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## KABIL and CSIR-IMMT sign MoU for Technical and Knowledge cooperation for Critical Minerals

CSIR-IMMT

10<sup>th</sup> April , 2024

Khanij Bidesh India Limited (KABIL) has signed a Memorandum of Understanding (MoU) with the Council of Scientific and Industrial Research - Institute of Minerals and Materials Technology (CSIR-IMMT) for Technical & Knowledge cooperation for Critical Minerals. The MoU was signed by Shri Sadashiv Samantaray, Director (Commercial), NALCO & CEO, KABIL and



Dr. Ramanuj Narayan, Director, CSIR-IMMT, in the presence of Shri Sridhar Patra, CMD, NALCO & Chairman, KABIL, at NALCO Corporate Office in Bhubaneswar, today.

Under the MoU, KABIL will leverage the technical expertise and services of CSIR-IMMT to undertake various projects, including the design and analysis of metallurgical test work-plans, development and review of process flowsheets, and the selection of process technologies for mineral processing, beneficiation, and metal extraction. Furthermore, the agreement will also embark on joint research and facilitate the exchange of scientific information between the two entities.

Expressing his happiness at being associated with CSIR-IMMT, Shri Sridhar Patra, CMD, NALCO & Chairman, KABIL, said that this collaboration will foster a thriving environment needed for exploration of critical minerals. Advancing scientific research and technology development in the mineral and metallurgical sectors are essential to the growth and sustainability of the Indian mining industry and ultimately will play a pivotal role in meeting mineral security of the nation as well as domestic requirements, he said.



KABIL is a JV company of three Indian public sector undertakings - National Aluminium Company Limited (NALCO), Hindustan Copper Limited (HCL) and Mineral Exploration and Consultancy Limited (MECL), under the aegis of Ministry of Mines, Government of India. Mandate of KABIL is to identify, explore, acquire, develop, mine, process and procure critical and strategic minerals to ensure supply side assurance and mineral security of the nation for meeting domestic requirements and give a big push to Make in India initiative.



## CSIR-CCMB ties up with Blockchain For Impact For biomedical research

CSIR-CCMB

10<sup>th</sup> April , 2024

Centre for Cellular and Molecular Biology (CCMB), a premier life science research organisation under the Council for Scientific and Industrial Research (CSIR), has forged an alliance with Blockchain For Impact (BFI) under the BFI-Biome Virtual Network Program to accelerate biomedical research and innovation in the country.

Under this program, BFI will allocate over US\$ 600,000 during the course of three years and leverage the state-of-the-art facilities and expertise at CCMB to support interdisciplinary and collaborative translational research projects in the field of biomedical science and innovation.

BFI-Biome Virtual Network Program is a pioneer initiative bringing together research institutes and incubators under one umbrella to foster stakeholder collaborations. The launch event was held here in the presence of CSIR-CCMB director Vinay Nandicoori, senior scientist Manjula Reddy from the institute and representatives from BFI including CEO Gaurav Singh, Program Director Pooja Agrawal and senior advisor Satya Prakash Dash, said an official release on Wednesday.

CSIR-CCMB will be facilitating centralised national access to the most modern techniques in the interdisciplinary areas of biology. Expressing his “delight” at the partnership, Dr. Nandicoori said, “it will allow us to attempt projects with sound science and translational value. We hope that the outcomes from these projects would benefit Indian’s healthcare needs at large.”

BFI CEO Gaurav Singh explained that through two verticals — Biomedical Research and Innovation, district full-stack partnerships and process-driven innovation funding and support — the program will work towards addressing critical gaps in the country’s healthcare sector.



Program Director Pooja Agrawal said virtual network intends to develop long-term solutions through biomedical innovation and the partnership with CCMB “will help accelerate the translation of scientific discoveries into impactful healthcare solutions.”

BFI was set up during the second wave of COVID pandemic to support those in need of help through supply of medical equipment, vaccines and relief kits. Now, the focus has transitioned towards early identification and prevention activities through capacity building, genome sequencing, adding hospital beds, vaccination and awareness campaigns, added the release.



