

CSIR in Media



75 Years of

CSIR Touching Lives

News Bulletin

1st to 20th August 2018



Social factors too define skin colour of Indians

CSIR-CCMB

18th August, 2018



Interaction between genetic, environmental and social forces results in the patterns of skin colour

Skin colour variation in Indians is determined not just by the environment and genetics but by sexual selection, too. A complex interaction between physical and social forces is responsible for patterns of skin colour seen in males and females in India, says a study by CCMB researchers who collaborated with an international team. The researchers looked at how skin colour varies between 10 different socio-cultural populations varied within and between the populations in Andhra Pradesh, Tamil Nadu, Uttar Pradesh and

Bihar. They also looked at variation in skin colour between males and females within and between populations. Then they studied the influence of ultraviolet radiation on skin colour and finally looked at the variations with respect to genetic data. “Our study showed that social factors along with genetics played a strong role in shaping skin colour diversity across India,” says Dr. Kumarasamy Thangaraj from the Centre for Cellular and Molecular Biology (CSIR-CCMB), Hyderabad and a coauthor of a paper published recently in the *American Journal of Human Biology*. Greater pigmentation and hence darker skin helps protect the skin from harmful UV rays near the equator while less pigmentation leading to lighter skin colour promotes season UV ray-induced vitamin D production in people living in higher latitudes. Women generally tend to have lighter skin than men highlighting the importance of cutaneous vitamin D production for enhanced vitamin D absorption during pregnancy and breast.

feeding. For the study, the researchers compared the skin colour data of people living in Hyderabad and belonging to five different castes, three castes in Tamil Nadu, and from Brahmins living in Uttar Pradesh and scheduled caste living in Bihar.

Melanin index

The melanin index of people samples in Andhra Pradesh showed wide variation — 33.4 to 53. Three agricultural castes (Kapu, Naidu and Reddy) in the State had similar skin colour while Brahmins had far lighter colour and merchant caste (Vysya) had darker skin. In Tamil Nadu, Brahmins and Saurashtrians had lighter skin colour than pastoralist Yadava caste. Brahmins in Uttar Pradesh had fairer skin than scheduled caste in Bihar, and their melanin index range was nearly similar to their counterparts living in Andhra Pradesh. The melanin index range of scheduled caste in Bihar varied widely — about 46 to 79. “Clear differences in skin colour in men and women were seen,” says Dr. Thangaraj. Males belonging to the three agricultural castes in Andhra Pradesh showed darker skin than women. Even among Brahmins in the State, women had a lighter colour than men and there is greater difference in skin colour between the sexes. Though the merchant caste (Vysya) had darker skin than the other four, they showed the least difference in skin colour between women and men. The same differences and similarities were seen in the case of Brahmins in Uttar Pradesh and scheduled caste in Bihar. “We need to undertake a more detailed study by increasing the sample size, analysing few more genetic loci and including specific micro epidemiological factors that might be influencing skin colour for better understanding,” says Dr. Anushuman Mishra on less skin colour difference between women and men among Vysya population. Dr. Mishra is from CCMB and coauthor of the paper. The environment apparently plays a smaller role (16%) in determining skin colour in Indians, while social factors could explain 42% variation in skin colour. “This result is consistent with the observation that in India skin colour varies markedly even among populations living in the same geographic location,” they write. And the difference in skin colour in two north Indian populations that live close to each other and share important genetic history suggests that population-level variation have a role in skin colour.

Role of gene variant

In Europeans, the SLC24A5 gene variant rs1426654-A is usually associated with lighter skin colour. But in the case of the scheduled caste population in Bihar the gene variant was found in “unusually high frequency” despite the population having dark skin. Similarly, in the case of UP Brahmins, despite the frequency of this gene variant being high, it did not have a significant effect on melanin index variation within the population. “Our study suggests that there could be other genetic variant(s) in scheduled caste population in Bihar that have the ability to override the skin lightening effect of the gene variant rs1426654-A,” says Dr. Thangaraj. “When we look at melanin index and the genetic variant together we find in addition to genetics, the social and environment factors also play a major role in determining the skin colour of a population.” “In our earlier study in middle Gangetic Plain of India, we have demonstrated that genetic factor decides 6.4%, while social category has 32% influence on skin colour variation. In the later study too we found 42% skin colour variation is due to social factors, although other factors also play a role,” Dr. Mishra says. The authors conclude that numerous migrations into India and admixture of populations might have provided sufficient room for novel genetic variants that determine skin colour to emerge and spread among people in India, thus overriding natural selection.

And the population-dependent sexual selection for lighter skin and endogamy practised in India has ensured that skin colour variation has been maintained between different populations

Published in:
[The Hindu](#)

Hyderabad based IICT to soon become hub for new-age pesticides

CSIR-IICT



IICT will play the role of nodal lab for this project and work along with seven other CSIR laboratories in the country to achieve this target. After becoming a hub for generic medicines providing effective yet cheaper alternatives to life-saving costly medicines, Hyderabad is all set to become yet another hub for cheaper indigenously formulated pesticides which play an essential role in agriculture but are presently being sold at high prices, as they are patented and imported. The city-based Indian Institute of Chemical Technology (IICT) has identified 15 such essential agrochemicals and pesticides whose patents are set to expire soon and are being presently imported from China.

18th August, 2018

A mission mode project will be launched by IICT in the next few months with a deadline of March 2020, to develop indigenous processes for manufacturing these pesticides, IICT Director Dr S Chandrasekhar told Express. As a result, once the patents of these imported pesticides expire, Indian companies can start manufacturing them as per the process developed by IICT so that the pesticides will be available at affordable cost to the farmers. This mission mode project by Council for Scientific and Industrial Research (CSIR) is a part of Central government's initiative of doubling the income of farmers by 2022. IICT will play the role of nodal lab for this project and work along with seven other CSIR laboratories in the country to achieve this target. The Hyderabad-based chemical lab will also be the 'kilo lab' for this project, which means that it will be responsible for scaling up of the manufacturing process developed for 15 pesticides and manufacturing them in large amounts, for demonstrating them to the industry.

When contacted, Dr T Shekharam, Senior Principal Scientist, IICT, said, “New-age pesticides play an important role in agriculture and are required for doubling the income of farmers. However, Indian pesticide companies do not have very good research and development facilities, as they usually buy active ingredients and manufacture pesticides. As IICT has been working on synthesis of chemicals since long, we have been given this project.”

He also said that as Central government is also focusing on ‘more crop per drop’ for improving crop productivity with water efficiency in agriculture, an important intervention required for this is improving usage of crop protection chemicals like pesticides, which are used in India in very small quantities compared to the West. Once Indian companies get the ability to manufacture these pesticides, they can be available at cheaper price.

Published in:
[The Indian Express](#)

CSIR-NEERI

18th August, 2018

‘Circular economy can bring India benefits of Rs 40 lakh cr by 2050’

14 अगस्त/ August 2018



Dr P Ram Babu (centre) flanked by Dr J S Pandey (left) and Prakash Kumbhare (right) at Prof P Khanna Memorial Lecture organised by and at NEERI.

■ Staff Reporter

“THE implementation of circular economy in the areas of construction, food and agriculture, and vehicle manufacturing could bring India annual benefits of Rs 40 lakh crore (US\$ 624 billion) in the year 2050 compared with the current linear economy,” observed Dr P Ram Babu, Chief Executive Officer of RSMGC Advisory Services Pvt Ltd, Mumbai.

Dr P Ram Babu was delivering Prof P Khanna Memorial Lecture organised by CSIR-National Environmental Engineering Research Institute (CSIR-NEERI) in NEERI Auditorium the other day. Dr J S Pandey, Chief Scientist and Science Secretary; and Prakash Kumbhare, Senior Principal Scientist, NEERI were present on the occasion.

Delivering the lecture on ‘Can Circular Economy be the next Renewable Energy?’, Dr P Ram Babu

said that aligning waste management with the circular economy was a big challenge. Development of a circular economy will require high-quality, secondary raw materials that can be fed back into production processes to derive profit from waste, he added. According to him, waste management sector will have to become a key partner in building new business models that focus both on waste prevention and turning waste into a resource. “We need to strengthen the waste hierarchy which prioritises actions to take at end of life of products,” he said.

Earlier, in his welcome address, Dr J S Pandey briefed the audience about significant contributions of Prof P Khanna. He said that Prof Khanna had initiated various new research and development areas in CSIR-NEERI. Prof Khanna had a vision and determination, he added.

