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News Bulletin

6th to 10th September 2019

Produced by Unit for Science Dissemination, CSIR, Anusandhan Bhawan, 2 Rafi Marg, New Delhi

HP leads in production of wild marigold essential oil

CSIR-IHBT 10th September, 2019

In these tough times for agriculture in Northern belt on account of non-remunerative returns and increasing incidences of crop loss owing to wild animals, Himachal Pradesh is flexing its flower power. It has become the largest producer of high quality wild marigold essential oil (4 tonnes per annum) in the country to meet the demand of perfume, flavouring, and condiment industries.

The CSIR-Institute of Himalayan Bioresource Technology (IHBT), Palampur in the Himalayan State is doing its bit in this regard by helping and training farmers introduce high value aromatic crops such as wild marigold, damask rose, lavender, rosemary, lemongrass and mushkbala under CSIR Aroma mission. Dr Sanjay Kumar, Director, CSIR-IHBT said to promote cultivation of these aromatic crops among the farmers, a complete package of agro and processing technologies has been developed and executed in the farmers' fields to help them realize the profits.

In fact, in the last two years, CSIR-IHBT has brought more than 500 hectares area under these crops. Cultivation of wild marigold has resulted in the production of 7.6 tonnes of essential oil in Himachal Pradesh alone with revenue generation of Rs. 5.56 crores benefitting 861 farmers. Different small societies of progressive farmers have been formed in different states by CSIR-IHBT. Nineteen processing units have been set up for these societies to empower the farmers for production of essential oils, said Dr Kumar.

Aromatic crops are widely cultivated around the world due to its high-revenue earning essential oil which is utilized in agrochemical, food, flavoring, perfumery and pharmaceutical industry like wound healing and treatment of eczema, diaper rash,

psoriasis and for skin ointment. Increasing demand of natural personal care products and aromatic cleansing agents is also favouring the essential oil market. “The global essential oils market demand was 226.9 thousand tons in 2018 and projected to expand at a CAGR of 8.6% from 2019 to 2025. To promote cultivation of these aromatic crops among the farmers, a complete package of agro and processing technologies has been developed and executed in the farmers’ fields to help them realize the profits.

Published in:
The Pioneer

CSIR-NCL

10th September, 2019

'Laboratories should play a pro-active role'

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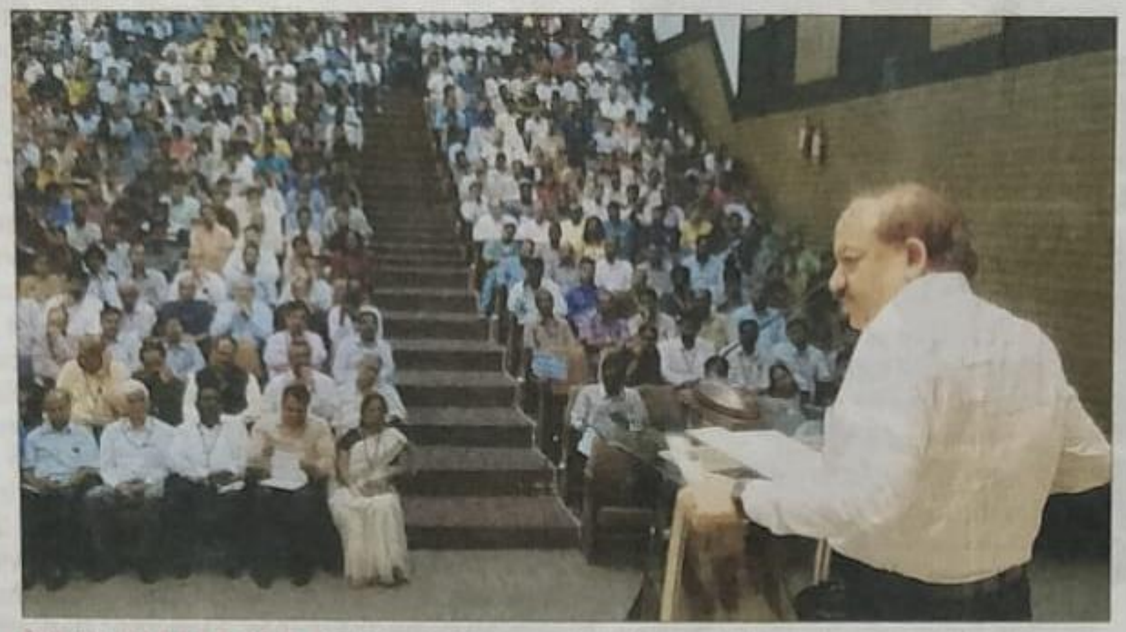
PUNE: Minister of Science and Technology Dr Harsh Vardhan while speaking at the inauguration of various facilities at Council of Scientific and Industrial Research-National Chemical Laboratory (CSIR-NCL) on Monday said, "Laboratories across the country should play a pro-active role and come up with a solution to various societal problems. I have hopes that science can solve the majority of the problems."

He quoted an example of Dehradun Declaration wherein the petroleum laboratory created its own mechanism by collecting the plastic from the city and converting it into diesel.

Dr Harsh Vardhan further said, "Various laboratories in the country have been given targets up to 2022 when we will celebrate the Platinum Jubilee year of Independence. The labs need to identify problems which have been pestering the society and find the solution."



WORDS OF WISDOM: Minister of Science and Technology Dr Harsh Vardhan addressing the CSIR-NCL scientists and staff members on Monday. VAIBHAV THOMBARE

He also said that the government has no dearth of funds. "The laboratories should submit a project and funds will be provided for it. We provide funds to the start-ups right from seeding until it becomes the entrepreneur."

"Until now, the laboratories in the country were not aware of each other's work areas and expertise, but now, these labs are working in co-ordination. They are in-sync and thus know what is going on where," he added.

Shekhar Mande, Director-General of CSIR, NCL Director Ashwini Kumar Nangai were also present. Harsh Vardhan visited the key facilities in pilot plant II and IV, native forest, an ecological experiment to replicate the semi-evergreen forests of the Western Ghats.

Inauguration of DME pilot plant

Harsh Vardhan also inaugurated the DME pilot plant under mission project 'Catalysis for Sustainable Development'. CSIR-NCL has developed indigenous process technology for the production of dimethyl ether (DME) from methanol dehydration. DME is a globally approved alternative ultra-clean fuel to diesel. It performs better than known commercialised processes at lab scale level. Catalyst and process cost is economically comparable with the available processes. DME can be blended with LPG of up to 20%. It is expected to contribute very significantly to PM's Ujjwala Yojana scheme in reducing LPG imports. An MoU will be signed with SignAssure Services (India) Limited to handover the CSIR-NCL Catalyst and Process for DME.

Visit to CEPD

Further, the Union minister Harsh Vardhan visited a recently developed pilot facility at CEPD for process intensification, process scale-up studies and demonstration for various internal and industrial projects.

