST tech to make limenite richer in titanium dioxide

CSIR-NIIST CSIR-NEERI

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A technology developed by CSIR-National Institute for Interdisciplinary Science and Technology (NIIST) to make ilmenite richer in titanium dioxide is being evaluated by CSIR-National Environmental Engineering Research Institute (NEERI) on the request of Kerala Minerals and Metals Limited (KMML). The technology, according to scientists at NIIST, produces less amount of acidic effluent, and can bring down not just pollution, but even the cost of production.

The technology can benefit titanium companies like KMML and CERL in Kerala, and DCW in Tamil Nadu, but not Travancore Titanium Products Limited which has been ordered by the Central Pollution Control Board to shut down. The NIIST process suits plants which rely on chloride process, while the TTP relies on sulphate process. Sources in KMML say that they are consulting NEERI to evaluate many such technologies, which claim to enhance ilmenite using environment-friendly and cost-effective processes. Acid is used in titanium plants to remove the iron content in ilmenite and turn it into rutile which is richer in titanium dioxide.

To cure each tonne of ilmenite, 2.5 tonnes of hydrochloric acid is required. Since annually plants produce 20,000 to 30,000 tonnes of titanium dioxide, huge quantities of acid have to be used, according to scientists. In the NIIST process, instead of using acid, ilmenite is passed through a coal-based rotary kiln. Inside the kiln, there will be a mixture of carbon monoxide and carbon dioxide. Carbon monoxide reduces iron oxide in ilmenite to metallic iron. The metallic iron is separated from ilmenite in a rusting reactor which contains water and catalyst. Most of the iron would be converted to iron hydroxide. Only 8-9 percent residual iron would remain, which is then removed using acid. “This ensures that the acidic effluent is much less. Moreover, only 0.5 tonne of acid is used per tonne of ilmenite, which brings down the cost,” a scientist at NIIST says.

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Deccan Chronicle

India assembles top energy research bodies to develop next-gen fuel resources

CSIR-IIP

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In a first of its kind move, India has assembled its top energy research agencies to work together with an aim to develop the next generation of fuel resources for cutting edge commercial applications.

These agencies are Indian Railways Organisation for Alternate Fuels (IROAF), which is Indian Railways' alternate fuel arm; Indian Institute of Petroleum (IIP) Dehradun, and National Institute of Solar Energy (NISE). All these state-owned agencies are working to develop solar-assisted Biomass Pyrolysis technology so that methanol can be produced as an alternate fuel.

"An alternate route of Methanol production is by using biomass, wood and waste products. Currently, people use the catalytic route (enzymatic route) for this. We aim to do this through biomass pyrolysis," Ravinder Gupta, Chief Administrative Officer of IROAF told ET .

While IROAF is working with an aim to use solar energy to convert wood and bio-waste into wood-oil, IIP is researching on ways to convert wood-oil into methanol.

Separately, IROAF is also experimenting with Hydrogen-powered fuel cells to generate power. It has also been given the responsibility of exploring new avenues to fuel Indian Railways.

"We are also working on fuel cell technology. Hydrogen-run fuel cells have also become affordable. On an experimental basis, we are going to fit a hydrogen fuel cell for powering guard vans attached to trains as a standby. Fuel cells can generate power up to 300 kilowatts," Gupta said.

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Business Insider

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Economic Times

CSIR-IHBT

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आइएचबीटी में मिजोरम का प्रतिनिधिमंडल जानकारी हासिल करता हुआ ◆ जागरण

मिजोरम के अफसरों ने किया आइएचबीटी का दौरा

संवाद सहयोगी, पालमपुर : मिजोरम के चंपाई जिले के ग्रामीण विकास से संबंधित 12 सदस्यीय प्रतिनिधिमंडल ने हिमालय जैवसंपदा प्रौद्योगिकी संस्थान (आइएचबीटी) का दौरा किया। प्रतिनिधिमंडल में मिजोरम सरकार के अपर सचिव के. लालरिजोली व जिला ग्रामीण विकास अभिकरण के परियोजना निदेशक सीसी लालछुंग भी शामिल थे। इन्होंने संस्थान के शोध एवं विकास कार्यों का जायजा लिया। संस्थान के मीडिया प्रभारी डॉ. आरके सूद ने बताया कि मिजोरम में सर्वाधिक पाए जाने वाले बांस को लेकर भी प्रतिनिधिमंडल ने तकनीकी जानकारी हासिल की।

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