## How lavender turned small farmers into big businessmen in J-K's Doda

CSIR-IIIM

10<sup>th</sup> April , 2024

When lavender cultivation was first introduced to Bhandarwah subdivision in Jammu and Kashmir's Doda district in 2015, most farmers were sceptical and just a handful gave it a go. Today, these early adopters have significantly expanded cultivation, employ 30-40 people each on a full-time basis, have their own distillation units for making lavender oil, and market their products in different parts of the country.

Once a small-scale farmer, Bharat Bhushan from Lehrote village is among the success stories. Having dropped out of school after class 10, he now earns Rs 1-1.5 lakh a month. In 2018, he bought the family's first car – for his son – and later, another one for himself.

Another early adopter, Touqeer Bagban, has studied up to class 11. “Before lavender cultivation, I had a motorcycle. Today, I have a Thar,” said Bagban, who is from Vasuki Dera mohalla of Bhandarwah town.

Farmers in several villages of Bhandarwah subdivision are increasingly moving to lavender cultivation from their traditional maize crop, bringing with it a marked improvement in livelihood. According to officials, more than 700 acres of farmland has been brought under lavender cultivation in the area since 2017, and another 100 acres is set to be added.

The crop was officially introduced in Bhandarwah by the Council Of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, in 2015.

Until 2017, no one in Tipri, Lehrote, or Karyan – villages with nearly 200 households – had a four-wheeler, and most of the houses there were kutcha. In Tipri, former sarpanch Om Parkash started cultivating lavender instead of maize in 2016, and two years later, he became one of the first in the village to own a car, a Maruti Alto.



Now, the entire village cultivates lavender, and around half of the 60 households have a vehicle. The situation is similar in Lehrote and Karyan. Moreover, nearly all houses in the three villages – all in Tipri panchayat – are now pucca. “Earlier, I used to grow a maize crop and earn only Rs 15,000-20,000 from it. After lavender cultivation, I started earning Rs 1-1.5 lakh a year,” said Nek Chand of Tipri.

### **Farmers to industrialists**

Lavender, which can be grown in areas that experience snowfall and have a hilly terrain, blossoms and is ready for harvesting two-and-a-half years after it is planted. The same plant can bear flowers for 18-20 years, and does not require the amount of insecticides, pesticides, and other chemicals used on conventional crops like maize and paddy.

Dr Zabeer Ahmed, director of CSIR-IIIM, Jammu, said: “In 2014, we tried to persuade farmers to start lavender cultivation, but they were reluctant in view of the risks involved in switching over from their conventional maize crop.” In 2015, he said, lavender cultivation was introduced in Bhaderwah under the CSIR’s Aroma Mission.

Bharat Bhushan and Touqeer Bagban were among just a handful of farmers to take it up at the time. Now, Ahmed said, they are industrialists. They are not only making oil from lavender flowers, but are also involved in further development of the product, like manufacturing perfumes, soaps, agarbatti, room fresheners, and so on, and selling them in the market. They have even established their own labs for quality testing of the oil, and one of them also has a marketing office in Goa.

Both have also formed a cluster of farmers who, too, have started growing lavender on their land. Ahmed said CSIR plans to distribute lavender plants to farmers in parts of Kathua, Rajouri, Poonch, and the Kashmir Valley, besides Uttarakhand, Himachal Pradesh and the Northeast. He said that 50 distillation plants, including five mobile units, have been set up across the Union Territory of J&K to help farmers extract oil from the lavender flowers. CSIR-IIIM, Jammu, provides lavender growers end-to-end support, from supplying them



quality planting material, to training them, helping them with distillation, and providing them market linkages.

### A small worry

However, the sharp decline in the price of lavender oil, now around Rs 2,500-3,000 per litre as opposed to Rs 12,000 a few years ago, is a worry. “We have to sustain this prosperity and the subsequent change in the lifestyle of these farmers,” Dr Ahmed said. The price drop has been attributed to the import of oil from Bulgaria, France and China by buyers elsewhere in India, he explained.