The facility comprised skid-mounted continuous reactors setups and multipurpose distillation columns. The pilot plant has been designed and developed as modular units having the multipurpose facility while keeping in mind specific products such as paracetamol, ibuprofen and other drugs which can be extended to industrially important hazardous reactions such as nitration, oxidation, hydrogenation, alkylation, esterification and carbonylation etc. Demonstration of eco-friendly immersion of POP Ganesh idol, shudh jal plant, fuel cell were also exhibited.

Inauguration of Venture Centre

Dr Harsh Vardhan visited CSIR-NCL's technology business incubator Venture Center and inaugurated the new MedTech clean room facility and the loan license facility for its start-ups working on clinical trial samples.

This facility is 'first-of-its-kind in India' cleanroom facility designed for the manufacture of medical devices and diagnostics for testing and clinical study purposes. Dr Harsh Vardhan also inaugurated the new guest house building of CSIR-NCL covering a built-up area of 9,575 square feet which includes 17 rooms on two floors.

Published in:
Sakal Times

CSIR-NCL

10th September, 2019

City | PuneTimesMirror

Replica of W Ghats forest recreated in a city backyard

After research and collection trips, scientists of CSIR-NCL plant 60 native species in campus plot to better study a microcosm of semi-evergeen forest from bio-rich belt

MANOJ BIDKAR

The team later plans to expand the experiment to 110 native species and study how the ecosystem interacts, to ultimately delve into mitigating climate change

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At a time when the debilitating march of climate change is rapidly impacting the Western Ghats, a tiny microcosm of this vast, biodiversity-rich region has been recreated in a city backyard — in an effort to eventually take forward studies of this green belt in a positive direction.

Scientists at the city's Council of Scientific and Industrial Research – National Chemical Laboratory (CSIR-NCL) have created a replica of the semi-evergreen forest type found in the Western Ghats within a 7,100 square feet patch of land on campus, planting at least 60 native species on it. The institute plans to take this number to 110 native plant species, including 70 tree species.

"There is a myth that a forest cannot be created or recreated. We want to experiment it to check if it holds true," shared Amol Kasodekar, a researcher at CSIR-NCL, adding, "Forests in the Western Ghats of Maharashtra comprise dry deciduous, moist-mixed deciduous and semi-evergreen forest types. The plantation programme we have launched is an ecological experiment to recreate the semi-evergreen type. In stages, we will plant other species of climbers, shrubs, and smaller trees, once the desired growth of the existing plantation is achieved. We also want to see how the forest grows in terms of the rate and regrowth."

Kasodekar explained that for this project, seeds of several tree species were gathered during collection trips to the Western Ghats over the last three or four years. They were then sown and seedlings were raised at CSIR-NCL. A few trees were also procured from other private entities and NGOs.

> **"The plot will have different strata of trees, as found in a native forest. The small live model of the Western Ghats forest could also explain how its original ecosystem behaves**
>
> — Narendra Kadoo, senior scientist, CSIR-NCL

Explaining how varying tree species are distributed across different parts of the Western Ghats, Kasodekar shared, "The composition of trees in forests of the Western Ghats in Maharashtra is different from those in the southern parts of the Ghats."

Elaborating on this, Yogesh Mahajan, head of the horticulture section at the laboratory, said the reason behind the phenomenon is the rainfall gradient experienced in different parts of the Western Ghats, as well as the temperature extremes and soil composition. "The same holds true for forest types and species found from the west to east direction. Further, the species composition of the forest also changes from the edge to inner core areas," he said.

Narendra Kadoo, a senior scientist at CSIR-NCL, said the trees more tolerant to water-stress and temperature have been planted at the moment — more sensitive trees will be planted later. "The plot will have different strata of trees, as found in a native forest. The small live model of the Western Ghats forest could also explain how its original ecosystem behaves," he told *Mirror*, adding that a replica of the forest was designed very carefully, considering different native species of the northern Western Ghats, their interrelations, growth patterns and other natural aspects. "Our plot has the same spectrum of the plant species represented in the forest, and is hence named 'Replica of the native forest'," Kadoo said.

"Climate change is a global concern in the coming years, and the best possible way to mitigate it is to increase the tree cover of the planet. However, large scale plantation programmes often neglect the local biodiversity, and monoculture plantations have serious drawbacks. Hence, it was decided to create a representation of our own forest in Western Ghats of Maharashtra," he explained.

According to Kadoo, once established, this replica will be opened to researchers to study different species, their growth, interactions with other tree species, and various other aspects of the Western Ghats forest."

The replica was thrown open to the public on Monday, and the ribbon was cut at the hands of Union minister of science and technology and earth sciences, Harsh Vardhan.

SACHIN PHIL SUNDAR

Published in:
Pune Mirror

CSIR-NCL

10th September, 2019

न्यू इंडिया का निर्माण करने के लिए वैज्ञानिकों का योगदान महत्वपूर्ण : डॉ. हर्ष वर्धन

एनसीएल में आयोजित कार्यक्रम में केंद्रीय विज्ञान व तकनीकी मंत्री ने कहा : नये भारत के निर्माण हेतु साईंटिफिक सोशल मूवमेंट की जरूरत

- यह भी कहा– देश की अर्थव्यवस्था प्रगतिपथ पर
- देश की लैबोरेटरियों में होने वाली रिसर्च जनसाधारण तक पहुंचनी चाहिए : उसकी मदद से जनता की समस्याएं हल हों
- केंद्रीय मंत्री ने डीएमई पायलट प्लांट का उद्घाटन किया

पुणे, 9 सितंबर (आ.प्र.)

देश की अर्थव्यवस्था प्रगति पथ पर हैं. 2022 में देश की आजादी के 75 वर्ष पूरे होंगे. इसलिए पीएम नरेंद्र मोदी ने न्यू इंडिया का सपना देखा है. उसे साकार करना वैज्ञानिकों के हाथों में हैं. इसलिए नए इंडिया के निर्माण के लिए घरेलु तकनीकी विकसित करने की जिम्मेदारी भी वैज्ञानिकों की है. न्यू इंडिया को बनाने में वैज्ञानिकों का योगदान महत्वपूर्ण साबित होगा. यह राय केंद्रीय विज्ञान व तकनीकी मंत्री डॉ. हर्ष वर्धन ने व्यक्त की.

एनसीएल में आयोजित कार्यक्रम में बोलते हुए केंद्रीय विज्ञान और तकनीकी मंत्री डॉ. हर्ष वर्धन. इस अवसर पर उपस्थित (बाएं से) डॉ. एस.पी. चव्हाण, प्रा. अश्विनीकुमार नांगिया, डॉ. शेखर मांडे और डॉ. श्रीनिवासन.

पाषाण स्थित नेशनल केमिकल लैबोरेटरी (एनसीएल) में गत दिन आयोजित कार्यक्रम में वे बोल रहे थे. इस अवसर पर सीएसआईआर के डायरेक्टर जनरल डॉ. शेखर मांडे, एनसीएल के डायरेक्टर प्रा. अश्विनी कुमार नांगिया, डॉ. श्रीवासन, डॉ. एस.पी. चव्हाण आदि उपस्थित थे. शाश्वत विकास के तहत अमल में लाए जा रहे डीएमई (डाई मीथेन इथर) पायलट प्लांट का उद्घाटन डॉ. हर्ष वर्धन के हाथों संपन्न हुआ. इसके बाद उन्होंने एनसीएल में विभिन्न प्रयोगों संबंधी कार्यों का ब्यौरा लिया. केंद्रीय मंत्री के हाथों एनसीएल के कैंपस में वृक्षारोपण भी किया गया.