The students and faculty of J D College of Engineering & Management, and Priyadarshini College of Engineering also visited the research and development facilities of NEERI, and interacted with the scientists and attended the lecture.

Akanksha conducted the proceedings and Prakash Kumbhare proposed a vote of thanks.

Published in:

The Hitvada

CSIR

18th August, 2018

सीएसआईआर का राजस्व चार गुना बढ़ा

इजाफा

नई दिल्ली | विशेष संवाददाता

खुद के द्वारा विकसित तकनीकों के हस्तांतरण और उस पर मिलने वाली रायल्टी से वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद (सीएसआईआर) के राजस्व में करीब चार गुना की बढ़ोतरी हुई है। सीएसआईआर की रायल्टी जहां 2012-13 में महज 146 करोड़ रुपये सालाना हुआ करती थी, वहीं 2017-18 में यह बढ़कर 515 हो गई है।

सीएसआईआर के महानिदेशक डॉ. गिरीश साहनी ने कहा कि हमने हाल के वर्षों में शोध को लेकर अपना नजरिया

जानकारी दी

- सीएसआईआर के महानिदेशक डॉ. गिरीश साहनी ने जानकारी दी
- 2012-13 में 146 करोड़ रुपये सालाना हुआ करती थी रायल्टी

बदला। पहले जहां शोध का मकसद रिसर्च पेपर प्रकाशित करने तक ही सीमित रहता था, वहीं अब हमने शोध के क्षेत्रों को चिह्नित कर लक्षित शोध किया।

साथ ही प्रयोगशालाओं को इसके लिए भी प्रेरित किया है कि वे अपने शोध को बाजार तक पहुंचाने के प्रयास करें। इसके अलावा प्रयोगशालाओं में अधूरे प्रोजेक्ट को पूरा किया गया है।

इससे तकनीकों के हस्तांतरण में तेजी आई है। इससे सीएसआईआर के राजस्व में उछाल आया है। यह अब 515 करोड़ तक पहुंच गया है जबकि 2016-17 में यह 301 करोड़, उससे पहले 193, करोड़, उससे पूर्व 188 तथा उससे पहले 159 करोड़ होता था। उन्होंने बताया कि तकनीकों से होने वाली आय के अलावा सीएसआईआर करीब चार सौ करोड़ रुपये से अधिक सालाना कंसल्टेंसी कार्य से अर्जित कर रहा है।

उन्होंने कहा कि जिस प्रकार हाल में लक्षित शोध पर ध्यान केंद्रीत किया गया है और उत्पादों को बाजार में लाने के लिए प्रयास तेज किए गए हैं, उससे आने वाले समय में सीएसआईआर के राजस्व में भारी बढ़ोतरी होने की संभावना है।

Published in:

Hindustan, Page no. 13

Bharat Electronics, CSIR-NAL ink technical collaboration agreement

CSIR-NAL

16th August, 2018

To design and develop electronic target system for training purposes

Defence PSU Bharat Electronics Ltd (BEL) has signed a Technical Collaboration Agreement (TCA) with CSIR-NAL for the design and engineering, production and commercialisation of an Electronic Target System (ETS), a modern training aid meant to enhance the marksmanship of defence and paramilitary forces during live firing exercises on the field. The agreement heralds a new beginning in ties between BEL and CSIR labs for developing products targeting niche market segments. The agreement was signed by Anandi Ramalingam, Director-Marketing, BEL, and Jitendra J Jhadav, Director CSIR-NAL, in the presence of Gowtama M V, Chairman and Managing Director, BEL, and other senior officers of BEL and CSIR-NAL, at the BEL corporate office here on August 14.

Designed by CSIR-NAL, ETS is a technically superior and cost-effective solution for police, paramilitary and defence personnel looking at acquiring sharp shooting skills in small fire arms, as well as honing their proficiency in tactical field firing. With this technology, BEL is targeting a market of about 1,500 lanes. Currently, after firing a shot, a shooter is unable to instantly gauge if he has hit or missed the target and by what margin and needs to move near the target to examine the results. ETS helps instantly identify the hit location on a display positioned beside him. CSIR-NAL has developed two technologies for the Electronic Target System — Detection and Hit Visualisation using Acoustics N-wave Identification (DHVANI) and Acoustics-Based Hit Identification and Analysis System (ABHIAS) — using which the shooter can instantly see, after each shot, the result on an electronic display placed nearby. This enables the shooter to constantly self-monitor his progress and take remedial steps to improve his accuracy.

Published in:
[Business line](#)

DCM seeks CSIR-NEIST & RFRI help in strengthening state's R&D wing

CSIR-NEIST

16th August, 2018

JORHAT (Assam), Aug 16: Arunachal Pradesh Deputy Chief Minister Chowna Mein has sought assistance from the Council of Science & Industrial Research-North East Institute of Science & Technology (CSIR-NEIST) & Rain Forest Research Institute (RFRI) here in developing the research & development (R&D) wing of Arunachal. “Intervention of scientific technology is essential to convert bio-resources into bio-enterprise for uplift of our rural economy,” said Mein during an interaction with the heads and scientists of CSIR-NEIST & RFRI here on Thursday. “Arunachal Pradesh is blessed with vast biodiversity which can give huge economic return to the rural people who are the custodians of the forests. However, these resources have to be scientifically and sustainably used, which is possible only through the development of technology,” he said. He asked the heads of the institutes to sign an agreement with the State Horticulture Research & Development Institute (SHRDI) and the State Forest Research Institute of Arunachal Pradesh on technical cooperation and sharing of resources for various R&D projects for the benefit of the rural masses. Mein also visited the scientific farm, distillation unit, herbal drug processing unit, laboratories, and the Rural Technological Demonstration Centre of the CSIR-NEIST. SCIR-NEIST In-charge Dr P Sengupta made a PowerPoint presentation on the activities carried out by the research institute in Arunachal Pradesh. RFRI Director Dr RSC Jayaraj also spoke.

The DCM was accompanied by Senior Consultant to GoAP GN Sinha and SHRDI Head Egam Basar.

Published in:
[The Arunchal Times](#)

CSIR's new patented Clot buster, PEGylated Streptokinase set to revolutionize the treatment of Strokes.

CSIR-IMTECH



A new Clot buster, PEGylated Streptokinase - a Novel Biological Entity developed by Dr. Girish Sahni, DG, CSIR and Secretary, DSIR and his team of inventors at CSIR-Institute of Microbial Technology (CSIR-IMTECH), Chandigarh is all set to revolutionize the treatment of ischemic strokes. **Ischemic stroke** is a condition caused by a dysfunction in the supply of blood to the brain due to emboli, thrombus or atherosclerosis occurring in cerebral arteries. According to the American Stroke Association (ASA), brain strokes are the second leading cause of death in the world with a staggering 15 million people effected causing 11 million people

14th August, 2018

either die or become permanently disabled. Surprisingly, the prevalence of stroke is much higher in India than the West and about 87% of all strokes are ischemic strokes. CSIR-IMTECH and Epygen Biotech Pvt. Ltd., Mumbai, have entered into an agreement for the latter to develop PEGylated Streptokinase for treatment of Ischemic Stroke. Epygen is the first company in India with exclusive license of this Novel Biological Entity (NBE) thrombolytic protein for ischemic stroke. Epygen Biotech Pvt Ltd is a biopharmaceutical company, engaged in research and manufacturing of Therapeutic Proteins for Oncology, Cardiovascular and Immune disorders. PEGylated Streptokinase, the novel recombinant protein Thrombolytic molecule has been precisely engineered through decades of research for enhanced proteolytic stability and extended plasma half-life, fibrin-specificity and associated clot specificity, with reduced immuno-reactivity which would be significant attributes with unmistakable clinical advantages such as

reduced probability of hemorrhage over current treatment regimens of thrombolytic drugs for acute stroke. These are huge advantages with a potential to transform the way ischemic stroke, deep-vein thrombosis, pulmonary embolism and acute myocardial infarction are treated around the globe, especially in the developing world.

Published in:

[PIB](#)

CSIR-IITR

14th August, 2018

IITR transfers tech for cheap potable water

HT Correspondent

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LUCKNOW: To provide a cheaper alternative for clean water, the Indian Institute of Toxicology Research (IITR) signed a memorandum of understanding to transfer technology with a private firm on Monday.

