Paving pathways for new discoveries

CSIR-IICT

In a journey of over seven decades the CSIR-Indian Institute of Chemical Technology (IICT), since its inception in 1944, has achieved a track record of developing solutions in wide spectrum of areas ranging from Pharma and agriculture to industrial development. The IICT has been instrumental in addressing numerous societal challenges and innovative solutions to problems of Indian industries in the area of drugs & pharmaceuticals, agrochemicals, lipids, catalysis, functional materials, environmental, analytical, biological and engineering sciences.

The Institute's efforts have to be completely in tune with the Dehradun Declaration of the Government through time bound delivery centric research programmes that cater to the need of the poorest of poor by translating our knowledge into sustainable products and processes for human welfare. The IICT is unique in its structure since it was established with an objective to serve the society through science, So, both basic and applied research was given equal importance. IICT is equipped with excellent pilot plant facilities to implement the 'concept to commercialisation'approach.



During the initial stages of its inception, IICT started working on pesticides, coal, ceramics, oils and fats adhesives and polymers, natural products and medicinal chemistry. Diverse technologies were developed by the IICT and demonstrated to small and large scale industries. With the changing times priorities and growing needs of the Indian and international clients, IICT diversified into pharma, Energy materials and other sectors of high impact.

Pesticides research resulted in development of new technologies that were used by several industries, while the activity gave birth to bio-pesticides, integrated pest management with chemical attractants such as pheromones/Khairomones. Research activities include the development of intermediates and process routes for pesticides, besides the design of New Chemical entities (NCEs) as protection chemicals.

IGM to develop India Gold Standard

CSIR-NPL

The Mumbai-based India Government Mint will develop the Indian Gold Standard — the first such initiative in the country. The gold standard will come in handy to certify the purity of gold deposits under the Gold Monetisation Scheme.

The country currently imports its gold reference material. The India Government Mint (IGM) will now develop the country's first gold standard — Bharatiya Nirdeshak Dravya — with research and development inputs from Bhabha Atomic Research Centre (BARC) and CSIR-National Physical Laboratory (NPL).

In a press statement issued on Thursday, the IGM said it signed an agreement with BARC and CSIR-NPL to develop the standard on October 28 on the occasion of dhanteras. The IGM, which is into gold melting, refining and assaying, was selected as the producer of the gold standard.

"Gold reference standard is indispensable in gold and jewellery hallmarking and has assumed greater importance in the government's Gold Monetisation Scheme," the press release said.

It added that it will be useful for collection and purity testing centres (CPTC) to certify the purity of the gold deposits under GMS.



The press statement added that developing this reference material within the country would be another addition to the government's 'Make in India' campaign and save foreign exchange (spent on importing the standard) and dependence on foreign countries.

 $7^{ ext{th}}$ November, 2016

CSIR told to make shoes for budding atheletes

CSIR-CLRI

Kalyan Ray

NEW DELHI: The central government has asked the Council of Scientific and Industrial Research (CSIR) to make affordable sports shoes for budding athletes whose performances suffer in the absence of goodquality sports gear.

The decision was taken months after India's dismal performance in the Rio Olympics—barring the individual brilliance of P V Sindhu, Sakshi Malik and Dipa Karmakar—following which the government announced plans to improve sports infrastructure for the youngsters.

As part of the plan, Chennaibased Central Leather Research Institute (CLRI) —one of the CSIR laboratories—has been tasked with making goodquality and affordable sports shoes within the next one year. They would cost a fraction of the imported staff. "The CLRI will make sports shoes for Indian athletes at a fraction of cost. The imported shoes cost \$150-200 (Rs 10,000-12,000) per pair," said Union Science Minister Harsh Vardhan. The ministry has asked CSIR to put this programme on fast track.

"Our target is not the established athletes but the youngsters in schools and colleges, who take part in block or district-level competition. We will rope in Indian footwear companies that will manufacture these shoes based on our technology," CLRI director B Chandrasekaran told DH. A pair of shoes is likely to cost around Rs 1,000.

CLRI runs a footwear design centre inside its campus in Chennai, where the institute in the past has designed specialised shoes for diabetic patients, for kids and formal shoes.

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MINE of dreams

CSIR-CIMFR

Growing up hearing the stories her father told her about mines, Chandrani Verma had one passion — to join the team!

The mining industry is considered to be a male-dominated field. However, that did not deter Chandrani Verma from Vidarbha from pursuing her dream. It has been a tough fight but she has stuck with it and won her battle. At 39, she is the first Indian woman to complete a PhD in mining, according to the Visvesvaraya National Institute of Technology (VNIT), Nagpur.

Verma's father worked as a mining engineer in Western Coalfields Limited, in Chandrapur, Maharashtra. He would always tell her stories about what happened in the mines and it held her in thrall. One incident she recalls was when a fire broke out in the mines and her father was forced to remain in office for two days. She was impressed at the way her father and his colleagues had handled the situation. This further strengthened her resolve to work in the same field as her father.

Striving to succeed

When she was in Std. X, she decided to pursue a career in mining. After finishing her schooling in 1992, Verma completed her diploma in Mining and Mine Surveying from Nagpur's Government Polytechnic College. She wanted to pursue a Bachelor's degree in mining, but no engineering college would admit her.



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She started working as a lecturer and at the same time, continued to study. In 2006, she completed her Master's in Mining Engineering (M.Tech) from VNIT, Nagpur, and in 2015, she completed her PhD on Web Pillar Design in Highwall Mining under the guidance of Dr. N. R. Thote, Professor, Mining Dept., VNIT, and well known Numerical Modeling Expert, Dr. John Loui Porathur, Principal Scientist, CIMFR, Nagpur.

Verma was the only woman candidate who attended the interview at Central Council of Scientific and Industrial Research-Central Institute of Mining and Fuel Research (CSIR-CIMFR). While most members of the interview panel were hesitant to recruit a woman as a researcher in mining, one of the interviewers, Dr. Achyuta Krishna Ghosh, insisted that they recruit her as he saw her passion and capability.

There has been no looking back since then, and Verma is currently working as a senior scientist at CSIR-CIMFR.

Regardless of the crusades she fought to get to where she is today, things have not changed much in that sector. She says, "Nagpur University still doesn't allow girls. A woman is still prohibited from working underground, except for a visit of few minutes. I try to work underground as much as I can to gain practical experience..."