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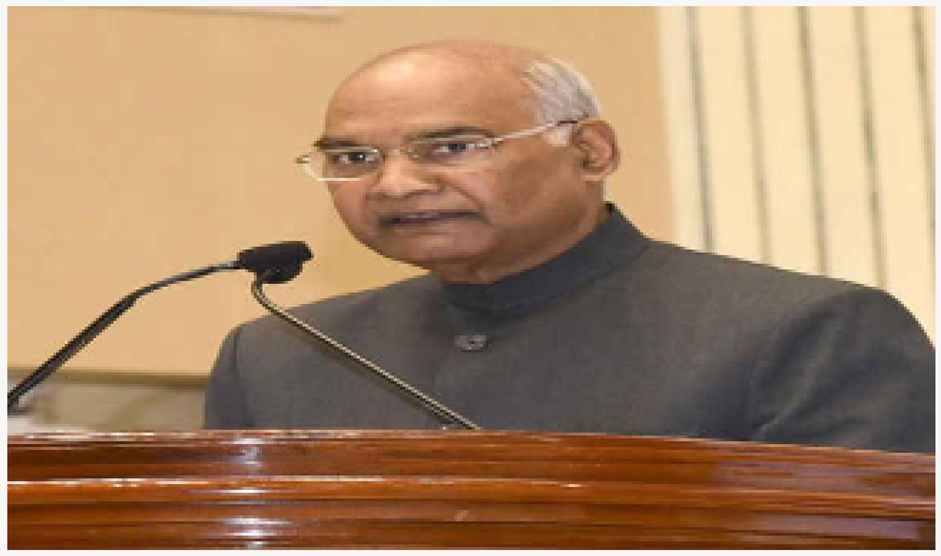
CSIR-CIMFR

20th February, 2019

Energy, environment major concerns for developing & developed countries: Prez



New Delhi, Feb 20 (UNI) President Ram Nath Kovind on Wednesday said energy and environment are major concerns for both developing and developed countries.

Speaking after inaugurating the International Conference and Exhibition on Energy and Environment: Challenges and Opportunities (ENCO 2019) here, Mr Kovind said, 'In today's era of rapid technological advance, energy and environment are major concerns not only for developing countries but also for developed countries.'

He said global trends show that coal will remain the predominant energy source for most countries, including India, while renewable sources will also grow.

'In this connection, I would like to draw your attention towards India's commitments in the Paris Agreement, which came into force on October 4, 2016, to protect our planet from global warming and climate change,' Mr Kovind said.

He said that at the Paris Climate Conference, India made a number of commitments expressing 'our strong desire to control carbon emissions through Nationally Determined Contribution targets'.

The President said the commitments includes lowering the emissions intensity of GDP by 33 to 35 per cent by 2030, below the 2005 levels, increasing the share of non-fossil based power generation capacity to 40 per cent of installed electric power capacity by 2030 (equivalent to 26 to 30 per cent of generation in 2030), and creating an additional (cumulative) carbon sink through additional forest and tree cover by 2030.

'Given this backdrop, I would advise this august gathering to deliberate on development of eco-friendly technologies for green mining. It is important for producers and consumers of conventional energy to evolve more efficient and cleaner processes to ensure environment-friendly use of natural resources,' he said.

The President said India is committed to provide power to all citizens at an affordable cost as well as boost the national economy through an industrial revolution in tune with Industry 4.0 .

He urged participants of the Conference to come up with actionable ideas on environmental issues related to use of fossil fuels and viable alternatives.

The President said this conference will be covering important topics such as--conventional energy technologies; renewable and non-conventional energy systems; energy storage and devices; sustainable mining technologies; and environmental issues.

This Conference is being organised by the Council of Scientific and Industrial Research.

In his inaugural address, the President said CSIR is known for its cutting edge R and D in diverse areas and is a globally benchmarked organisation.

He said CSIR covers a wide spectrum of science and technology –from physics, oceanography and earth sciences to genomics and biotechnology, and from nano technology to mining, materials and

environmental engineering.

CSIR-Central Institute of Mining and Fuel Research, Dhanbad, is internationally

acclaimed because of its rich contributions in coal-based, energy-oriented research

and for developing safe, productive and sustainable mining methods.

Union Minister for Science and Technology, Earth Sciences and Environment, Forest and Climate Change Harsh Vardhan, who was the Guest of Honour, said globally solar energy is the leading driver in renewable energy.

Dr Vardhan said the government has given a tremendous boost to renewable energy. The country has mounted the world's largest and most innovative affordable energy efficient lighting programme, 330 million LED lights which have resulted in reduction of 32 million tonnes Co2 annually.

