

CSIR IN MEDIA



CSIR

NEWS BULLETIN 26 TO 31 MARCH 2021



MEMORANDUM OF UNDERSTANDING SIGNING ON TECHNOLOGY DEVELOPMENT FOR HOLISTIC UTILIZATION OF RED MUD FOR EXTRACTION OF METALLIC VALUES & RESIDUE UTILIZATION

CSIR-IMMT, NML

31th March, 2021

A Memorandum of understanding (MoU) was signed between R&D organizations CSIR-Institute of Minerals and Materials Technology (CSIR-IMMT), Bhubaneswar; CSIR-National Metallurgical Laboratory (CSIR-NML), Jamshedpur; Jawaharlal Nehru Aluminium Research Development and Design Centre (JNARDDC), Nagpur; and Aluminium Industries- National Aluminium industrial and R&D partners. Company Ltd. (NALCO), Hindalco Industries Ltd., Vedanta Ltd. on



31st March 2021 on “Technology development for holistic utilization of red mud for extraction of metallic values and residue utilization”. Bauxite residue (red mud) is produced in the process of alumina extraction from bauxite. Bayer’s process is the principal industrial means of processing bauxite to produce alumina (aluminium oxide). Statistically, production of 1-ton alumina generates 1-1.5 tons of red mud depending upon the mineralogical composition of the bauxite and extraction efficiencies. India is the fourth-largest producer of aluminium in the world with a share of around 5.3% of the global aluminium output, hence, the development of red mud’s effective handling, storage, usage and management is necessary for the welfare of the global community. Further, bauxite mining and subsequent aluminium production is concentrated in Odisha with ~67% of the total annual production of alumina and ~64% of annual production of aluminium in the country. There have been scattered efforts across India on red mud’s utilization. However, a holistic utilization hasn’t been quite dealt with. Rare Earth Elements (REEs) are strategic elements crucial for sustainable energy systems. NITI Aayog has identified red mud to be one of rich secondary source of REEs and has recommended adopting a holistic approach for the utilization of red mud. Thus, apart from extraction of REEs, attempts

will also be made to extract iron, alumina and titania present in red mud. The MoU outlines financial and technical roles of the participating

Prof. Suddhasatwa Basu, Director, CSIR-IMMT; Dr. Ashok Kumar Sahu, Head, Strategy Planning & Business Development, CSIR-IMMT; Shri Manasa Mishra, Director (P&T), NALCO; Shri Subrat Kar, Group GM (Research & Development), NALCO; Shri Rakesh Mohan, Director (Technical), VEDANTA; Shri Rajan Babu, Head, Bauxite & red mud Management, Lanjigarh, VEDANTA; Shri Ardhendu Mohapatra, Jt. President, Corporate Affairs, Hindalco Industries Ltd.; Shri Soubhagya Kumar Tripathy, GM, Corporate Sustainability, Hindalco Industries Ltd ; Dr Upendra Kumar Singh , Principal Scientist, JNARDDC; and Shri Sudhakara Rao K, RDPD, CSIR-NML have participated in the MoU signing.

Published in:

Odishanewstoday

Swadeshi HANSA-NG trainer aircraft with advanced features rolled out in Bengaluru

CSIR-NAL

31th March, 2021

BENGALURU: CSIR National Aerospace Laboratories (NAL) rolled out its HANSA-NG (Next Generation) aircraft on Wednesday at the aircraft hangar at the Belur campus. Shekar C Mande, DG CSIR, held the ceremonial rolling out with R Madhavan, Chairman and Managing, HAL. The all-composite HANSA-NG, certified in 2000 by the DGCA under the JAR-VLA category, has been revitalised to cater to the demand for trainer aircraft.



With the growing need for an advanced Swadeshi trainer aircraft, the government sanctioned the HANSA-NG project towards the end of 2018.

The trainer aircraft is equipped with IFR-compliant avionics with smart multi-functional displays, a glass cockpit and a bubble canopy design. The selection of a highly efficient digitally controlled Rotax 912 ISC engine with superior performance increased the range and endurance.

Approvals were obtained from DGCA and manufacturing of HANSA-NG was initiated in September 2020.