As per the contract, IITR will share the technology developed at the institute to disinfect water at as low as 1 to 2 paisa per litre. "We have tested and developed the technology for over two years. There are two models, technology of which was shared

today with the company," said director, IITR Lucknow, Alok Dhawan.

The MoU was signed between Dr KC Khulbe, head, research and planning, at IITR and Dr Vinayak Nath from the private firm SS Maser Technology Private Limited.

Based on the process of electrolysis, the purification system is capable of disinfecting 400 litres of water per hour. A smaller version to be used by local residents was capable of filtering 10 litre very hour, said the director. "The machines are developed on a modular struc-

ture which provides opportunity to modify them as per specific requirements," he added.

Speaking about the advantages, the director informed that the machine was superior to existing RO plants which were used in houses. "The technology doesn't waste any water or skim important minerals from it as done by a tradition RO purifier," he explained.

Representatives of the private company claimed that the company was already on way to signing a contract with some state governments. "The purifiers require very low maintenance

and need very little electricity. This makes it suitable for use, especially in rural areas," said Dr Vinayak Nath.

The company is planning to launch three purifiers priced between R9,000 to 15,000. The products would be introduced in the market by Diwali this year, claimed the company officials.

The director said that IITR was working with other institutes to develop food and consumer safety solutions to ensure purity of packaged food items. The director listed several technologies which IITR would develop before March 2020.

Published in:
Hindustan Times

CSIR-IITR

14th August, 2018

आईआईटीआर ने निजी कंपनी को तकनीक हस्तांतरित की, दीपावली से पहले 'ओ नीर' बाजार में आएगा, पेयजल की बर्बादी भी रोकी जा सकेगी

नई तकनीक से दो पैसा प्रति लीटर खर्च पर मिल सकेगा पीने का शुद्ध पानी

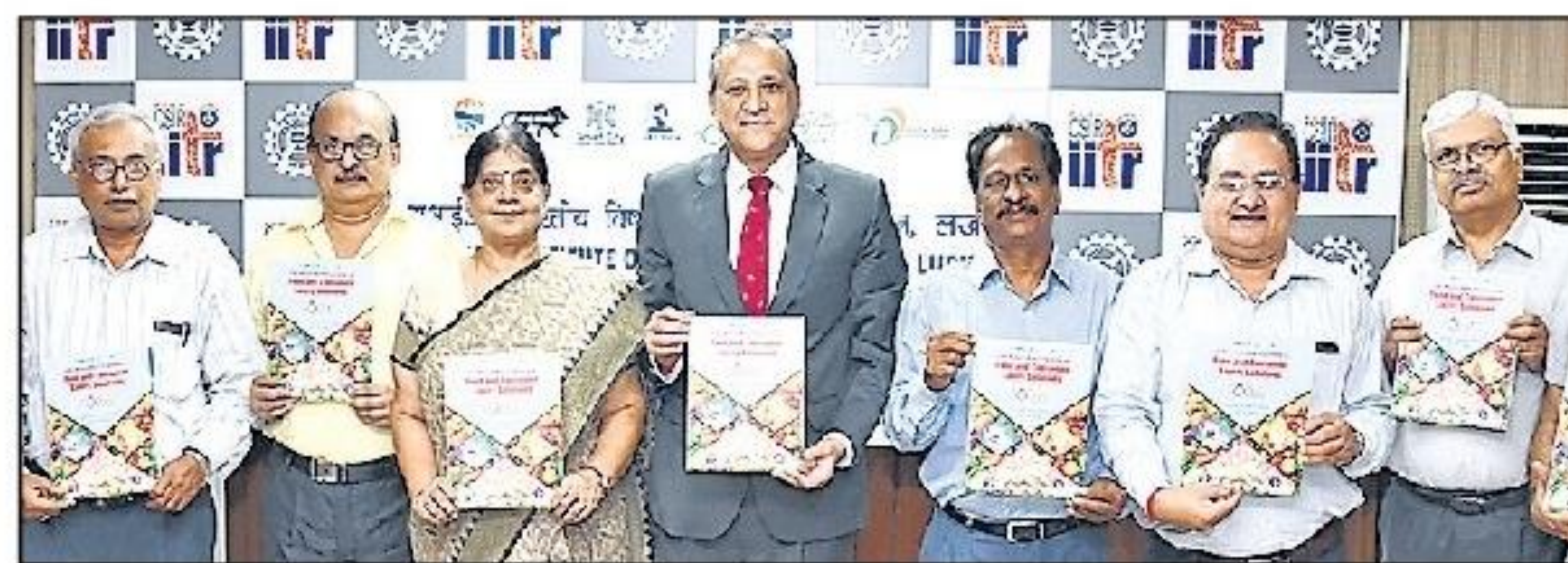


लखनऊ | प्रमुख संवाददाता

स्वच्छ पानी के लिए अब भारी-भरकम खर्च करने की जरूरत नहीं होगी। न ही सालाना मरम्मत पर का कोई अतिरिक्त भार पड़ेगा। सिर्फ दो पैसे प्रति लीटर के खर्च पर पीने का स्वच्छ पानी उपलब्ध होगा। भारतीय विष विज्ञान अनुसंधान संस्थान

'ओ नीर' तकनीक सोमवार को हस्तांतरित कर दी गई। कंपनी ने दीवाली से पहले चार माडलों में उपकरण बाजार में उतारने का वादा किया है।

आईआईटीआर के निदेशक प्रो. आलोक धवन की उपस्थिति में संस्थान के योजना एवं व्यापार विकास प्रभाग प्रमुख डॉ. केसी खुल्बे व स्टर्लाइजेशन टेक कंपनी एसएस मेजर टेक्नोलॉजी प्राइवेट लिमिटेड के सीईओ प्रोफेसर विनायक नाथ ने अनुबंध पर हस्ताक्षर किया है। प्रो. धवन ने कहा पानी को स्वच्छ करने के लिए घरों व



सोमवार को आईआईटीआर की ओर से पेयजल शोधन तकनीक का हस्तांतरण हुआ बड़ी मात्रा में पानी बर्बाद हो रहा है। इसके अलावा कई मिनरल व अन्य जरूरी तत्व भी समाप्त हो जाते हैं जो स्वस्थ शरीर के लिए बहुत जरूरी हैं। संस्थान द्वारा विकसित 'ओ नीर' में न तो पानी बर्बाद होगा और न ही जरूरी तत्व समाप्त होंगे। पानी में

वैक्टीरिया, कवक, प्रोटोजोआ व सिस्ट) के साथ ही गंध, रंग, लोहा, आर्सेनिक, फ्लोराइड को भी समाप्त किया जा सकेगा। इस तकनीक से पानी में उपस्थित 8 लॉग स्तर तक जीवाणु व कवक नष्ट हो जाते हैं। माडयलर डिजाइन के कारण

10 मिनट में 10 लीटर पानी शुद्ध करेगा

इस तकनीक से 10 मिनट में 10 लीटर पानी का शोधन हो सकेगा। इसे सौर ऊर्जा भी चला सकेंगे। कम क्षमता के उपकरण में बैटरी होने से बिजली जाने के बाद भी दस-दस लीटर पानी तीन बार शोधित कर सकता है। मेम्ब्रेन युक्त प्रौद्योगिकी के कारण पानी की बर्बादी भी नहीं होती है।

5000 से एक लाख लीटर प्रति दिन या उससे भी ज्यादा बढ़ाया जा सकता है। कंपनी तीन माडल बाजार

स्मार्ट सेंसर देगा टैंक भरने की जानकारी

प्लांट में लगा स्मार्ट सेंसर टैंक भरने पर जानकारी देगा। इसके साथ ही कोई खराबी होने पर सीधे कंपनी को मैसेज पहुंचाएगा। इस तकनीक से पानी शोधन के बाद बाहर से कोई रसायन मिलाने की जरूरत नहीं। इस उपकरण में ज्यादातर स्टील का ही इस्तेमाल हुआ है।

15 हजार रुपए तक होगी। 500 लीटर प्रतिघंटा की क्षमता के उपकरण बड़े संस्थानों के लिए

Published in:
Hindustan times

CSIR-IITR

13th August, 2018

CSIR-IITR paves way for clean and safe drinking water along with food and consumer safety solutions

Lucknow, Aug 13 (UNI) CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow formally signed a Transfer of Technology- (TOT) agreement with M/s SSMaser Technology Private Limited, A Sterilisation Tech Company, for “An electronic device for the disinfection of drinking water” here on Monday.