Dr. Pradeep Kumar Singh Director, CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR), Dhanbad spoke on a range of issues and gave the inaugural address in which expressed gratitude for the presence of President of India among all the delegates.

While laying stress on changing the mode of transportation he said, "Price range of oil will be same as US but we have to change the mode of transportation."

A coal ball and a shawl was also presented to the President in honour.

UNI NY-JAL AR 1611

Published in:
United News of India

Assam: CSIR-North East Institute of Science and Technology gets new director

CSIR-NEIST

19th February, 2019

G Narahari Sastry, former chief scientist of the CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad has taken over charge as the Director of CSIR-North East Institute of Science & Technology (CSIR-NEIST), Jorhat in Assam from Samit Chattopadhyay, former Director (in charge) of CSIR-NEIST, on Tuesday. This was informed in a press communique . Sastry is a professor of AcSIR in Chemistry and Lifesciences disciplines. Sastry's research interests are theroetical and computational chemistry, computational biology, computer aided molecular design and Chemoinformatics. He has made fundamental contributions in the area of non-covalent interactions and developed several important concepts in this area. His group is interested to apply the data science approaches, and also developing an indigenous software, Molecular Property Diagnostic Suite. Several of his computational predictions have seen experimental realizations. Besides publishing independently, the group also has active collaboration with several experimentalists and strongly believe that 'theory-experiment interplay is indispensable' for the progress of science. Dr Sastry is a J C Bose National Fellow (2015). He was awarded with Shanti Swarup Bhatnagar Prize in Chemical Sciences in 2011, considered as one of the highest prize for science and engineering in India. Dr Sastry also received National Bioscience award (DBT) in 2009, one of the highest for Lifesciences in India, Swarnajayanthi Fellowship 2005 (DST), B M Birla award for 2001, B C Deb memorial award (2009), CRSI Medal 2011, and AvH fellowship.

He has delivered more than 300 invited lectures which include talks in national and international conferences. He was a visiting professor at IMS, Japan; LMU, Munich, Germany; Jackson State University, USA, and Kyushu Univesity, Japan. He was elected as a Fellow of National Academy of Sciences (FNASc), Fellow of the Indian Academy of Sciences (FASc), Fellow of Association of Biotechnology and Pharmacy, Telangana State Academy of Sciences (Founder Fellow) and Andhra Pradesh Academy of Sciences (FAPAS). He is a regular reviewer to some prestigious journals and also in the editorial board of some journals.

It may be worthwhile to mention here that Dr Sastry has joined the Institute as the 11th director of the Institute after Dr Samit Chattopadhyay who was holding additional charge of the post of Director, CSIR-NEIST apart from being the Director of CSIR-IICB, Kolkata.

Published in:
NorthEast Now

Coastal Road Project: BMC-appointed bodies to study impact on biodiversity

CSIR-NIO 19th February, 2019

Mumbai: The BMC has appointed the Council of Scientific and Industrial Research-National Institute of Oceanography (CSIR-NIO) to develop a marine biodiversity conservation plan for the Coastal Road project. The NIO will also study the impact of the project on sea and groundwater levels and tidal patterns. The proposal will be introduced at the standing committee meeting on Wednesday.

The allocation for the conservation plan is Rs55 lakh, while the project to study the impact of the Coastal Road on sea and groundwater levels and tidal patterns will receive over Rs7 crore. Among the various recommendations of the ministry of environment, forest and climate change (MoEF) to the BMC in 2017, was to ensure that the Coastal Road project would have no adverse impact on the tidal behaviour and the development of a marine biodiversity conservation plan for the region.

We are implementing the recommendations of the MoEF. Accordingly, we have assigned the contract to the CSIR-NIO and the project awaits the clearance of the BMC standing committee," said a civic official. After clearance of the standing committee on Wednesday, the survey report of the NIO would be submitted to the MoEF every six months, assured the civic official.

Published in:
Free Press Journal

Students of Central University get exposures of research activities at NML

CSIR-NML 17th February, 2019

A group of 19 students of MSc (environmental science) from Central University Jharkhand, Ranchi visited CSIR-National Metallurgical Laboratory, Jamshedpur and interacted with scientists and research scholars as part of the Gigyasa programme. The basic aim of the programme is to acquaint students with research environment.

P N Mishra, principal scientist, briefed about the programme. Further they talked about R&D work carry out in the area of Waste Management & Utilisation. Dr. S.K. Mandal, chief scientist & head KRIT discussed an overview of NML. Soni Jha explained the role and activities of Analytical Chemistry Centre. The students were very much eager to know about different instrument and asked its role for the application in the gainful utilization of natural resources through chemical analysis.