एनसीएल के कर्मचारी और वैज्ञानिकों से संवाद करते हुए डॉ. हर्ष वर्धन ने कहा, देश की लैबोरेटरियों में होने वाली रिसर्च जनसाधारण तक पहुंचनी चाहिए. उसकी मदद से जनता की समस्याएं हल होनी चाहिए. इसलिए ऐसे रिसर्च पर वैज्ञानिक अधिक ध्यान केंद्रित करे. नये भारत के निर्माण हेतु साईंटिफिक सोशल मूवमेंट अर्थात विज्ञान संबंधी सामाजिक आंदोलन जरूरी है. क्योंकि विज्ञान में ही देश के विकास के लिये अभूतपूर्व शक्ति है.

उन्होंने आगे कहा, देश में स्वच्छ भारत मिशन, जलशक्ति अभियान, कौशल विकास, आर्टीफिशयल इंटेलिजेंस, हेल्थ इज वेल्थ जैसे कई स्तरों पर कार्य जारी है. लोगों की सहभागिता से यह कार्य तेजी से आगे बढ़ेगा. इसका मुझे पूरा विश्वास है. देहरादून में प्लास्टिक के विघटन से डीजल बनाने के प्रोजेक्ट पर अमल किया जाएगा. पीएम मोदी के नेतृत्व में महिलाओं के लिए 10 करोड़ टायलेट बनवाए गए. डिजिटल इंडिया व स्किल डेवलेपमेंट में भी कार्यरत हो गया है. देश की अर्थव्यवस्था तेजी से प्रगति कर रहे है. यह विश्वास डॉ. हर्ष वर्धन ने किया.

प्रा. नांगिया ने कहा, इसरो के वैज्ञानिकों से देश में अन्य लैबोरेटरियों में वैज्ञानिकों को भी रिसर्च की प्रेरणा मिलती है. एनसीएल ने भी बायोडीजल, प्लास्टिक जैसे विभिन्न घटकों पर रिसर्च किया है. नीति आयोग ने कहा है कि, भविष्य में मिथेनॉल अर्थव्यवस्था के लिए बहुत उपयोगी होगा. इसलिए एनसीएल ने पूरी तरह भारतीय रिसर्च पर आधारित डीएमई प्रोजेक्ट पर काम करने का निर्णय लिया है.

आईएमडी दुनिया में चौथे नंबर की संस्था

डॉ. हर्ष वर्धन ने कहा, मौसम संबंधी इंडियन मेटियोरोलॉजिकल डिपार्टमेंट (आईएमडी) दुनिया में चौथे नंबर की संस्था है. इसका कार्य उत्कृष्ट है और इसके अनुमान सटीक साबित हुए है. फनी तुफान का चेतावनी 13 दिन पहले आईएमडी ने दी थी. यूनाइटेड नेशंस ने भी आईएमडी की सराहना की है.

Published in:
Aaj Ka Anand

CSIR-NML

10th September, 2019

पहल : एनएमएल ने 32 ग्रामीण युवाओं को दी मेटल आर्क वेल्डिंग और गैस कटिंग की ट्रेनिंग

खबर मन्त्र ब्यूरो

जमशेदपुर। सीएसआइआर एनएमएल, जमशेदपुर द्वारा आयोजित मैनुअल मेटल आर्क वेल्डिंग एंड गैस कटिंग, पर एक महीने के आधार वेल्डिंग प्रोग्राम का आयोजन किया गया था। यह प्रशिक्षण कार्यक्रम सीएसआईआर एकीत कौशल पहल कार्यक्रम के तहत आयोजित किया गया था, जो देश भर में स्थित व्यक्तिगत प्रयोगशालाओं की विशेषज्ञता और बुनियादी ढांचे का उपयोग करते हुए वैज्ञानिक और औद्योगिक अनुसंधान परिषद

(सीएसआईआर) द्वारा शुरू किए गए कौशल विकास पर एक राष्ट्रीय कार्यक्रम है। इच्छुक उम्मीदवारों और योग्य वेल्डर की औद्योगिक आवश्यकता के अनुसार अभ्यास करने वाले उम्मीदवारों के कौशल में सुधार। यह प्रशिक्षण कार्यक्रम संगठित फिटर और टर्नर के लिए भी था। प्रशिक्षण कार्यक्रम 10 वीं उत्तीर्ण उम्मीदवारों के साथ-साथ आईटीआई धारकों के लिए भी था।

सीएसआईआर-एनएमएल के मुख्य वैज्ञानिक श्री परवेश कुमार धवन ने प्रतिभागियों को संबोधित किया और प्रशिक्षण कार्यक्रम को सफलतापूर्वक पूरा करने के लिए प्रतिभागियों को बधाई दी। उन्होंने चांदपुर गांव, पोटका से 32 प्रतिभागियों को प्रशिक्षण प्रमाणपत्र वितरित किए। हालांकि, कुशल ट्रेडों में महिलाओं की भागीदारी अपेक्षात कम है, लेकिन यह धीरे-धीरे बढ़ रही है। सीएसआइआर एनएमएल ने इसे देखा है क्योंकि महिलाओं के सोपोडेरा, पारसुडीह ने भी इसमें भाग लिया था।

श्री धवन ने राणाश्रय राम को एक स्मृति चिह्न भी दिया जो कार्यक्रम को सफल बनाने में उनके प्रयास के लिए तकनीकी संसाधन नेतृत्व है। मुख्य वैज्ञानिक डा मीता तरफदार, वैज्ञानिक डॉ रजनीश कुमार, वाई उषा प्रचलित सत्र के दौरान उपस्थित थे। मुख्य वैज्ञानिक डॉ मीता तरफ्तार ने प्रशिक्षण पूरा करने के लिए प्रतिभागियों को बधाई दी। कहा जो भी ज्ञानियों ने यहां इकट्ठा किया है, उन्हें बेहतर जीवन जीने में मदद मिलेगी। उन्होंने वेल्डिंग प्रशिक्षण सहित विभिन्न प्रशिक्षण कार्यक्रमों में सीएसआईआर एकीत कौशल पहल और सीएसआईआर-एनएमएल की भागीदारी के बारे में भी बताया।

Published in:
Khabar Mantra

CSIR-IHBT

10th September, 2019

कार्यक्रम

सीएसआइआर-आइएचबीटी में हिमालय दिवस का आयोजन

हिमालयी जैव संपदा के संरक्षण पर जोर

संवाद सहयोगी, पालमपुर : सीएसआइआर-आइएचबीटी पालमपुर में सोमवार को हिमालय दिवस का आयोजन किया गया। इसमें कृषि विवि के पूर्व कुलपति डॉ. एसके शर्मा ने हिमालयी जैवसंपदा संरक्षण एवं प्रबंधन पर संबोधन किया। उन्होंने बताया कि हिमालय दिवस की पहल उत्तराखंड में पर्यावरणविदों के एक समूह ने वर्ष 2010 में की थी, ताकि हिमालय के सतत विकास को हिमालय के पारिस्थितिकीय तंत्र के अनुरूप सुनिश्चित किया जा सके। तभी से इस दिवस को हिमालय दिवस के रूप में मनाया जाता है।