The agreement was signed by Dr KC Khulbe, Head-Research Planning and Business Development, CSIR-IITR and Professor Vinayak Nath, Co-Founder, ED and CEO of M/s SSMaser Technology Private Limited. This initiative by CSIR-IITR in the state of Uttar Pradesh is in alignment with the Central Government initiatives on ‘Make in India’, ‘Kayakalp’, “Digital India” and ‘Startup India’ to raise support for various MSMEs and comprehensively integrate the national missions of Swastha Bharat and Swachh Bharat and SSMaser’s Technology “Building Bharat Initiative”. Professor Alok Dhawan, Director, CSIR-IITR and Mr Monish Bhandari, ED, SSMaser Technology Private Limited were present along with other scientists and dignitaries in the programme.

On this day, CSIR-IITR also launched a new CSIR India Mission-Mode Programme on Food and Consumer Safety Solutions (FOCUS): Delivering Technological Solutions for Food Safety. Professor Alok Dhawan, Director, CSIR-IITR informed that the considering the national priority of safe food for all, a series of stakeholder dialogues initiated by CSIR-IITR to provide safe and nutritious food led to the identification of gaps where technological interventions are required. Several major industries and regulatory agencies including FSSAI, BIS and Export Council of India were consulted during the formulation of this mission mode programme to meet the unmet needs of the farmers, industries, consumers and regulatory agencies.

Seven laboratories of CSIR (have come together to work in this mission mode programme to provide solutions from “seed to stomach”. The deliverables of FOCUS will provide solutions for the farmers by providing cost effective and efficient embedded controlled storage chamber and electrostatic coating system for preserving and enhancing the shelf life of fruits and vegetables.

New methods and technologies for detection of mycotoxin, pesticides and other contaminants in food products will be developed to cater the need of testing requirements be regulatory agencies for export. The project will address the problem of adulteration in milk and milk products, and sensors and devices for detection of adulterants and contaminants in milk products, ghee and edible oils will be developed for use by the regulator as well as the consumer.

Also, multi-analyte sensors will be developed for the detection of spoilage in the packaged foods such as packaged juice, meat and dairy products. The knowledge generated will be disseminated to the public through new apps, street-vendor’s awareness programmes and stakeholders workshops. FOCUS has strong relevance to Make in India, Swasth Bharat, Swachh Bharat, Innovate in India, Skill India and Startup India.

UNI JDM SW 2256

Published in:

[UNI](#)

NAL to develop drones for civilian use: Minister

CSIR-NAL

13th August, 2018

State-run National Aerospace Laboratories (NAL) will develop drones or unmanned aerial vehicles (UAVs) for civilian use in various sectors, a Union Minister said on Monday.

"The UAVs developed at NAL will be used in surveillance, agriculture, health, forests, mining and other civil sectors," Union Minister for Science and Technology Harsh Vardhan told reporters after unveiling NAL's UAV design and integration facility here. Noting that the drones will help boost productivity in every sector with better monitoring, Vardhan said the UAV use will contribute to the national Gross Domestic Product (GDP). Stating that every technology developed needs to find its use in public and private sectors, Vardhan said that NAL, working under the aegis of the Council of Scientific and Industrial Research (CSIR), will also accept commercial orders for developing drones. NAL Director Jitendra J. Jadhav told IANS that the hi-tech facility, set up at a cost of Rs 2 crore, has an installed capacity to develop 30 drones a month. The facility can design, prototype and develop drones that can carry payloads from 5kg-100 kg with a two-metre wing span. The NAL will make prototypes and tie-up with state-run firms like Hindustan Aeronautics Limited (HAL) or a private partner to manufacture the drones in case of large orders. "The UAVs are as important as fighter aircraft," the Minister added. Apart from the critical strategic and commercial surveillance, drones find their use in mapping of crops, mines and water bodies, search and rescue operations, transport of medicines or organs for transplantation. The state-run Defence Research and Development Organisation, which also develops UAVs, makes drone technologies with a payload capacity up to 250 kg.

Published in:
[Business Standard](#)

IGIB team finds a new target to reverse iron overload disease

CSIR-IGIB

12th August, 2018



Instead of picking one target for drug screen, they focused on the symptoms of the disease

Using zebrafish, researchers at the Institute of Genomics and Integrative Biology (CSIR-IGIB) have successfully discovered a pathway that regulates hepcidin hormone production. The hepcidin hormone, released by the liver, is a central regulator of iron in the body. Dysregulation of the hormone leads to anaemia on one hand and excess iron accumulation in organs such as liver and heart leading to multi-organ failure. Hemochromatosis is a rare hereditary disease that is characterised by iron accumulation or overload in various

tissues. The symptoms are non-specific and hence difficult to diagnose. Current options only manage the disease by removing excess iron. “One method is to bleed the patients and the other is to absorb iron using iron chelation, which is toxic to liver and kidney and may also cause hearing problems. There is no therapy currently available,” says Sandeep Basu from CSIR-IGIB and first author of a paper published in *ACS Chemical Biology*.

Gene mutations

Mutations in about six genes are known to cause reduction in hepcidin hormone production thereby causing excess iron accumulation. But for the study, the research team led by Chetana Sachidanandan created a disease model in zebrafish (a fish exhibiting similar characteristics of the human disease) by mutating one of these genes (TFR2). Mutations in the TFR2 gene cause a severe form of the disease. The zebrafish with the mutant gene showed excess iron accumulation in organs, quite similar to what

is seen in humans. In the conventional drug discovery approach, the target protein and even the pathway are already known and molecules that would either inhibit or overproduce the target protein are screened for. But the researchers adopted a different approach for this study. “Hepcidin gene is controlled by many factors, many of them not well understood. So, instead of picking one target for our drug screen, we focused on the symptoms of the disease — excess accumulation of iron,” says Dr. Sachidanandan. “We knew that hepcidin hormone is low in the hemochromatosis patients, and that this causes iron overload.”

Since the researchers knew hepcidin production is regulated by many signalling pathways, they selected 80 compounds that specifically target signalling pathways in zebrafish. Of the 80 compounds tested, eight were found to induce the production of hepcidin hormone in the fish. “One of these compounds is a blocker of NFkB signalling pathway. This pathway was not known to be important in hepcidin regulation in the liver.” This is the first time that researchers have been able to identify and tell that the NFkB pathway regulates liver hepcidin production.

Unbiased strategy

“It was not a blind screening, but rather we used our existing knowledge about hepcidin regulation. When we don’t have a deep understanding of a disease, but need to discover drug candidates, this kind of unbiased strategy is more efficient,” she says.

The researchers tested the ability of this compound to regulate hepcidin production. “The small molecule targets and inhibits the NFkB pathway signaling thus increasing hepcidin production and reducing iron overload,” says Basu. They tested three more compounds that target the same pathway to confirm that the NFkB pathway is indeed a key to regulating hepcidin production. “There are other signalling pathways that regulate hepcidin production but our discovery places NFkB pathway as an important negative hepcidin hormone production,” Basu says.

When the pathway in the zebrafish model of Hemochromatosis was inhibited using the four compounds, the hepcidin production was restored and iron overload was reduced, thus reducing the severity of the disease.

To further reconfirm the role of the NFkB pathway, the researchers removed it in zebrafish. This led to overproduction of hepcidin hormone in the fish, confirming that the pathway negatively regulates the production of the hormone.

None of the four compounds tested in zebrafish is approved for use in humans; one compound tested is approved for use in poultry. “The target pathway has been identified even though the tested compounds cannot be used as drugs. What is important is that we have found a strategy for therapy,” says Dr. Sachidanandan. “Now that we know the pathway to be targeted, it’s easier to discover drug molecules.”

“In India, Hemochromatosis is still not commonly seen, perhaps because of our underlying iron deficiency. But Thalassemia, is a serious problem where iron overload is very common. We are now working to see if we can apply this therapeutic strategy for Thalassemia patients,” Basu says.