The Indira Gandhi Rashtriya Uran Akademi (IGRUA) signed an MoU with CSIR-NAL as a launch customer of HANSA-NG for pilot training. They will pick up the first five aircraft, said Joint Secretary, Ministry of Civil Aviation Amber Dubey.

The Centre for Civil Aircraft Design and Development (C-CADD) at Bangalore's National Aerospace Laboratories (CSIR-NAL), now renamed as Roddam Narasimha Civil Aircraft Centre (RN-CAC), was inaugurated on the occasion.

The centre is named after renowned Indian aerospace scientist and engineer Professor Roddam Narasimha who passed away in December 2020.

RN-CAC will create the essential nucleus and play the pivotal role in the Regional Transport Aircraft (RTA) programme once the formal approval is received from the government.

Published in:

[Newindianexpress](https://www.newindianexpress.com)

How a bacteria is helping revive an endangered ayurvedic herb in CSIR labs

CSIR-IHBT

31th March, 2021

New Delhi: *Picrorhiza kurroa*, also known as kutki in Himachal Pradesh and Uttarakhand, was listed as a rare and endangered herb species in 1997 after it was indiscriminately harvested from the wild due to its medicinal properties.



For many years now, scientists have been trying to grow kutki using tissue culture in the lab, but their attempts have been unsuccessful as the herb dies within a few months of being shifted from the lab to the greenhouse.

Now, a team at CSIR-IHBT has identified a naturally occurring bacteria, which supports the plant's transition from the lab to the natural environment.

The research revives the country's hope for restoring the herb in the wild.

"The natural population of the plant is too low. This is an indigenous plant. People just go and harvest the plant from the wild, which is why the plant had to be listed as rare and endangered in 1997," Sanjay Kumar, director, IHBT told The Print.

"These plants are not only commercially important but they are also important for maintaining the ecological cycle, because each plant has its own role," said Kumar, who is also one of the authors of the peer-reviewed study, published in the journal Genomics.

In Ayurveda, *picrorhiza kurroa* is used for treatment of digestive disorders and is also said to have a protective effect on the liver. Studies show that it may also improve the immune system.

How the experiment was conducted

Since the plant would die after being shifted to the lab, researchers at IHBT decided to use tissue culture to amplify the number of these plants.

“Essentially, they would be grown in tests tubes or conical flasks in the lab and then planted in the fields,” Sanjay said. Usually in tissue culture, cuttings from the shoot of the plant is used. But for this plant, the team used the leaves, Amita Bhattacharya, one of the researchers involved in the study, told The Print. “Each leaf was cut into a number of segments out of which thousands of plants could grow,” she said. “However, whenever we tried to transfer the saplings from the lab to the greenhouse, which is at lower altitude, all of the plants would die within two to three months,” she said.

That is when the team sought help from Rakshak Kumar, a microbiologist at CSIR.

“We went to the natural settings where the plant grows in Lahaul and collected the soil. We then isolated the bacteria from it. We found hundreds of bacteria, we checked which ones have plant growth promoting activity,” Rakshak Kumar told The Print. The idea was to introduce the good bacteria from the natural world into the tissue culture.

The researchers identified a bacteria known as serratia quinivorans PKL:12 which increased the vegetative growth and survival of the plantlets most effectively.

“We did in-pot experiments to check which bacteria is enhancing the growth of the plant,” he said. “The shoot length was also 2.64 fold higher,” he added.

The study found that as much as 86 per cent of the plantlets survived after 180 days post-treatment with the consortium of bacteria identified by the team, as opposed to 56 per cent when the plant was left untreated.

The team will now distribute the cultured saplings among farmers in Uttarakhand and Himachal Pradesh. They hope that the herb will be revived with their efforts.

Published in:

[Theprint](#)

Atal Innovation Mission And Gates Foundation Select Pune-Based Venture Center To Lead Its Science-Based Deep Tech Startups Mentoring Program

CSIR-NCL

31th March, 2021

Pune, 31 March 2021: In a major push towards deep technology and driving the country to become a digitally transformed nation, Atal Innovation Mission (AIM), NITI Aayog today launched AIM-PRIME (Program for Researchers on Innovations, Market-Readiness & Entrepreneurship), a program to promote and support science-based deep-tech startups and ventures across India.