उन्होंने हिमालयी क्षेत्र की जैवविधिता और उसकी संरक्षण पद्धति, संभावनाओं तथा देश में विद्यमान जैवसंपदा के संरक्षण एवं नियमों का उल्लेख भी किया। उन्होंने बताया कि विश्व के 17 प्रमुख जैव विविधता वाले क्षेत्रों में भारत भी एक है। हिमालय में सही एवं सतत उपयोग की आवश्यकता पर अपार संभावनाएं हैं। इनका संरक्षण उपयोग से ही संभव है। सभी प्रमुख मंत्रालयों, संस्थानों, विभागों, एजेंसियों को इसके लिए आगे आना होगा।

संस्थान के निदेशक डॉ. संजय कुमार ने स्वागत भाषण में उपस्थित लोगों को हिमालय दिवस की शुभकामनाएं देते हुए संस्थान की ओर से हिमालयी जैवसंपदा के संरक्षण में किए जा रहे कार्यों की जानकारी दी। उन्होंने बताया कि संस्थान हिमालयी जैवसंपदा के सतत उपयोग के माध्यम से जैवआर्थिकी के विकास के लिए प्रौद्योगिकियों को विकसित करने के लिए अग्रसर है। हमारे शोध की स्थानीय प्रासंगिकता तथा वैश्विक प्रभाव है। संस्थान ने हिमालय के विभिन्न जैव स्रोतों से जैवप्लास्टिक बनाने में सफलता पाई है। लुप्तप्रायः प्रजातियों के संरक्षण की दिशा में भी पहल की है।

कार्यक्रम के मुख्य अतिथि व संस्थान की अनुसंधान परिषद अध्यक्ष डॉ. अनिल कुश ने एक कविता के माध्यम से हिमालय की जैवविविधता के विभिन्न पहलुओं का गुणगान किया तथा हिमालय की तुलना स्वर्ग से की। उन्होंने जलवायु परिवर्तन पर विचार करने तथा इस दिशा में आगे कार्य करने का आह्वान किया।

पालमपुर में सीएसआइआर-आइएचबीटी में आयोजित हिमालय दिवस पर कार्यक्रम को संबोधित करते मुख्य अतिथि ● जागरण

संबोधन

- हिमालयी क्षेत्र में जैव संपदा के उपयोग की अपार संभावनाएं
- संस्थान के निदेशक ने लोगों को दी हिमालय दिवस की शुभकामनाएं

Published in:
Dainik Jagran

In a 1st, government OKs cannabis research in UP & Uttarakhand

CSIR-CIMAP

9th September, 2019

The narcotics department within the revenue wing of the Union finance ministry has sanctioned a research and development (R&D) project on cannabidiol (CBD) and tetrahydrocannabinol (THC) - two unique natural compounds found in cannabis. Now, cannabis, commonly known as ganja, will be grown at Central Institute of Medicinal and Aromatic Plants (CIMAP) in Lucknow (UP) and Pantnagar (Uttarakhand).

"CSIR-CIMAP wants to start R&D work on genetic improvement of identification and selection of THC, CBD and cannabinioderpene - a rich strain-level genotype of cannabis - at their office in Lucknow, UP, with its resource centre in Pantnagar, Uttarakhand. CSIR has, therefore, requested to allow them to collect cannabis germplasm and grow it in their fields," the Centre's note said. The note also said that India's NDPS policy emphasised development of drug varieties with low THC content, which could be exploited for industrial and horticulture purposes. "That is source of biomass and fibre, and for production of cannabis seed oil," it said.

In its note, which has been sent to all state governments, director (narcotics control) in the finance ministry has cited a WHO expert committee report on drug dependence. WHO has taken cognisance of medicinal use of low THC cannabis and has proposed change in scope of control of cannabis-related substances in the international conventions. CBD is extracted from cannabis hemp and it's used in gels, oils and food supplements. It also has medicinal use. THC, on the other hand, is a psychoactive compound present in cannabis, responsible for giving the high sensation.

Published in:

The Times of India

Language barrier impedes infra projects, push for Hindi, suggests central road body

CSIR-CRRI

9th September, 2019

Uttar Pradesh has been working at the construction of Barapullah phase-3 construction site for nearly eight months. When she first began work here she did not understand a single word of English. "I am illiterate. I could not understand what the supervisor meant when he told us to 'mix cement', 'inches' and 'turn'. Gradually, my fellow workers helped me and I started understanding what the supervisor needed me to do," said Kumari. Mukesh Kumar Meena, a contractor with government agencies in Delhi and the neighbouring satellite towns, said that for many projects that he has undertaken the project supervisors and officer in-charges belong to states where Hindi is not the first language.

"In one of the flyover projects in Delhi, the project in-charge is a south Indian. He speaks fluent English but sometimes we cannot understand him. How will we pass on instructions, if we cannot understand these ourselves? There are these minor hiccups, but we find solutions and complete work within the deadlines," Meena said. According to the Central Road Research Institute (CRRI), the language barrier is one of the reasons why many large-scale infrastructure projects suffer delays and drop in quality. Its solution: make Hindi a common language in the construction filed. This means all documents, and on-field communication be made in Hindi. This was recommended after a brainstorming session between transport and infrastructure experts on Friday. Ravindra Kumar, principal scientist, transportation planning division CSIR-CRRI said that the country is sprinting towards developing road and smart city infrastructure but communication barriers during construction is still one of the

primary reasons for these projects to miss deadlines. “There are a number of times when there is a communication gap due to their language barrier, which affects the quality as well as cost and time overruns of the project. To understand implementation at grass-root level, it is desired that instruction or communications are given in the language, which the workforce understands,” he said. He explained that in many projects the language used in documents, guidelines and exchange is often English because of the medium of their education is English. The projects, however, are implemented on-ground by labourers, contractual skilled and semi-skilled workforce and they mainly understand and speak Hindi or the vernacular. The number of this workforce is quite large as compared to their managers or the engineers.

Even though engineers understand and communicate in Hindi on-site, the language is mostly urbanised with excessive use of English words, experts said. “It is recommended that Hindi should be essential language in the field of science and technology. There is a need to develop the design guideline, operational and training manuals in the Hindi language, as it is understood by the large workforce. This is only possible if Hindi is used frequently in scientific and technical field,” the panel said.

A senior PWD official, who is associated with phase-3 of the Barapullah elevated corridor, said that there were many occasions when the senior engineers from the other part of the country had a tough time in explaining the mode of the work to the grass-root workforce. Similarly, semi-skilled and unskilled workers had to often toil hard to understand a work manual to execute a particular task. “To address these language barriers we take help of other colleagues, who know Hindi, and play the role of an interpreter. Sometimes training sessions are organized for the engineers and the workers,” he said.