Published in:

[The Hindu](#)

CSIR-CSMCRI

12th August, 2018



Published in:
The Times of India

CSIR-AMPRI

11th August, 2018

Vidyarthi Vigyan Manthan district level winners visit CSIR-AMPRI

■ Staff Reporter

A SEMINAR was organized at CSIR -AMPRI on the subject 'Science for Common people'. Under this program, the selected students mainly Vidyarthi Vigyan Manthan District level winners of competition organised by Vigyan Prasar, NCERT, and Vigyan Bharti visited CSIR and also interacted with scientists. On this occasion, Dr. Avanish Kumar Srivastava director AMPRI interacted with students. He also highlighted the activities of AMPRI. Advanced Materials and Processes Research Institute (AMPRI), Bhopal has carried out projects on the syn-



Eminent guest and speakers at seminar organized in CSIR -AMPRI.

thesis and characterization of aluminum-graphite metal matrix composites and natural fibres. Gradually the scope of R&D broadened to include waste to wealth (building materials and wood substitute), mineral processing, environmental impact assessment, water resource modeling and problems related to agricultural, mining, sugar mill

and thermal power plant machinery components etc. Many other eminent guest were also present during the event.

After this program, students visited various laboratories of AMPRI which includes Radiation Shielding, Geopolymer, Wood substitute, Water resources and material characterization laboratory etc.

Published in:
The Pioneer

CSIR-CSMCRI

11th August, 2018

ભાવનગરની સોલ્ટ ઈન્સ્ટીટ્યૂટ દ્વારા 'જિજ્ઞાસા કાર્યક્રમ' રોજિંદા જીવનના વિજ્ઞાન વિશે છાત્રોને જાગૃત કરવાના પ્રયાસ

જામનગરની પાંચ કેન્દ્રિય વિદ્યાલયોમાંથી વિદ્યાર્થીઓ-શિક્ષકોએ લીધેલો ભાગ

। ભાવનગર ।

વિદ્યાર્થીઓને રોજિંદા જીવનના વિજ્ઞાન વિશે જાગૃત કરવાના પ્રયાસરૂપે સીએસઆરઆઈ અને કેન્દ્રીય વિદ્યાલય સંગઠન વચ્ચે થયેલી સમજૂતી અંતર્ગત તાજેતરમાં જામનગરની કેન્દ્રીય વિદ્યાલય નં.૩, એએફ-૨માં સીએસઆરઆઈ-સીએસએમ સીઆરઆઈના વિજ્ઞાનીકો દ્વારા જિજ્ઞાસા કાર્યક્રમ યોજાયો હતો. આ કાર્યક્રમમાં જામનગરની પાંચ કેન્દ્રીય વિદ્યાલયોમાંથી કુલ એસી વિદ્યાર્થીઓ તથા પંદર શિક્ષકોએ ભાગ લીધો હતો. સીએસએમસીઆરઆઈ તરફથી વિજ્ઞાનિક તરીકે ફરજ બજાવતા ડૉ.

બીનિસાર આહમેદ તથા શ્રી ભૌમિક સુતરીયાએ આ કાર્યક્રમને હોસ્ટ કર્યો હતો.

કાર્યક્રમની શરૂઆત વિદ્યાર્થીઓ દ્વારા સુંદર સ્વાગત ગીત ગાવાથી થઈ. પ્રિન્સિપાલ શ્રીમતી રાજરાનીએ વિજ્ઞાનીકોનું સ્વાગત કર્યું. પહેલા સત્ર દરમિયાન ડૉ.બીનિસાર આહમેદે ફોટોકેમિસ્ટ્રીની સુંદરતા વિષે વાર્તાલાપ કર્યો. તેમણે ઈલેક્ટ્રોમેગ્નેટિક કિરણોના વિવિધ ભાગો તેમની ખાસિયતો અને ઉપયોગો વિષે ચર્ચા કરી તથા ઈલેક્ટ્રોમેગ્નેટિક કિરણોની અસરથી રસાયણના ક્ષરમાં આવતા પરિવર્તન વિષે પ્રાયોગિક પ્રદર્શન પણ આપ્યું.

બીજા સત્ર દરમિયાન શ્રી ભૌમિક એ પીવાના પાણીની કટોકટી અને પાણીના શુદ્ધિકરણ વિષે વિદ્યાર્થીઓને જાગૃત કર્યા. પીવાના પાણીનું મહત્વ, ડબલ્યુએચઓ અને બીઆઈએસ સ્ટાન્ડર્ડ્સ, પાણીના શુદ્ધિકરણની

પ્રક્રિયાઓ વગેરેની ચર્ચા કરી અને રિવર્સ ઓસ્મોસિસની ખાસિયતો પણ બતાવી. પ્રાયોગિક પ્રદર્શનમાં તેમણે વરસાદના પાણીના શુદ્ધિકરણ માટેની ઘરેલુ પદ્ધતિ બતાવી.

કાર્યક્રમના ત્રીજા સત્રમાં કેન્દ્રીય વિદ્યાલય નં.૩, એએફ-૨ના વિદ્યાર્થીઓ દ્વારા પ્લાસ્ટિક પ્રતિબંધ પર એક નાટકનું આયોજન કરવામાં આવ્યું હતું. એમના દ્વારા પ્લાસ્ટિકથી થતા નુકસાનો તથા પ્લાસ્ટિકને નષ્ટ કરવામાં આવતી આડ અસર વિષે ભાર દેતા પ્લાસ્ટિકના ઉપયોગ પર પ્રતિબંધ લાવવાનો સંદેશ આપવાનો પ્રયાસ કરાયો હતો.

જિજ્ઞાસા કાર્યક્રમના અંતર્ગત વિજ્ઞાનીકો ડૉ.બીનિસાર આહમેદ તથા શ્રી ભૌમિક સુતરીયા દ્વારા કેન્દ્રીય વિદ્યાલયોની આ બીજી મુલાકાત હતી. હવે આ વિજ્ઞાનીકો તા.૧૮-૦૮-૨૦૧૮ના રોજ કેન્દ્રીય વિદ્યાલય નં.૧, ભુજની મુલાકાત લેશે.

Published in:

Sandesh

Country can generate 2 Billion tonnes of Bio-Diesel by 2022

CSIR-IICT



Hyderabad: The country will emerge successful in meeting the global demands of clean and renewable energy sources with the prospect of generating two billion tonnes of bio-diesel by the year 2022, according to Y B Ramakrishna, Chairman, Working Group on Bio-Fuels, Ministry of Petroleum and Natural Gas. Speaking on the second day of the three-day international conference on sustainable chemistry on health, environment and materials (Su-Chem) at the Indian Institute of Chemical Technology (IICT) organised as part of its platinum jubilee celebrations, he mentioned the government's strategy for generating second generation ethanol production from sugar industries waste as

10th August, 2018 well as other biomass from sweet sorghum, pearl millet. Ramakrishna said that the modern ongoing research in several national institutes, including CSIR-IICT, on bio-ethanol production was worth commending. In a series of lectures, eminent scientists from the UK, the US, Australia and Germany laid stress on their research findings on alternate energy sources for the next generation. Dr. Dionisi, University of Aberdeen (UK) showcased his research on anaerobic digestion of biomass including feed stocks –grass, vegetable waste and industrial wastewaters as well as model substrates for the production of chemicals, such as short chain organic acids and energy molecules, such as hydrogen. Dr Somnath Basu from Global Process Engineering and CTO, Headworks International (Houston-US), shared the firm's newer technology of treating waste water using 'moving bed bio-reactor' yielding a source of 'green energy'. Dr. Beltramini of University of Queensland (Australia), threw light on critical designing of heterogeneous catalysts.

Dr. Kalevaru from Leibniz Institute for Catalysis (Germany) explained the catalytic performance of palladium catalysts. Prof. Philip from IIT-Madras, explained the immediate steps essential for removal of contaminants from the effluent water. Prof Dong-Soo Shin of Changwon National University (South Korea), shared the unique synthesis of excellent organic-inorganic hybrid material with extreme thermal and mechanical stability. Prof. Jin K Cha, of Wayne State University (USA) described the synthesis of alkaloids with molecular complexity by his group. Novel anti-cancer molecules Prof Tietze from Goettingen (Germany) shared with the gathering the unique process of targeting cancer cells using Antibody Directed Enzyme Prodrug Therapy (ADEPT). With this technical knowhow, existing from 1985 in the world, Goettingen successfully synthesized novel anti-cancer molecules that can target cancer cell at an extremely low concentration as much as 150 femto molar level. Chairman of the session, Dr. Rama Rao, former ICT Director, observed that one day Prof. Teitze's developed molecule will come to the market as the most effective drug for cancer cure.