At the same time, many farmers have found a way to work around the decline in lavender oil prices – they dry and sell the lavender flowers before making oil from them.

Touqeer Bagban is one of them. “Last year, I purchased dried lavender flowers from farmers worth Rs 3 crore, and sold them to buyers elsewhere in the country, earning a profit between Rs 1-1.5 crore,” he said. The benefit of selling dried flowers is that the buyer knows there is no adulteration, and apart from extracting oil from it as per requirement, the buyer can also use it for other products, Bagban said, adding that dried flowers also attract more import duties and so bringing them from abroad becomes more costly.



## Lucknow University, CDRI sign up for mutual exchange programmes

CSIR-CDRI

09<sup>th</sup> April , 2024

Lucknow University (LU) has joined hands with the Central Drug Research Institute (CDRI) for several mutual exchange programmes in research and academic training.

LU spokesperson Durgesh Srivastava said that LU and CDRI will be conducting collaborative research programmes in specific fields of interest and the submission of collaborative projects for extramural funding (such as CSIR, DST, DBT, ICMR, and other funding agencies).

“Also, the collaboration will organise training programmes for postgraduates and research scholars, faculty exchange programmes and sharing of instrumentation facilities,” he said.

He said that these agreements will help in exchanging knowledge, utilisation of the start-of-the-art facilities for research and improving research quality.

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## ‘Made in India devices in hospitals in 5 to 10 years’

CSIR-NEERI

09<sup>th</sup> April , 2024

In the next 5-10 years hospitals in the country will be well-equipped with Made in India equipment, ending reliance on imports of high-end medical devices, said Defence Research and Development Organisation (DRDO) director-general (life sciences) UK Singh on Monday. “Currently, India is importing medical equipment worth Rs40,000 crore every year,” he said.

Talking about projects underway in various DRDO labs, Singh said they have achieved partial success in developing Cochlear implants too. “The device is being imported on a large-scale,” he said.

Singh was delivering a talk on various projects ranging from infrastructure, biofuels, agriculture, biotech, health and information technology during the 66th foundation day of CSIR-Neeri at its auditorium. “The govt is supporting production-linked investment in areas where most of the medical equipment are being manufactured. Investigation machines like MRI have already been made in Mumbai and Bengaluru,” he said.

Regarding biotechnological advancements, Singh said a lot of research needs to be done in genomic interventions. “Diseases like cancer can be intercepted much in advance. Some pharma firms are offering services on predicting disease one is likely to suffer based on genomic sequences. We intend to develop models for human organs like guts,” he said.

DRDO labs are also engaged in developing chemical biological radiation and nuclear (CBRN) warfare drugs and antidotes, he said. “In case of clashes with enemies, drugs and antidotes could be used. There are various specific drugs being made by DRDO labs. We have already achieved more than 50% of requirements,” he said. According to Singh, India is much ahead in drug development and production than any other country. “Indigenous sources are being utilized. India is also the biggest vaccination, drug development and drug production centre,”



he said. He said DRDO has developed many medicines for the armed forces and naval ships venturing in high sea. “One junior doctor is allowed to go with them but what if there is a major trouble. Helicopter too has a limited range. So, do they abort the mission? We have developed telemedicines which can be delivered and configuration is given where it is required. It can also help elderly people living alone.

Earlier, CSIR-Neeri director Atul Vaidya outlined the genesis of the institute. He said the institute has positioned itself to address the challenges posed by environmental issues. He described various parameters on which CSIR-NEERI is performing well, including technological developments and planning aligned with the vision for 2047 to ensure sustainable development.

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## CIMAP sets up 'plant chamber' to help facilitate research work

CSIR, CIMAP, CDRI

06<sup>th</sup> April , 2024

The Central Institute of Medicinal and Aromatic Plants (CIMAP) has set up a state-of-the-art 'Plant growth chamber' facility on its campus which will enable scientists and researchers to grow plants needing different climatic conditions. Specific temperature required for the growth of a plant or light can be maintained in the chamber.