Published in:
Hindustan Times

Pune: Union minister Harsh Vardhan to inaugurate facilities at NCL on Monday

CSIR-NCL 8th September, 2019

Union minister of science and technology and earth sciences Harsh Vardhan will inaugurate various facilities at the CSIR-National Chemical Laboratory (CSIR-NCL) in Pune on September 9.

During the visit, the minister will address the NCL staff and scientists. He will visit the crucial facilities in pilot plant III and IV. “The minister will inaugurate the Dimethyl Ether (DME) pilot plant under mission project “catalysis for sustainable development,” an NCL release stated.

The minister will also visit the recently-developed pilot facility for process intensification, process scale-up studies and demonstrations for various internal and industrial projects.

Published in:
The Times of India

CLRI's biocatalyst cuts effluent discharge during leather processing

CSIR-CLRI

8th September, 2019

There is threefold reduction in water usage and less chromium discharge into the environment

A novel amylase-based biocatalyst developed by researchers at the Central Leather Research Institute (CSIR-CLRI), Chennai, helps in processing leather in an environment-friendly way and also drastically cutting the time taken to process the skin at the pre-tanning stage. Pre-tanning process generates 60-70% of total pollution during processing.

Reduced effluents

The quantum of effluent discharge is considerably cut as there is threefold reduction in water usage when the biocatalyst is used. In particular, the amount of chromium that gets absorbed is more leading to less chromium discharge into the environment. Chromium is used for increasing the stability of the collagen through cross-linking. Since no chemicals are used, the chemical oxygen demand drops by about 35% while the total solid effluent load reduces by over 50%. The reason why less chromium and water are required at the pre-tanning stage when the biocatalyst is used is primarily because of the 120-fold higher binding of the biocatalyst to the glycan sugar (glycosaminoglycan) present predominantly in the skin. Once the catalysts binds to the sugar, it selectively breaks down (hydrolysis) the sugar thus opening up the skin fibre. The results were published in the journal *Green Chemistry*.

Quick hydrolysis

"The binding and hydrolysis happens rapidly. It takes just 10 minutes to open the fibres when the biocatalyst that we engineered is used. Traditionally, enzymes take

three-to-four hours to open the fibres. If lime and sulphate are used it takes 12 hours to complete the process," says Niraikulam Ayyadurai from the Department of Biochemistry and Biotechnology at CLRI and corresponding author of the paper. Not only is the process of opening the fibres quicker, the biocatalyst also penetrates deep into the skin unlike the traditionally used enzymes. Deep penetration of the biocatalyst has two advantages — it is sufficient to use less amount of chromium to increase the stability of the collagen and the quality of the finished leather also becomes superior. About 21% of the chromium used gets absorbed by the skin, which is far more than when other enzymes or chemical-based methods are used, leading to reduced chromium in the effluent discharge. The biocatalyst is stable even at a high temperature of 90 degree C and pH 10 and so up to 95% of the enzyme can be recovered after a single process and reused.

Genetic engineering

The normal amylase enzyme has limited efficiency to bind to the substrate leading to reduced ability to open the skin fibre. So the team led by Dr. Ayyadurai resorted to genetic code. "The genetic code engineering allows us to introduce new chemistry in the amylase enzyme thus improving the enzymatic properties," he says. "The tyrosine amino acid was computationally modified with extra groups such as amino, hydroxyl, fluorine and chlorine. We found the extra hydroxyl group provided more activity towards the skin glycan," says Suryalakshmi Pandurangan from CLRI and the first author of the paper. "By modifying the tyrosine amino acid we changed the property of amylase enzyme."

The amylase gene was isolated from *Bacillus licheniformis* and made to express in *E. coli*. Large-scale production and even manipulation of the enzyme is possible when the enzyme is expressed by *E. coli*. It also becomes cheaper to produce the enzyme through the fermentation route.

Published in:
The Hindu

Farming in South Asia was native development, not adopted from West: Study

CSIR-CCMB

7th September, 2019

The first ever genome sequenced from a woman in Rakhigarhi - a town part of the Indus Valley Civilisation - has increased the possibility that people in the ancient civilisation had no ancestry from European herders, or Iranian farmers, according to a study.An international team of geneticists, archaeologists, and anthropologists, including Kumarasamy Thangaraj from the CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB) in Hyderabad analysed the genomes of 524 ancient individuals. The DNA samples included those from the eastern Iran, Turan (Uzbekistan, Turkmenistan, and Tajikistan), Bronze Age Kazakhstan, and South Asia, making this the largest ever study of ancient human DNA.

The results of their studies published in two journals, Science and Cell, shed light on long-standing questions about the origins of farming, the source of Indo-European languages in South and Central Asia, and the ancestry of the people in the Indus Valley Civilisation. The studies revealed that a complex set of genetic sources ultimately combined to form the ancestry of South Asians today, and suggest that farming in South Asia was a native development, and not introduced from the West.

"We compared these ancient genomes to one another, and to previously sequenced genomes, and put the information into context alongside archaeological, linguistic and historical records. This has helped us fill in many of the key details about people who lived in various parts of this vast region from the Mesolithic Era (about 12,000 years ago) to the Iron Age (until around 2,000 years ago)," said Thangaraj, one of the senior authors of both studies. "We could study how these ancient humans (whose skeletons were found) relate to the people who live there today," he added.

One of the DNA samples belonged to the Rakhigarhi woman, buried four to five thousand years ago, in what is now part of Haryana. Her genes point towards an ancestry of ancient Iranians and Southeast Asian hunter-gatherers, and definitely not from pastoralists who lived in the grasslands of Asia and Europe, according to the researchers. The authors, however, cautioned that this does not mean her ancestors lived in Iran or Southeast Asia but in fact that they almost certainly lived in South Asia for thousands of years before her.
"After screening more than 60 skeletal samples from the largest known town of the Indus Valley Civilisation called Rakhigarhi, we have shown that the Iranian-related ancestry in South Asians comes from a lineage that separated from Iranian farmers and hunter-gatherers before they split from each other," said Thangaraj.

He added that this was consistent with the observation that Iranian-related ancestry is extremely common even in the tribal groups in southern India practising hunting and gathering, not farming. This, he said, indicated that farming in South Asia was not due to the movement of people from the earlier cultures of the west, but instead a development adopted by local foragers.

The researchers cautioned that since only one sample was part of the study from the Indus Valley Civilisation, it limits the conclusions that can be drawn about the entire population of the ancient town. VIS AMS AMS

Published in:
Outlook

Curtains come down on Behind The Teacher's Desk seminar

CSIR-NML 7th September, 2019

The valedictory function of the 9th edition of "Behind The Teacher's Desk" (BTTD-2019) – two-day Students' seminar on metallurgical engineering, organised jointly by The Indian Institute of Metals (IIM), Tata Steel and CSIR-National Metallurgical Laboratory (NML) concluded at CSIR-NML Auditorium.