Published in:

[UNI](#)

CSIR-IMTECH

8th August, 2018

अहम काम

एक ऐसा डिटेक्टर जो पकड़ लेगा हर विस्फोटक

डॉ. रविंद्र मलिक, चंडीगढ़

इमटेक के छात्रों ने किया कमाल, छह साल के शोध का नतीजा, तीन करोड़ आया खर्च, आरडीएक्स, बारूद और टीएनटी का चलेगा पता

अब हर तरह की विस्फोटक सामग्री का पता एक ही उपकरण से लग जाएगा। इसके लिए अलग-अलग मशीनों की जरूरत नहीं होगी। चंडीगढ़ में इंस्टीट्यूट ऑफ माइक्रोबियल टेक्नोलॉजी (इमटेक) के स्टूडेंट्स ने छह साल की कड़ी मेहनत के बाद ऐसा एक्सप्लोसिव डिटेक्टर बनाया है, जो सुरक्षा के लिहाज से बेहद कारगर है।

विस्फोटक को कैसे भी छिपाया गया हो, इस उपकरण से बचा नहीं जा सकेगा। जिस चीज में विस्फोटक छुपाया गया होगा, उसके ऊपर घुमाने से ही पता लग जाएगा। इमटेक की पीएचडी स्कॉलर शिल्पा, हेमंत, शशि और अनुराग कश्यप ने डॉ. सीआर सूरि व डॉ. प्रवीण के अंडर शोध के बाद यह कामयाबी हासिल की है।

लिविड का रंग बदलते ही होगी पुष्टि: अगर कोई सामान लेकर जा रहा है या सिव्योरिटी को किसी पर संदेह है तो उसके सामान के ऊपर से गोला कपड़ा घुमाना है।

तीन तरह का होता है विस्फोटक

तीन तरह का बारूद होता है। इनमें आरडीएक्स, पीईटीएन और टीएनटी शामिल हैं। इनमें सबसे खतरनाक आरडीएक्स होता है। अगर पैकिंग में विस्फोटक सामग्री है, तो महज पार्ट पर मिलियन (पीपीएम) मात्रा की चेकिंग से ही पता चल जाएगा। इसकी डिटेक्शन पावर को पार्ट पर बिलियन और ट्रिलियन तक डेवलप किए जाने पर काम हो रहा है।

फिर गोले-कपड़े से निकले पानी को उपकरण में बने तीन छिद्र में डाला जाएगा। इसके बाद कुछ देर अंदर रखा जाएगा। अगर लिविड का रंग बदलता है तो अंदर एक्सप्लोसिव की पुष्टि होगी।

नेशनल सिव्योरिटी गार्ड्स (एनएसजी) के सामने उपकरण का प्रजेंटेशन हो चुका है। उपकरण की विश्वसनीयता 95 फीसद तक है। दो बार इसकी टेस्टिंग हो चुकी है और यह परीक्षा में खस-उत्तर है। इसको और विश्वसनीय बनाने को लेकर भी काम जारी है।



चंडीगढ़ में इमटेक के स्टूडेंट शिल्पा, हेमंत और सीआर एक्सप्लोसिव डिटेक्टर को लेकर प्रजेंटेशन देते हुए।

जागरण

बॉर्डर और एयरपोर्ट पर हो सकता है बेहद कारगर

यह एक्सप्लोसिव डिटेक्टर बॉर्डर एरिया और एयरपोर्ट पर सबसे ज्यादा कारगर रहेगा। एयरपोर्ट के हर गेट पर इसको लगाया जा सकता है और एक ही जगह इसके इनपुट मिल सकेंगे। उपकरण को बनाने में स्टूडेंट्स और फैकल्टी को रिसर्च करते हुए छह साल लगे हैं। इसकी रिसर्च पर करीब तीन करोड़ का बजट भी खर्च हुआ है।

वायरलेस और पोर्टेबल, इंटरनेट से चलाया जा सकेगा

यह उपकरण इस्तेमाल करने के लिहाज से बेहद सहूलियत भरा है। यह पूरी तरह से वायरलेस और पोर्टेबल है। जरूरत के हिसाब से कहीं भी आसानी से लाया और ले जाया जा सकता है। यह पूरी तरह से इंटरनेट से संचालित होगा।

Published in:

Dainik Jagran, Page no. 13

With thrust on garbage mgmt, IIT inks MoU with 4 CSIR labs

CSIR

7th August, 2018

The Indian Institute of Technology (IIT), to mark the third year of its establishment in Goa, has entered into MoUs with four laboratories of the Council of Scientific & Industrial Research (CSIR). Among other things, IIT Goa and CSIR's Central Mechanical Engineering Research Institute, Durgapur, will study a suitable waste treatment facility for Goa and beyond. IIT Goa has identified garbage management as one of the key areas where it wants to contribute to helping the government. The institute has thus decided to help find a technological solution to the problem. One of the solutions being looked at by is the possibility of creating a cost-effective machine that can separate organic waste from inorganic waste at a fast pace, so that the organic waste can then be treated. While the IIT, with the National Institute of Oceanography, will study the area of ocean engineering and nonconventional energy, the IIT will team up with the Institute of Minerals and Materials Technology to research minerals processing and metallurgy, said IIT Goa director BK Mishra. "The areas outlined are where a major thrust of the research will be, but the scope will not be limited to these," said Mishra. The IIT, which is presently housed on the campus of the Goa Engineering College, will also study computer-aided design and manufacturing, electronics and telecommunications. An MoU to this effect was signed with CSIR-AMPRI, Bhopal.

Published in:
[Times of India](#)

CSIR-IICT

5th August, 2018

సుస్థిరాభివృద్ధికి శాస్త్రీయ విజ్ఞానమే కీలకం

- ఆర్ఆండ్డీపైనే ఆధారపడిన దేశ శ్రేయస్సు, భద్రత
- వ్యవసాయంపై పరిశోధనలు విస్తృతం చేయాలి
- ఐఐసీటీ ప్లాటినంజూబ్లీ వేడుకల్లో ఉపరాష్ట్రపతి వెంకయ్యనాయుడు

హైదరాబాద్, నమస్తే తెలంగాణ: సుస్థిరాభివృద్ధికి శాస్త్రీయ విజ్ఞానమే కీలకమని, ప్రపంచ మానవాళి నాణ్యమైన జీవనానికి పరిశోధనలు దోహదం చేస్తాయని ఉప రాష్ట్రపతి వెంకయ్యనాయుడు పేర్కొన్నారు. దేశ శ్రేయస్సు, భద్రత.. పరిశోధన, అభివృద్ధి (ఆర్ఆండ్డీ)పైనే ఆధారపడి ఉన్నాయని అభిప్రాయ పడ్డారు. దీనికి ప్రభుత్వం బడ్జెట్లో కేటాయింపులు పెంచాలన్నారు. ఆదివారం హైదరాబాద్లోని సీఎస్ ఐఆర్- ఐఐసీటీ (ఇండియన్ ఇన్స్టిట్యూట్ ఆఫ్ కెమికల్ టెక్నాలజీ)లో 75 సంవత్సరాల (ప్లాటినంజూబ్లీ)



ఆదివారం ఐఐసీటీ ప్లాటినంజూబ్లీ వేడుకలను ప్రారంభిస్తున్న ఉపరాష్ట్రపతి వెంకయ్యనాయుడు. చిత్రంలో కేంద్రమంత్రి హర్షవర్ధన్, గవర్నర్ నరసింహన్, డిప్యూటీ సీఎంఎల కడియం శ్రీహరి, మహమూద్ అలీ ఉన్నారు.