In this regard, AIM has joined hands with Bill & Melinda Gates Foundation (BMGF) to launch this nationwide program which will be implemented by Venture Centre – a non-profit technology business incubator hosted by CSIR-NCL. The first cohort of the program is open to technology developers (early-stage deep tech start-ups, and scientists/ engineers/ clinicians) with strong science-based deep tech business ideas. The program is also open to CEOs and Senior incubation managers of AIM Funded Atal Incubation Centres that are supporting deep tech entrepreneurs.

Deep technology is an outcome of very intense research and development (R&D) with high knowledge content. Consequently, the entrepreneurial journey emphasizes different aspects and requires a different approach to navigating the de-risking process and bringing such ideas to market. The benefits of this program are aimed at addressing these specific issues through training and guidance over a period of 12 months. Candidates selected for the program will get access to in-depth learning via a comprehensive lecture series, live team projects, exercises, and project-specific mentoring. They will also have access to a deep tech start-up playbook, curated video library, and plenty of peer-to-peer learning opportunities. The AIM-PRIME program is specifically tailored for the rapid scaling up of deep-tech science ventures in India, providing not just the necessary intellect and support but also the exposure they rightly deserve.

The announcement was made as a part of the virtual programme attended by officials of AIM, NITI Aayog, BMGF, Venture Centre, Incubators, start-ups and mentor amongst other beneficiaries. As a part of the launch webinar, Dr Ashley Stevens – President, Focus IP Group, and Past President, AUTM was invited to talk on global experience on building vibrant high-tech clusters, innovation ecosystems and local technology commercialization capabilities

Speaking during the virtual launch of the program, AIM Mission Director Shri R. Ramanan said, “AIM has been at the forefront of promoting innovation and entrepreneurship throughout the Nation through its various programs for school students, budding entrepreneurs, and incubators. AIM PRIME aims to take science-based deep tech entrepreneurship to a new level in India by drawing lessons from global and national best practices.”

Anjani Bansal, Deputy Director, Global Development at BMGF said, “We are thrilled to partner with AIM and Venture Centre to advance the deep tech startup ecosystem in India. This initiative builds on the foundation laid by AIM to support startups and provides specialized services to transition research to industry.”

Director of Venture Centre Dr Premnath said, “The hallmark of the AIM-PRIME program shall be hands-on practical insights and mentoring from experts and mentors who have been nurturing science-based deep-tech startups in global innovation hotspots as well as in India.”

The program is catalyzed by the office of the Principal Scientific Advisor, and the Pune Knowledge Cluster. Details on the AIM-PRIME program are available at aim.gov.in or www.primeprogram.in

The official launch for the program was attended by officials of AIM, AIM Supported incubators and start-ups, officials from the Office of the Principal Scientific Advisor, Venture Center mentors, and international faculty and experts.

Venture Center, hosted by CSIR-National Chemical Laboratory, Pune is India's leading inventive enterprises incubator. It is the recipient of the National Entrepreneurship Award 2019, the Asian (AABI) Incubator of the Year Awards for 2018, and the National Award for Technology Business Incubators from the President of India in May 2016. Venture Center is also recognized and supported by DST-NSTEDB and BIRAC.

MMCRI's lab does 4.5 lakh swab tests

CSIR-CFTRI

30th March, 2021

The Microbiology Laboratory of the Mysore Medical College and Research Institute (MMCRI) at the KR Hospital here has successfully carried out 4.5 lakh swab tests.

MMCRI Dean and Director C.P. Nanjaraj said the Viral Research and Diagnostic Laboratory (VRDL) that works under the Department of Microbiology has been carrying out 4,000 to 4,500 swab tests daily. The lab has been carrying out RT-PCR tests since March last year.

In a span of one year, the lab has done 4.5 lakh swab tests. Doctors, microbiologists and the staff have worked tirelessly to combat the pandemic. They had worked in three shifts to give faster results for controlling the spread of the infection.

The lab at the MMCRI was in the beginning carrying out tests of samples sent from other districts when they lacked the testing facilities. After the districts, including Kodagu, Mandya and Chamarajanagar, also got the COVID-19 labs, they started doing the tests in their own facilities and the samples sourced from Mysuru district were tested at the MMCRI lab besides the lab set up by the CSIR-CFTRI.

Dr. Nanjaraj said the tests have gone up as mandated by the government in view of the second wave.