This students' seminar is being held at the CSIR-NML for the past eight years and has been a great success. Like previous years, this year also more than 150 students from various engineering colleges/institutes from different parts of the country were participated. Around 45 technical papers and 18 e-posters were presented in three parallel sessions in the area of metallurgy and materials sciences. Industrial tours were organised to Tata Steel, Tinplate and Usha Martin Ltd. to facilitate the students a firsthand exposure. A cultural programme was organised where BTTD delegates actively participated last night.

An interactive session was held on "Industrial Problem Statement" that included two rounds, one comprising of Technical Group Discussion moderated by two R&D and industrial experts, second comprising of Stage round which was judged by a 7 members panel. This programme was conducted by Mr. Snehashish Tripathy, Scientist, CSIR-NML, Jamshedpur. The prime objective of the 'Industrial problem-solving contest' in BTTD-2019 is to inculcate exposure as well as the multitasking ability such that the young engineers would meet the present industrial demand.

Chief Guest, Dr. A. Mitra, chief scientist, CSIR-NML focused on the importance of such programme like – BTTD in the educational and industrial exposure to engineering students. Dr. K.L. Sahoo, Co-Chairman, BTTD-2019 thanked all the participants and the organizers for putting up a successful event.

Minal Shah, co-convener of the organizing committee proposed the vote of thanks and expressed her sincere gratitude to all the students for showing tremendous enthusiasm and participation in the seminar.

She thanked Dr. Mita Tarafder, chairperson of IIM Jamshedpur Chapter and BTTD organising committee for her untiring effort in making the seminar a success. She also expressed her sincere thanks to Dr. I. Chattoraj, Director, CSIR-NML, and each and every members of advisory committee and organizing committee for their continuous support in the making the event a grand success.

Published in:
Avenue Mail

Potholes to burn Rs 90crore hole in motorists' purse during Onam

CSIR-CRRI 7th September, 2019

Potholes in Kochi city will cost vehicle owners a whopping Rs 90 crore in fuel cost and lost man hours during 45 days of festive period, shows an analysis of the traffic pattern of the city. According to Kochi-based Centre for Public Policy Research (CPPR), when traffic slows to a crawl on potholedroads it will lead to a daily loss of Rs 2 crore on account of fuel cost and lost man hours.

"Additional fuel cost due to traffic congestion accounts for Rs 1.45 crore and the loss in man hours accounts for Rs 61lakh. It is assumed that 1.5 lakh vehicles enter Kochi city daily and due to the potholes, the average speed within the city comes down to 6km per hour from 18km per hour in normal times. The city has 75km road within its limits," said D Dhanuraj, chairman, CPPR. "Urban Mass Transit Company Ltd (UMTC) had conducted a mobility plan (CMP) and parking master plan for Kochi in 2015 and according to the study, Kochi has an inflow of 1.59 lakh vehicles," said BV Antony, former deputy transport commissioner.

He said the flyover constructions are to be blamed for the traffic congestion within the city. "We had seen bigger work which was carried out by the Metro, but the congestion was relatively lighter because of efficient planning. They had diverted traffic in a planned manner to avoid big congestions," he said. When a road gets congested, vehicles consume more fuel compared to those in clear roads, according to a study by the Central Road Research Institute (CSIR-CRRI), New Delhi.

It leads to increase in travel time and fuel consumption and thereby adding to total road user cost, said the study. "Roughly 75% of the total operating cost of a vehicle is its fuel

cost and hence, it has a high monetary impact," said Dr S Velmurugan, principal scientist and former head of traffic engineering and safety division, CSIR-CRRI. "In metropolitan cities like Kochi, you can expect a maximum average speed of 10-15km per hour, because bottlenecks are going to bring down the speed considerably," he said. "A bad road is a safety issue and results in wastage of fuel," he said. So what is the bigger picture? Let us look at the freight transport vehicles segment alone. According to a study conducted in 2015 by the Transport Corporation of India and the Indian Institute of Management-Calcutta, India has been losing nearly Rs 97,000 crore in additional fuel costs due to delays annually.

Published in:
The Times of India

At workshop on role of technology, Hindi language highlighted

CSIR-CRRI 7th September, 2019

The Central Road Research Institute (CRRI) in association with the Ministry of Earth Sciences has organised a National Level workshop on the role of the Science and Technology in Development of basic infrastructure Development and challenges of 21st century Friday. The professors, engineers and architectures has also stressed upon the usage of Hindi language.

The workshop which saw a number of students, architecture and engineers who presented their research papers on various topics and infrastructure challenges in the National Capital also spoke on the importance of Hindi language.

"It has been observed that the engineers and senior level official and scientist are generally studied in English and well versed in the language but it has been observed that there are labors in the construction sites that are also in large numbers do not understand and speak English. The languages barriers most of the time affects the quality as well as cost and at time overrun the projects.

Thus, it is important to promote and implement the language for better understanding between the boss and the employee," said Ravinder Kumar, Prinicapl Scientist and Head of the Department of Transportation Planning and Environment Division Traffic Building, CRRI.

Published in:
The Pioneer

CSIR-CSMCRI

7th September, 2019

નાનામાં નાના પદાર્થોનું વિશ્લેષણ કરવા આધુનિક માઈક્રોસ્કોપનો ઉપયોગ

માઈક્રોસ્કોપની મદદથી ૧૦થી ૧૫ લાખ ગણુ મોટું કરી કણની સંરચના જાણી શકાય

ભાવનગરના સેન્ટ્રલ સોલ્ટ ઈન્સ્ટીટ્યૂટમાં 'જિજ્ઞાશા'માં છાત્રોને અપાતી સમજણ

| ભાવનગર |

આજે વિશ્વમાં સૂક્ષ્મ વિજ્ઞાનની અંદર ખુબજ કાર્ય થઈ રહ્યું છે, જેમાં નાનામા નાના પદાર્થોનુ વિશ્લેષણ કરવા માટે નવા નવા અને આધુનિક માઈક્રોસ્કોપ નો ઉપયોગ થાય છે, જેમાં માઈક્રો સાઈઝ કે નેનો સાઈઝ ના અતિ સૂક્ષ્મ પદાર્થનું વિશ્લેષણ કરવામાટે ઈલેકટ્રોન માઈક્રોસ્કોપનો ખુબજ મોટો ફાળો હોય છે. તે વિશેની વિશદ્ સમજણ ભાવનગરના સેન્ટ્રલ સોલ્ટ એન્ડ મરીન કેમિકલ્સ રીસર્ચ ઈન્સ્ટીટ્યૂટ (સી. એસ.એમ.સી.આર.આઈ.)માં ચાલતા જિજ્ઞાશા કાર્યક્રમ અંતર્ગત સંસ્થાની મુલાકાત લેતા છાત્રોને સમજાવાયું હતું.