వేడుకలు నిర్వహించారు. దీనికి ముఖ్యఅతిథిగా ఉప రాష్ట్రపతి వెంకయ్యనాయుడు హాజరయ్యారు. కేంద్ర మంత్రి హర్షవర్ధన్, గవర్నర్ ఈఎస్ఎల్ నరసింహన్, ఉప ముఖ్యమంత్రులు కడియం శ్రీహరి, మహమూద్ అలీ, ఐఐసీటీ డైరెక్టర్ ఎస్ చంద్రశేఖర్ పాల్గొ

న్నారు. ఈ సందర్భంగా వెంకయ్యనాయుడు మాట్లాడుతూ.. వివిధ రంగాల్లో ఆవిష్కరణలు చేస్తూ దేశ నిర్మాణంలో సీఎస్ఐఆర్ ముఖ్య భూమికను పోషిస్తున్నదని ప్రశంసించారు. హైదరాబాద్లోని ఐఐసీటీ 75 ఏండ్లు పూర్తిచేసుకోవడం సంతోషంగా ఉన్న

దంటూ పరిశోధనలో మేటిగా నిలిపిన డైరెక్టర్లకు, సిబ్బందికి, పరిశోధక విద్యార్థులకు శుభాకాంక్షలు తెలిపారు. పైవేటురంగంలోనూ ఈ తరహా పరిశోధనలు పెరుగాలని పేర్కొన్నారు. భారత్ 5000 ఏండ్ల కిందట ఆయుర్వేదాన్ని, 2500 ఏండ్ల కిందట సింధూ నాగరికతలో నీటిపారుదల, డ్రైనేజీ వ్యవస్థ గురించి ప్రపంచానికి పరిచయం చేసిందని తెలిపారు. ఆధునిక భారత్లోనూ సత్యేంద్రనాథ్ బోస్, సుబ్రమణ్యన్ చంద్రశేఖర్, సీవీ రామన్, జగదీష్ చంద్ర బోస్ వంటి శాస్త్రవేత్తలు భారత కీర్తి పతాకాన్ని ఎగురవేశారని చెప్పారు. భారత్లో యువతను పరిశోధనల వైపు మళ్లించేందుకు ప్రయత్నించాలని, యువ శాస్త్రవేత్తలను ప్రోత్సహించాలని సూచించారు. దేశంలో ఎక్కువశాతం మంది ఆధారపడ్డ వ్యవసాయం, పర్యావరణంపై పరిశోధనలు విస్తృతం చేయాలని పిలుపునిచ్చారు. పనితీరు దృష్ట్యా భారత్లోని ప్రభుత్వ సంస్థల్లో సీఎస్ఐఆర్ 9వ ర్యాంకులో నిలువడం గొప్ప విషయమని అభినందించారు.

Published in:

NT PJ

Vice President Inaugurates CSIR IICT Platinum Jubilee Celebrations

CSIR-IICT

5th August, 2018



New Delhi: The Vice President of India, Shri M. Venkaiah Naidu has said that scientific institutions to nurture talent and foster path-breaking innovations to transform the socio-economic landscape of the country. He was addressing the gathering after inaugurating the Platinum Jubilee Celebrations of CSIR-IICT (Indian Institute of Chemical Technology, in Hyderabad today. The Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan, the Governor of Telangana, Shri E.S.L. Narasimhan, the Deputy Chief Ministers of Telangana,

Shri Kadiyam Srihari and Shri Mohammad Mahmood Ali and other dignitaries were present on the occasion.

The Vice President said though we are progressing on various fronts, incremental progress was not enough. He further said that Scientific organizations have to set ambitious goals and strategically position themselves to become leading institutions in the world. The government must facilitate this quest for excellence by providing funds, freedom and flexibility and the private sector also needs to come forward to liberally support research, he added.

The Vice President emphasized the need to hugely step up investments in R & D to promote the culture of innovation and discovery. He further said that reducing procedural bottlenecks, removing hierarchical barriers and resetting priorities is also crucial and the leadership in scientific institutions should encourage bright young scientists to come up with new and unconventional ideas and projects.

“Opportunities must be provided for undertaking path-breaking research that answers one or more of current societal challenges”, he added. Referring to UN’s 17 sustainable development goals which include ending poverty in all its forms, promoting sustainable agriculture and good health, the Vice President cautioned that all these ambitious goals cannot be achieved if we adopt “business-as-usual approach”. He further said that there is no dearth of talent in India and stressed on the need to create the right ecosystem for innovation to thrive. India, with 65 per cent of the population below the age of 35 years must equip the young people with scientific and technological knowledge and skills, he added.

The Vice President said that science is the key lever for sustainable development and a country’s prosperity and security are directly dependent on its scientific and technological progress. He further said that historically India has been a lighthouse of knowledge. Our Ayurveda system of medicine can be traced back to 5,000 B C, Indus Valley Civilization had irrigation and sewerage systems as far back as 2,500 BC, he added. Referring to the contributions made by great Indian scientists like Aryabhata, Varahamira, Charaka, Sushruta, Rishi Kanad and sage Patanjali, the Vice President said that there were innumerable legendary scientists of ancient India, who have enriched the world’s scientific treasure. We need to take pride in their achievements and share the knowledge we had inherited from them with the entire world, he added.

The Vice President said that the spirit of enquiry and the scientific temper, the spirit of asking relevant questions and seeking practical answers must become an integral part of our school and college education systems. The quality of teaching and research in our Universities and scientific institutions must be considerably improved, he added.

The Vice President said that Science has the greatest impact on people’s lives and institutions and asked institutions like IICT to focus on research on key areas such as agriculture and environment. An agriculture dependent country like India cannot progress unless the farmers’ lives are improved, he added.

Following is the text of Vice President's address:

“It is indeed a momentous occasion for CSIR IICT which is entering its platinum jubilee year today after completing 74 years of service. I would like to congratulate its past and present leadership, staff and students for contributing to our country's development over this period. I am sure, the institute will continue this quest for excellence with greater vigour in the years ahead.

Dear Sisters and brothers,

Science is the key lever for sustainable development. A country's prosperity and security are directly dependent on its scientific and technological progress. Scientific innovations from penicillin to space technologies have changed the world forever. Modern drugs, internet, e-commerce, digital learning, innovations in agriculture, bio-technology, construction and infrastructure are some of the innovations that have had a profound transformative impact on our lives. These innovations have by and large been led by the private sector. However, Government has a great responsibility. It has to create regulatory frameworks, create conducive conditions for nurturing research and innovations. CSIR, with its network of 38 state of the art laboratories specializing in chemistry, biology, engineering, oceanography and materials, has been contributing immensely to Government of India's ambitious scientific agenda. I am glad that institutes like IICT are working in that direction.

Historically, India has been a lighthouse of knowledge. Our Ayurveda system of medicine can be traced back to 5000 BC, Indus Valley Civilization had irrigation and sewerage systems as far back as 2500 BC. By 200 BC, South India was making high quality wrought iron and, of course, the invention of 'zero' and contributions to astronomy are well known. Let us look at some of the invaluable contributions made by our ancestors. Aryabhatta's 'Aryabhattiyam' is considered a seminal work; equally pioneering work is Panchasidhhantika of Varahamihira. Of course, Charaka and Sushruta are known as Fathers of Surgery. Rishi

Kanad first spoke of “anu” (atom) as an indestructible particle of matter in Kanada Sutra, while Patanjali is considered as Father of Yoga. There are innumerable legendary scientists of ancient India who have enriched the world’s scientific treasure. We need to take pride in their achievements and share the knowledge we have inherited from them with the entire world. India’s contribution to science in modern era is also quite significant. In early 20th century, Prof. Satyendranath Bose’s ‘BOSON’, Prof. Subramanian Chandrasekhar’s ‘Chandrasekhar limit’, Sir C.V. Raman’s ‘Raman effect’ and Prof. Jagadeesh Chandra Bose’s ‘wireless communication’ have earned global recognition. As a matter of fact, there is no dearth of talent in India. The only thing required is to create the right ecosystem for innovation to thrive.

I am glad to know that CSIR is ranked 9th amongst a total of 1,207 government institutions based on a composite indicator that combines research performance, innovations outputs and societal impact as per latest Scimago rankings. However, we need to hugely step up our investments in R & D to promote the culture of innovation and discovery. Apart from government spend on research, the private sector needs to come forward to liberally support research. The right ecosystem for research and innovation needs to be created in all the scientific labs by reducing procedural bottlenecks, removing hierarchical barriers and resetting priorities.

The leadership in scientific institutions should encourage bright young scientists to come up with new and unconventional ideas and projects. Opportunities must be provided for undertaking path breaking research that answers one or more of current societal challenges. As you all are aware, India along with 192 nations adopted UN’s 17 sustainable development goals. These goals include ending poverty in all its forms, ending hunger and promoting sustainable agriculture, good health, equitable quality education, gender equality, sustainable management of water and sanitation for all. All these ambitious goals cannot be achieved if we adopt the “business- as – usual approach”. Scientific research and innovation can accelerate societal progress on multiple dimensions.

Institutions like CSIR have a major role to play in moving the country forward and transform its socio-economic landscape.