The total number of swab tests done so far in Mysuru is 9.84 lakh, including 9.05 lakh tests done in government lab and 79,471 in private labs.

Presenting data of the sewage surveillance carried out to find the trend of infection in Hyderabad, Prayagraj (Allahabad), Delhi, Kolkata, Mumbai, Nagpur, Puducherry and Chennai, he said it provides an unbiased estimate of numbers since the sampling is not done at individual level. On the other hand, the numbers obtained by regular testing depend on the number of individuals tested.

Mande said sewage surveillance of Covid-19 would be relevant not only to understand the present epidemiology of the disease but would be an indispensable tool for early and easier detection of future COVID-19 outbreaks.

He also suggested setting up air sampling system to monitor viral particles and potential infectivity threat.

Published in:

[Thehindu](https://www.thehindu.com)

CSIR-CCMB, NEERI, IICT

30th March, 2021



Vice-President M. Venkaiah Naidu with the scientists who met him on Tuesday. ■ ARRANGEMENT

CSIR suggests coronavirus surveillance for Parliament

Moots setting up of sewage and air surveillance system

SPECIAL CORRESPONDENT
HYDERABAD

Council of Scientific and Industrial Research (CSIR) has mooted setting up sewage and air surveillance system in the Indian Parliament to find the prevalence of COVID-19 on Tuesday.

Director General Shekhar C. Mande made a presentation to this effect to Vice-President and Chairman of Rajya Sabha M. Venkaiah Naidu in the presence of Centre for Cellular and Molecular Biology (CCMB) Director Rakesh Mishra, IICT Director S. Chandrasekhar, senior scientist Venkata Mohan and Atya Kapley of National Environmental Engineering Research Institute (Nagpur).

Dr. Mande informed the Vice-President that sewage surveillance provides qualitative as well as quantitative estimate of the number of people infected in a popula-

tion and could be used to understand the progression of COVID-19 even when mass scale tests for individuals are not possible. It is a measure to comprehensively monitor the prevalence of the disease

COVID-19

in communities in real time. Elaborating on the relevance of sewage surveillance, Dr. Mande pointed out that COVID-19 patients shed SARS-CoV-2 in stools.

Apart from symptomatic individuals, asymptomatic people also shed the virus in their stools.

Presenting data of the sewage surveillance carried out to find the trend of infection in Hyderabad, Prayagraj (Allahabad), Delhi, Kolkata, Mumbai, Nagpur, Puducherry and Chennai, he said it provides an unbiased esti-

mate of numbers since the sampling is not done at individual level.

Indispensable tool

On the other hand, the numbers obtained by regular testing depend on the number of individuals tested. Hence, sewage surveillance of COVID-19 would be relevant not only to understand the present epidemiology of the disease but would be an indispensable tool for early and easier detection of future COVID-19 outbreaks, the DG maintained.

He also suggested setting up air sampling system to monitor viral particles and potential infectivity threat. The Vice-President complimented the scientists for their work and assured the delegation that he would discuss the issue with the Lok Sabha Speaker, Om Birla and also the government.

Published in:

Hindu Business Line, [Thehindubusinessline](https://www.thehindubusinessline.com)

CSIR-IICT

29th March, 2021

Bharat Biotech, Biovet, Sapigen join hands with CSIR-IICT

Collaboration aimed at developing novel platform technologies, vaccine candidates

OUR BUREAU

Hyderabad, March 29

Bharat Biotech International, Biovet and Sapigen Biologix signed a joint Master Collaborative Agreement (MCA) with CSIR-Indian Institute of Chemical Technology (CSIR-IICT) on Monday for the development of novel platform technologies.

The collaboration will be for bio-therapeutics and vaccines to support indigenous and affordable health care solutions for humans and animals. The collaborators will identify mutually interesting projects to pursue under the agreement.

As part of this MCA, the industry collaborators will provide necessary financial support to CSIR-IICT for developing key raw materials required, and also perform in vitro and in vivo studies for further development of potential vaccine candidates and bio-therapeutics formulations to be designed by the collaborators.

The broad-based MCA enables the partners to take up futuristic development activities in other related areas as well.

'Aatmanirbhar vision'

The partners intend to strengthen the excellent



The alliance aims to support indigenous and affordable health care solutions

working relationship between the two organisations, by conducting studies on futuristic vaccines, bio-therapeutic formulations, delivery strategies and also explore innovative solutions to the vaccination administration process.