The 'Plant growth chamber' facility was inaugurated by director of the National Botanical Research Institute Ajit Kumar Shasany during the CIMAP's Foundation Day celebrations on Friday. "The chamber allows researchers to control environmental conditions. Our scientists can control humidity, temperature, light and other factors during their research work and experiments," said CIMAP director Prabodh Kumar Trivedi.

He further said that when working with plants, one of the biggest issues is the environment in which plants live. Some plants are resilient, while others are sensitive. Different plants need different conditions to grow. When a scientist grows plants for a specific purpose or conduct experiments to collect data, he needs a controllable environment and this chamber allows precise control of the environment and is designed to create an ideal condition for specific plant growth task.

"For example, poppy plant is cultivated in January in our state, but with the help of growth chamber, you can set the desired temperature and light and grow it all year round," the director added. He also highlighted the contribution of the institute in the last six decades. He



said that it was the effort of the institute that made India a leading exporter of essential oils in the form of methanolic mint and lemongrass, playing a prominent role in serving the society and the industry.

Scientist Gopaljee Jha from the National Institute of Plant Genome Research delivered a lecture on 'Exploiting fungus eating bacterium and its molecular secrets for sustainable agriculture.'

Around 300 scientists, research students and staff of the institute, director of CSIR-Central Drug Research Institute Radha Rangarajan and others were present.



## CSIR IIIM Initiates Tulip Cultivation In Pulwama Under CSIR Floriculture Mission

CSIR-IIIM

06<sup>th</sup> April , 2024

The CSIR Indian Institute of Integrative Medicine has made significant strides in the cultivation of various Tulip varieties at its Field Station Bonera in South Kashmir's Pulwama district as part of the CSIR Floriculture Mission. This initiative marks a noteworthy achievement as it's the first time the Field Station has undertaken the trial cultivation of multiple Tulip cultivars.



Eight distinct varieties of Tulips are currently blooming enchantingly in the sprawling Field Station, adding vibrant hues to the landscape. The primary objective of this initiative is to develop and standardize agro-technologies for mass-producing quality tulip bulbs in open field conditions. Leveraging the favorable agro-climatic conditions of the Kashmir valley, the initiative aims to enhance income generation for farmers through both cut flower and bulb production, thereby empowering them for import substitution.

Dr. Zabeer Ahmed, Director of CSIR IIIM Jammu, inaugurated the opening of the tulip experimental field. He highlighted that under the CSIR Floriculture Mission, the institute has been supporting various stakeholders including farmers, self-help groups, florists, nursery growers, and agri-entrepreneurs for production, value addition, and trade of different cut, loose, and ornamental crop cultivars. Since its launch in 2020, the Mission has benefited more than 2000 farmers across different districts of the Union Territory of Jammu and Kashmir through various initiatives.

Dr. Shahid Rasool, Nodal Scientist of CSIR Floriculture Mission, emphasized the importance



Dr. Shahid Rasool, Nodal Scientist of CSIR Floriculture Mission, emphasized the importance of expanding the area under cultivation and scientific production of cut and loose flowers in Jammu and Kashmir. He noted that Tulips are currently imported from Holland, and the institute's initiative aims to explore the feasibility of local cultivation and identify suitable locations for indigenous bulb production. Dr. Rasool stressed that the favorable climatic and soil conditions of the Kashmir Valley make it suitable for Tulip cultivation, presenting significant economic opportunities and establishing the region as a center for high-quality flower production.

Furthermore, the large-scale generation of indigenous planting material will empower farmers to extensively cultivate Tulips, thereby boosting their income and livelihood opportunities. By adhering to standardized cultivation methods and employing techniques like polyhouse cultivation with controlled temperature conditions, including bulb forcing and programming, farmers can increase their yield of these premium flowers as cut flowers. This would also enable off-season production of Tulip cut flowers to meet the heightened market demand during peak occasions across the country.



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