CSIR-CSMCRI દ્વારા જિજ્ઞાસા પ્રોગ્રામનું આયોજન કરવામાં આવ્યું છે. જેમાં ગુજરાતમાં આવેલી તમામ કેન્દ્રીય વિદ્યાલયના વિદ્યાર્થીઓ અને શિક્ષકો ભાગ લઈ રહ્યા છે. આ પ્રોગ્રામ હેઠળ, વિદ્યાર્થીઓને સંશોધન કાર્ય કેવી રીતે થાય છે, નવી ટેકનોલોજી સંશોધન કાર્યમાં કેવી રીતે મદદરૂપ થાય છે તે વિષય પર ચર્ચા કરવામાં આવે છે. સાથે સાથે સંશોધન કાર્યમાં મદદ રૂપ થતા વૈજ્ઞાનિક ઉપકરણો વિષેની માહિતી આપવામાં આવી રહી છે. આમાં ખાસ કરીને માઈક્રોસ્કોપનો ઉપયોગ દર્શવવામાં આવે છે. માઈક્રોસ્કોપથી પદાર્થનું વિશ્લેષણ કેવી રીતે થાય છે અને તેનાથી કઈ માહિતી પ્રાપ્ત થાય છે તે દર્શાવામાં આવે છે. નરી આંખે ન જોઈ શકાતી માહિતી જેમ કે, અણુ, પરમાણું, બેક્ટેરિયા, સેલ વગેરે જેવા પદાર્થોનો આકાર કેવો છે, તેની સપાટી કેવી છે, નાના

કણોનું એકબીજા સાથેનું જોડાણ, માઈક્રોસ્કોપ દ્વારા સરળતાથી જોઈ શકાય છે અને વિદ્યાર્થીઓને તે પ્રયોગિક રીતે સમજાવવામાં આવે છે.

ઈલેક્ટ્રોન માઈક્રોસ્કોપ ઈલેક્ટ્રોમેગ્નેટિક લેન્સીસ મારફતે પ્રકાશ સૂક્ષ્મદર્શક યંત્રના સિદ્ધાંતની જેમ, ઈલેક્ટ્રોનના બીમ પસાર કરીને તેની છબી ઉત્પન્ન કરે છે. જો કે, ઈલેક્ટ્રોન બીમની તરંગલંબાઈ ખૂબ ટૂંકી હોય છે. ટૂંકી તરંગ લંબાઈ એટલે ઉચ્ચ રીઝોલ્યુશન.

ઈલેક્ટ્રોન માઈક્રોસ્કોપ સામાન્ય શ્રેણી છે. જેમાં અલગ અલગ ઈલેક્ટ્રોન માઈક્રોસ્કોપના પ્રકાર હોય છે. આમાં ટ્રાન્સમિશન ઈલેક્ટ્રોન માઈક્રોસ્કોપ અને સ્કેનિંગ ઈલેક્ટ્રોન માઈક્રોસ્કોપ બે સૌથી સામાન્ય છે. બંને ખૂબ જ નાના કણને જોવા માટે ઈલેક્ટ્રોન એક બીમનો ઉપયોગ કરે છે, સ્કેનિંગ ઈલેક્ટ્રોન માઈક્રોસ્કોપ ની અંદર પદાર્થની નાના મા નાની માહિતીને ૧૦,૦૦,૦૦૦ ગણું મોટું કરી ને જોઈ શકાય છે. ટ્રાન્સમિશન ઈલેક્ટ્રોન માઈક્રોસ્કોપમા પદાર્થની નાનામા નાનીમાહિતીને ૧૫, ૦૦,૦૦૦ ગણું મોટું કરી ને જોઈ શકાય છે. ટ્રાન્સમિશન ઈલેક્ટ્રોન માઈક્રોસ્કોપ દ્વારા નાના કણની અંદરની સંરચના વિષયની માહિતી મેળવી શકાય છે. નાના બાળકો થી લઈને મોટા લોકો પણ સરળતાથી સમજી અને જોઈ શકે છે.

સી. એસ. એમ. સી. આર. આઈ.ની સંસ્થાનમા ઈલેક્ટ્રોન માઈક્રોસ્કોપનો ઉપયોગ વિવિધ ક્ષેત્રમા કરવામાં આવે છે. જેમ કે અકાર્બનિક નમૂનાઓ (ઝિંક ઓક્સાઈડ, કોપર ઓક્સાઈડ વગેરે), કાર્બનિક નમૂનાઓ (પોલીમર કાર્બનિક પોલીમર ગ્રેફિન ઓક્સાઈડ), જૈવિક નમૂનાઓ (બેક્ટેરિયા, સમુદ્રી સેવાલ), છોડના નમૂનાઓ (છોડના પાન , મૂળ) વગેરેનું વિશ્લેષણ કરવામાં આવે છે.

ઈલેક્ટ્રોન માઈક્રોસ્કોપથી ઘણી માહિતીઓ મેળવી શકાય છે. તે જાણી વિદ્યાર્થીઓ ઈલેક્ટ્રોન માઈક્રોસ્કોપથી ઘણા પ્રભાવિત થયા હતા. વિશ્લેષણાત્મક, પર્યાવરણીય વિજ્ઞાન વિભાગ અને કેન્દ્રિય ઉપકરણ સુવિધા વિભાગના વડા ડૉ. બી. ગાંગુલીના માર્ગદર્શન હેઠળ ડૉ.નિસાર એહમદ, જયેશ સી. ચૌધરી અને ડો. ગોપાલા રામ ભાદુ દ્વારા વિદ્યાર્થીઓને માઈક્રોસ્કોપ વિષેની ઊંડાણપૂર્વક માહિતી અને સમજણ આપવામાં આવી હતી.

Published in:
Sandesh

IICT's Mol Bank to spread drug discovery culture

CSIR-IICT

6th September, 2019

Institute ready to out-licence three molecules to the industry

When CSIR-Indian Institute of Chemical Technology (IICT) here signed a pact with Sun Pharma to 'out-license' a patent for a new chemical entity with a potential for developing life saving drugs for multiple elements last month, it set off a buzz in the industry and research bodies about its 'National Mol Bank (NMB)'. The compound handed over to the pharma company was sourced from this famed bank housing about 60,000 diverse molecules — either synthesised in the lab or isolated from natural resources. It had helped IICT net an unprecedented ₹240 crore as first instalment of royalty!

Inside IICT campus, the facility has a fully sterile atmosphere with consistently maintained temperature and round-the-clock power back-up for molecules stored in vials or tubes in solid or liquid forms. These are thrice bar-coded and labelled for advanced safety in tall shelves. Each compound is in its purest form and has been tested in some experiment or other so the basic reactions data is maintained. "When a firm approaches us seeking a certain molecule to deal with certain ailment or a target, we suggest compounds based on how much its enzyme responds in suppressing the bacteria. It is like searching for a needle in a haystack. These are tested in cells and later in rodents and are fully safe before human trials begin," explains IICT Director S. Chandrasekhar. What is unique about NMB is that it was set up with help of an MNC. Glaxo SmithKline helped IICT develop the framework as pharma MNCs have huge Mol banks. Institute scientists were allowed to visit one such unit to plan for NMB here and the Department of Science & Technology

provided funding of ₹15 crore. “This is the biggest facility in public sector and we have sought sourcing of pure chemical compounds/molecules from various research institutes, universities and other from across the country. We are adding upto 8,000 every year,” says Prathama S. Mainkar, senior principal scientist and NMB in-charge.