Speaking on the occasion, Shekhar C Mande, Director-General, CSIR said the collaboration would help realise

India's 'Aatmanirbhar Vision' and contribute to disruptive technologies in the healthcare arena. "The expertise of other CSIR labs will also be pooled in, if necessary, to take forward this vision," he added.

Krishna Ella, CMD, Bharat Biotech said, "This is a big forward-thinking step to explore future innovative solutions by design, and developing novel vaccine platforms in association with Publicly-funded Institutions like CSIR-IICT, by pushing the boundaries of the advanced technologies."

"We look forward to fortifying this collaboration and strengthening the innovation ecosystem of human and animal Life Sciences," he added.

Published in:

Business Line, Hindi Milap, [Thehindubusinessline](https://www.thehindubusinessline.com)

Produced by Science Communication and Dissemination Directorate, (SCDD), CSIR, Anusandhan Bhawan, New Delhi

'Per-capita green space of city is shrinking'

CSIR-NEERI

29th March, 2021

The green space for the city is limited to 2.32-0.27 sq mtr which should be 10-12 sq mtr as per URDPFI-14 guidelines 42% urban dwellers travelling over 500 m to use a green space



The per-capita green space of Nagpur city is limited to 2.32-0.27 sq mtr and it is

shrinking further, revealed a study conducted by CSIR-National Environmental Engineering Research Institute (CSIR-NEERI) recently. As per Urban and Regional Development Plan Formulation Implementation (URDPFI) guidelines, 2014 issued by Ministry of Housing and Urban Affairs recommend that per-capita green space is 10-12 sq mtr and 1.2 to 1.4 Ha of green space per 1,000 population but it is very less in Nagpur city.

The survey took place at 65 public urban green spaces (parks, gardens and playgrounds) to assess the health of public green spaces in the city and it was observed that many of them were not managed appropriately and hence, do not have sufficient green cover to fulfil growing demands of urban-dwellers of Nagpur. West Nagpur emerged as the best zone that have well managed green spaces followed by East, North and Central Nagpur. East and North of Urban Nagpur were having largest number (4) of insufficiently managed parks followed by one each in Central and Western Zone. Dr Shalini Dhyani, Senior Scientist CSIR-NEERI along with Dr Atya Kapley, Head Director's Research Cell, CSIR-NEERI designed and carried out the survey.

The project was overseen by Dr Rakesh Kumar, Director, CSIR-NEERI. Three researchers involved in door-to-door survey with many important questions translated in local language out to 1,050 households in 100 wards of Nagpur in early 2020 before the pandemic lockdown. Though, 51 per cent of survey respondents agreed that Nagpur has sufficient greenery and 23% respondents strongly disagreed to it. It was interesting to note that 42% urban-dwellers were travelling more than 500 m to use a green space, 28% were travelling 200-500 m, 20.5% were 50-200 m while, only 9% reported ease of access and this is alarming for a city like Nagpur that was once one of the greenest cities in Western India.

As per the survey, 44% citizens were visiting a park or a garden on daily basis, 35% during weekends, 15% once a month because their busy schedules or insufficient access followed by 7% who mentioned accessibility and maintenance issues behind their infrequent visits. “This interest of large number of respondents shows the awareness and connectivity with nature of locals that needs to be further enriched by reducing the demand supply gap to urban green access” stated Dr Atya Kapley to The Hitavada. Total 50% of respondents were fine with the management of public green spaces in the city while rest of 50% were totally dissatisfied. Study highlighted 50 locations as potentially healthy green zones of the city followed by 44 that needed focus and hand holding for restoring them and ensuring that remaining green pockets don’t degrade and 19 areas emerged as critical areas in terms of green zones that will require immediate attention using Natural and Green Infrastructure (GI). Dr Dhyani recommends “Prioritising actions and funds in respective green, orange and red areas by initiating ward specific management plans can help but specific needs depending on ward population, build up density and area needs to be considered during planning itself”.