Dear Sisters and Brothers,

We have nearly 800 universities and several important scientific institutions spread across the country. As part of encouraging innovation and improving the quality of life of people, the Government of India has launched several initiatives. 'Make in India' envisages to make India a manufacturing hub for the world and generate millions of jobs. 'Swachh Bharat Abhiyan' intends to create a clean India of Mahatma Gandhi's dreams and can substantially improve our health levels. Schemes like Jan Dhan Yojana, Digital India and Aadhar are aimed to make people partners in the economic development of the country.

All these programmes rely on science and technology. The programmes can be enriched and the outcomes can be more sustainable if they are constantly supported by Research and Development(R&D) efforts. The spirit of enquiry and the scientific temper, the spirit of asking relevant questions and seeking practical answers must become an integral part of our school and college education systems.

India is a young nation today with about 65 per cent of the population below the age of 35 years. We need to fully tap the potential of this huge human capital. We have to equip the young people with scientific and technological knowledge and skills. The quality of teaching and research in our Universities and scientific institutions must be considerably improved. Government of India is promoting entrepreneurial spirit among its citizens through Start Up India initiative. This scheme provides great opportunity for technology graduates to start new companies. CSIR should take measures to ensure that Ph.D. scholars are properly trained and guided to make use of these opportunities and turn into entrepreneurs. I am glad that many laboratories of this organization are already hosting incubation centres and are promoting this activity.

Sisters and brothers,

Though we are progressing on various fronts, incremental improvements are not enough.

We need to nurture our existing talent and foster creative disruption and path breaking innovations. Scientists and scientific organizations have to set ambitious goals and strategically position themselves to become leading institutions in the world. The government must facilitate this quest for excellence by providing funds, freedom and flexibility.

Science, in my view, has the greatest impact on people's lives and institutions like IICT should focus on research on those areas that will impact large populations. For instance, I would like to mention agriculture and environment in which you have already made significant contribution. India is basically an agriculture economy and it cannot progress unless the farmers' lives are improved. Scientific institutions need to supplement the efforts of the government and I am glad to note that CSIR has launched mission mode projects to improve income of farmers by cultivation of phyto-pharmaceuticals and aromatic plants. I am informed that CSIR is also planning another mission to make available new and improved crop protection chemicals. This kind of focused approach to solve sector wise problems is commendable.

Global warming is affecting our lives with unusual patterns of temperature and rainfall. Pollution is adversely impacting millions of lives directly. Chemical technology institutes like IICT have to take initiative in developing processes that greatly reduce pollution and mitigate global warming. I understand CSIR has already started two mission projects in this area and developing new catalysts and sustainable processes for chemical and pharmaceutical industries. I am also happy to note that CSIR is working on cleaner and eco- friendly fire crackers to reduce air pollution. I am aware that the core strength of CSIR-IICT lies in organic chemistry and it has continued to excel in this field for over seven decades.

The research efforts during these years have resulted in the development of several

innovative processes for a variety of products necessary for human welfare such as drugs, agrochemicals, food, organic intermediates, adhesives etc. I am pleased that today CSIR-IICT is widely acknowledged as a valued technology partner and a competent solution provider to the industry in Pharma & generics, agrochemicals & green pesticides, food & nutrition, energy & environment, polymers & functional materials, industrial catalysts & fine chemical sectors.

I find it very apt, therefore, that the Institute is organizing an International Conference titled “Sustainable Chemistry for Health, Environment and Materials” (SuCHEM-2018) during 6th to 8th August to commemorate the beginning of Platinum Jubilee year. I have visited CSIR-IICT on quite a few occasions in the past and I still cherish the interactions that I had with the scientific fraternity. I strongly believe that the Institute will emerge as one of the best globally acknowledged research institute in its field.

I congratulate Dr. S Chandrasekhar, the Director, Staff and Students of CSIR-IICT, on the occasion of the foundation day as well as a day when the Institute is entering its Platinum Jubilee Year. The curtain raising function on this occasion should be the beginning of a new glorious chapter in the annals of this illustrious institution.

As the ancient Indian sages have said in Ishavasya Upanishad, “Let us unravel truths hidden in a golden bowl for the greater good of humanity and for illuminating our paths with righteousness.” Let the scientific truths you discover make our country and our world a better place to live in.

Published in:
[India Education Diary](#)

CSIR-CDRI

3rd August, 2018

CTDDR-2019 from February 20 to 23

PIONEER NEWS SERVICE ■ LUCKNOW

The 7th international symposium on Current Trends in Drug Discovery Research 'CTDDR-2019' will be organised at CSIR-CDRI from February 20 to 23 next year. Several experts and scientists from Australia to USA will also be participating in the symposium. A senior scientist of CDRI said that 'CTDDR-2019' would address cutting-edge advances in drug discovery and development for infectious diseases (malaria, leishmania and microbial infections), lifestyle disorders (CNS & CVS-metabolic disorders), cancer and bone health. There will be separate sessions for medicinal chemistry and natural products for therapeutics. "The four-day event will include plenary and invited lectures, flash talks and posters by a number of international, national scientists featuring investigational biology, clinical

aspects, and translational biomedical research. 'CTDDR-2019' will address cutting-edge advances in drug discovery and development," he said.

He added that 'CTDDR-2019' would provide a common platform for assessment of the challenges associated with drug design and development in areas such as "From concept to point-of-care", 'Malaria target discovery and drug design', 'Problems of Leishmania therapeutics and new approaches', 'Countering multi-drug resistance in bacterial infections including tuberculosis', 'Natural product chemistry for new leads', 'Synthetic medicinal chemistry for drug discovery', 'Biosimilars, biobetters and drug delivery systems', 'Bone biology and skeletal targets', 'Interventions for CNS disorders', 'Cancer biology and overcoming resistance', and 'Translational research on the cardiovascular-metabolic axis'.

<https://www.pioneernewsservice.com/photo-editions/lucknow>

Published in:

The Pioneer

CSIR-CDRI

3rd August, 2018

जुटेंगे दुनियाभर के वैज्ञानिक

लखनऊ। दवाओं के क्षेत्र में आधुनिक शोध और जरूरतों पर जानकारी साझा करने के लिए पूरी दुनिया के वैज्ञानिक 20 से 23 फरवरी तक सीटीडीडीआर-2019 के लिए लखनऊ में जुटेंगे। ये वैज्ञानिक सेमिनार में भाग लेने आ रहे हैं। सीडीआई के प्रवक्ता डॉ. संजीव यादव ने बताया कि यह सेमिनार सीडीआई के जानकीपुरम विस्तार स्थित कैंपस में रहेगा। इसमें शामिल होने के लिए यूएसए, ऑस्ट्रेलिया से विशेषज्ञों की सहमति मिल चुकी है।



Published in:

Amar Ujala, Page no. 4

CSIR-IIP

1st August, 2018

Skill Development Training Prog held at IIP

By OUR STAFF
REPORTER

DEHRADUN, 31 Jul: A six week Skill Development Training Programme on 'Analytical Chemistry - Tools and Techniques' was inaugurated on Monday at the CSIR-Indian Institute of Petroleum, here.

IIP has taken initiatives under the CSIR-Integrated Skill Development Training Programmes to provide various training courses during the year to participants for better job opportunities in relevant industries.

A total of 10 participants from Uttarakhand are taking part in the current training programme, which is sponsored by Uttarakhand State Council for Science & Technology (UCOST). The participants will acquire a



broad working knowledge of various analytical testing/evaluation techniques.

Amar K Jain, Acting Director, said that the Analytical Sciences Division of the Institute was equipped with world class analytical facilities, beside experienced manpower with extensive knowledge base. He welcomed the participants

and emphasised that the participants need to learn, satisfy their queries in a disciplined manner and should make best out of the opportunity they get.

Dr Anil Kumar Jain gave brief on training activities of the Institute and IIP's capability in providing quality training to various corporates and

participants from abroad as well.

CD Sharma explained the current programme details with emphasis on Skill Development initiatives taken by the institute and thanked Dr Anjan Ray, Director, IIP, for conducting these courses.

Dr Sanat Kumar, Dr Babita Behra, co-ordinator of the

current programme and other Scientists of CSIR-IIP were also present.

He also mentioned that the programme was second in the series under UCOST sponsorship. The first programme on 'Downstream Processing for Enzymes & Proteins' had been flagged off on 23 July.

Published in:
Sunday Times

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