NMB can store upto 1.6 million molecules in solid and liquid forms with storage and retrieval automated. “We consider this facility our diamond mine. Sample purity too is checked once a year and we have 8,000 isolated from natural resources,” adds Dr. Mainkar. Dr. Chandrasekhar says the institute is ready to out-licence three molecules immediately to the industry for product development, manufacture and regulatory filing for development of affordable life saving drugs. “Just like generics drugs, we can facilitate the country to become an active player in drug discovery,” he insists.

Published in:
The Hindu

2-day seminar 'Behind the Teacher's Desk' kicks off

CSIR-NML 6th September, 2019

The two-day students' seminar on metallurgical engineering ' Behind The Teacher's Desk' (BTTD-2019), organised by Indian Institute of Metals (IIM) Jamshedpur Chapter in association with CSIR-National Metallurgical Laboratory (NML), and Tata Steel kicked-off on Thursday at CSIR-NML. The seminar was formally inaugurated with the release of seminar souvenir by the Tridibesh Mukherjee, chairman, TechnoPlus Consultants Pvt. Ltd., Jamshedpur.

The aim of the seminar is to provide a common platform for promising and aspiring metallurgists to interact with the pool of experts from industries, R&D centers and academia. The student participants of this event will get an opportunity to update their current knowledge base, and share their academic achievements, innovative thoughts and new ideas in the field of metallurgy and materials technology. Since its inception in the year 2012, the seminar "Behind the Teacher's Desk (BTTD)" has blossomed into one of the most sought after event among the student fraternity of India. Like previous years, this year also more than 150 students from 50 engineering colleges/institutes from different parts of the country are participating, and around 55 technical papers and 20 e-posters are to be presented in two parallel sessions. Dr. Indranil Chattoraj, Director of CSIR-NML, Jamshedpur welcomed the Chief Guest and the student delegates.

He motivated the metallurgy graduates to work and contribute in core profession and to come up with noble and newer ideas for the advancement of the metallurgy and materials engineering. Dr. Tridibesh Mukherjee, Chairman, TechnoPlus Consultants Pvt. Ltd., Jamshedpur, and the Chief Guest of the inaugural function addressed the student participants.

He appreciated the involvement of huge number of student participants from metallurgical fraternity in this historical event and welcomed them participants to the steel city of Jamshedpur.Dr. Mukherjee highlighted the need of more dedicated work in the area of metallurgical process development and at the same time reiterated the importance of Industry-Academia collaboration for mutual growth.

He advised the students to apply the first principle theory to solve any problem. Dr. Mita Tarafder, Secretary IIM Jamshedpur Chapter and the organising committee, briefed about the Indian Institute of Metals and on the students' seminar BTTD-2019. She mentioned that the Indian Institute of Metals (IIM) makes utmost effort in creating a relationship among industry, R&D organizations and academia.

The persistent effort of the IIM, Jamshedpur Chapter has always strengthened the bond among various organisations by providing a befitting platform for interaction and sharing ideas and knowledge through the creation of opportunities and events.

Published in:
The Pioneer

CSIR-NML

6th September, 2019

एनएमएल में दो दिवसीय कार्यशाला का आयोजन

विद्यार्थियों को इनोवेशन से जुड़ना होगा, तभी होगा देश का विकास

लाइफ रिपोर्टर @ जमशेदपुर

एनएमएल सीएसआइआर की ओर से गुरुवार को ऑडिटोरियम में मेटलर्जिकल इंजीनियरिंग के विद्यार्थियों व शिक्षक-शिक्षिकाओं के लिए दो दिवसीय कार्यशाला का आयोजन किया गया. बिहाइंड द टीचर डेस्क नामक आयोजित इस कार्यक्रम में मुख्य अतिथि टेक्नो प्लस कंसल्टेंट्स प्राइवेट लिमिटेड के चेयरमैन डॉ टी मुखर्जी उपस्थित थे. उन्होंने एनएमएल के डायरेक्टर डॉ इंद्रनील चट्टोराज के साथ संयुक्त रूप से दीप प्रज्वलित कर कार्यक्रम की शुरुआत की. इसके बाद उन्होंने मेटलर्जिकल के क्षेत्र में होने वाले नये बदलावों की जानकारी दी. कहा कि जिस प्रकार तेजी से बदलाव हो रहे हैं, उसके लिए यह जरूरी है कि नयी पीढ़ी को ज्यादा से ज्यादा नयी चीजों की जानकारी रहे. इनोवेशन से जुड़ें. साथ ही देश व दुनिया में होने वाले आविष्कार से खुद को अपडेट रखे. इन सबके लिए इस प्रकार के कार्यक्रम के आयोजन के महत्वों की भी उन्होंने सराहना की. कार्यक्रम में तकनीकी सत्र का आयोजन किया गया जिसमें 55 पेपर व 20 इ पोस्टर प्रेजेंट किये गये. इसमें 50 इंजीनियरिंग कॉलेजों के कुल 150 विद्यार्थियों के साथ ही काफी संख्या में शिक्षक-शिक्षिकाओं के साथ ही एनएमएल के वैज्ञानिकों ने हिस्सा लिया.

Published in:
Prabhat Khabar

Study highlights need to avoid landscape changes near forest areas

CSIR-CCMB 6th September, 2019

A new study by CSIR's Hyderabad-based Centre for Cellular and Molecular Biology (CCMB) has emphasised the need to avoid changes in land use patterns near forest areas to prevent transmission of parasites and infections between human settlements and wildlife.

Manmade landscape changes such as land use change and fragmentation of habitat are known to alter the diversity of wildlife. These changes are also likely to change the diversity of parasites in the wildlife with implication for their health, since host and parasite diversity are strongly connected. However, research on the subject is limited. The effects of land use change and habitat fragmentation often co-occur but may affect the parasite diversity substantially differently.

In the new study, the researchers assessed how land use changes such as plantation, livestock foraging and human settlement and habitat fragmentation could impact the diversity of gastro-intestinal parasites in wild mammalian host species in Annamalai Hills in the Western Ghats.

The researchers extracted and analysed parasite eggs from about 4,000 faecal specimens of 23 wildlife species in 19 forest fragments of the Western Ghats over two years. It was found that the presence of plantations and potentially livestock significantly increased parasite diversity in the wildlife. However, the effect of habitat fragmentation was not significant.

"We found many parasites of cattle and human origin. The presence of plantations and potentially livestock significantly increased the parasite diversity due to possible spillover. We found more parasite species in wildlife nearer human settlement. Disturbed forest had more parasites than the non-disturbed ones," explained Dr. Govindhaswamy Umapathy,

who led the study, while speaking to India Science Wire. The study, he said, shows that cattle and domestic animals should be periodically de-wormed and completely restricted from roaming and interacting in wildlife habitat. The research team also included Debapriya Chakraborty, Mahendra Reddy and Sunil Tiwari. The results have been published in journal Scientific Reports.

Published in:
Business Line

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