Published in:

[Thehitavada](https://www.thehitavada.com/)

SIAM Hosts Its 11th Lecture Series On Management Of Hazardous Chemicals In Automotive Sector

CSIR-NEERI

28th March, 2021

New Delhi: In order to address the environmental implications, the auto industry apex body, Society of Indian Automobile Manufacturers (SIAM), organised its 11th Lecture Series on, “Management of Hazardous Chemicals in Automotive Sector: National & International Regime”, on a virtual platform, today. The virtual lecture session Management of Hazardous Chemicals is even more relevant in view of recent announcement of draft Scrappage Policy. Furthermore, there are slew of other policy and regulatory interventions to promote private investment towards the creation of sustainable and environment-friendly recycling ecosystem led by the automobile industry.

There is a growing focus on sustainable material management and environmentally safe disposals hazardous chemicals, therefore, it is imperative to share knowledge and best practices including capacity building for management of hazardous chemicals including their disposal in environment friendly and economically viable way. In view of this, the lecture series highlighted the importance of conjoint efforts from the government, auto component industry and auto industry for developing better and safer strategies for management of chemicals in automotive sector.

The panel comprised of industry veterans, including the likes of Dr Atul N Vaidya, Head of Chemicals & Hazardous Waste Management Division, National Environmental Engineering Research Institute (CSIR- NEERI); Dr Jitendra Sharma, Program Management Officer, UN Environment Program (UNEP); Mr Ravi Agrawal, Director, Toxic Link; Mr Craig Howard, Senior Engineer (Chemical Regulatory Compliance), General Motors USA; Mr Kiran Kumar Jagatap, Senior Manager, General Motors USA; Mr B Prabhaker, CEO Product Compliance Consultancy Services; Dr Sukumar Devotta, Former Director (CSIR-NEERI) Subject Expert and Dr Rashid Hasan, Advisor, SIAM.

They shared their valuable insights on the following topics:

Use of Hazardous Chemicals in automotive sector and their and their environmentally sound management

Management & handling of hazardous chemicals: Learnings from International BSR Conventions

BSR conventions & status of POPs & implication for automotive sector

Hazardous chemicals used in automotive sector vis-à-vis existing regulatory regime viz. REACH, GADSL, RoHS etc.

IMDS & its role in the management of Hazardous Chemicals in automotive sector

Mr Prashant K Banerjee, Executive Director, SIAM, said “India’s progress in vehicle safety and sustainable mobility sends a message about what automotive industry has achieved as the milestones which have been encouragement by both policies of the Government and efforts of the industry. Millions of lives can be saved by the safer and sustainable mobility with collaborative efforts of all stakeholders including Government, Industry and Civil Society. SIAM has organized the 11th environment lecture series on ‘Management of Hazardous Chemicals in Automotive Sector: National & International Regime today for sharing knowledge and best practices for stakeholders from OEMs, ACMA, Government, regulatory bodies, etc. The lecture series deliberated on the emerging technologies and strategies for better management of hazardous chemicals used in Indian automotive sector in alignment with global regulatory regime and best practices by applying cradle to grave principle so as to minimize its negative impacts on environment and human health. These SIAM environment lecture series will facilitate not only the environment sustainability but also the business sustainability and putting the country on a sustainable growth path.” The 11th Lecture Series noted that responsible chemical management would need regular and systematic assessing, evaluating and taking all necessary measures to ensure safe chemical tracking throughout the lifecycle and minimize the impact during every stage on environment, human health and climate change.

Published in:

[Indiaeducationdiary](http://indiaeducationdiary.com)

UoM VC Inaugurates Food Scientists' Annual Event

CSIR-CFTRI

28th March, 2021

Mysore/Mysuru: Prof. G. Hemantha Kumar, Vice-Chancellor, University of Mysore, inaugurated the annual celebrations of Association of Food Scientists and Technologists-India (AFST-I), CSIR-CFTRI Campus, at a private hotel in city recently.



The celebrations also featured memorial lectures and award presentation.

The 64-year-old professional Association is based in Mysuru with 40 branches across India. It has around 4,000 members across the globe.

Dr. Sridevi Annapurna Singh, Director, Central Food Technological Research Institute (CFTRI), Dr. A. Jayadeep, Vice-President, Dr. K.V. Harish Prashanth, Secretary and Dr. Naveen Shivanna, Treasurer and the CEC members were also present on the occasion.

The renovated building of the Association, updated website of AFST(I) and its chapter web portal were also inaugurated by Dr. Sridevi Annapurna Singh.

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