Ashok Kumar Mohanty, senior scientist explained the product developed by NML for the protection of metals made up of brass, copper and silver and different alloys. He also explained the reason for the discolour of metals after long exposure in the environment. Pallavi Singh Antika expressed that, she has first time got practical knowledge involved in the extraction of metals. Manisha Pragya also pointed out the similar view and observed the advancement of science and technology in India.

Priya Kumari, expressed that she has gain first-hand knowledge about CSIR & NML and their role for development of country. Tina Mondal was impressed to know about extraction of valuable metals through waste and got an opportunity to observed close view of applied science and technology. Ms. Shraddha Sharma has also expressed the similar view and get motivated to know about the application of fly ash for making useful products.

Students were surprised to have glance on the 69 years' history of NML at museum and they asked different question based on sample and poster pertaining to minerals based product and facilities.

During the interactive session, number of students asked different questions on minerals, ores, origin of coal, the evolutionary history behind the formation of metal etc. Teachers and students requested for their next visit to the laboratory to gain more knowledge.

Published in:
The Pioneer

NIIST's photoluminescent ink shows good photostability

CSIR-NIIST

16th February, 2019

The ink retains over 70% photoluminescence intensity at the end of one month

Using a novel approach, researchers at the National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Thiruvananthapuram have formulated a fast-drying fluorescent ink that retains over 70% photoluminescence intensity even at the end of one month. There was 26% drop in emission intensity within one hour of printing using the ink containing the fluorescent dye and further drop of 2% in two hours. But no reduction in emission intensity was seen after three hours.

This has become possible with the team led by Dr. K.P. Surendran from the Materials Science and Technology Division at NIIST encapsulating the fluorescent dye — fluorescein — within double-layered silica nanospheres. Since encasing the dye using a single layer of silica did not completely prevent dye leakage, the researchers used a second layer for encapsulation. The silica nanospheres are 70-80 nanometres in size.

As a result of the double-layered encapsulation, fluorescent dye is largely protected from dispersants, solvents and binders present in the ink. So there is less likelihood of reduction in photoluminescence intensity through dye leakage. Encapsulation of the dye in double-layered silica nanoparticles also prevents cluster formation. The dye used without any encapsulation lacks photostability and the fluorescence completely decays within a couple of hours. The **results were published** in the journal *ACS Omega*.

Fuorescent ink is used for a wide range of applications in domains such as

anticounterfeiting, information storage, bioimaging, smart packaging, and nanoelectronics. Retention of photoluminescence for prolonged periods is a major challenge in fluorescent inks. “Since the fluorescent dye should not come in contact with the solvent present in the ink as this would cause decay in photoluminescence, we encapsulated it in double-layered silica nanoparticles,” says Kanakangi S. Nair from NIIST and first author of the paper. “The fluorescent double-layered silica nanoparticles assemblies were synthesised through a reverse microemulsion technique.”

When dye encapsulated in double-layered nanoparticles was dispersed in the solvent, it shows strong fluorescence. But when the encapsulated dye was formulated into ink, the emission intensity reduced by 10%. “The fluorescence gets slightly reduced but is not significantly affected by other components present in the ink,” says Dr. Surendran.

Quick drying

Another advantage that the team observed is the quick drying of the ink at room temperature. “It dried in less than 20 seconds at room temperature. The formulation of the ink was meticulously designed so as to allow quick drying without using any external drying agents,” Dr. Surendran notes. However, most commercial fluorescent inks are cured using ultraviolet lamps or infrared emitters, or a combination of both.

The dried ink containing the dye is cream in colour under visible light but turns green when exposed to ultraviolet light. When the UV light is cut, the dye immediately regains its original colour (cream).

The team used commercially available dye and is now working to encapsulate NIIST propriety dyes using the same procedure. The propriety dyes have multiple emissions and so will help in increasing the security feature of the ink.

Published in:
The Hindu

CSIR-CBRI

14th February, 2019

बच्चों को बताएंगे कैसे बनें वैज्ञानिक

जिज्ञासा कार्यक्रम के तहत जानकारी जुटाकर बच्चों को भारतीय वैज्ञानिकों पर देना होगा भाषण

जागरण संवाददाता, रुड़की : केंद्रीय भवन अनुसंधान संस्थान (सीबीआरआइ) रुड़की के वैज्ञानिक विद्यार्थियों का मार्गदर्शन कर उन्हें बताएंगे कि कैसे वैज्ञानिक बना जा सकता है। साथ ही भारतीय वैज्ञानिकों पर आधारित कार्यक्रमों का भी संस्थान में आयोजन किया जाएगा। जिससे बच्चे उनके बारे में अधिक जानकारी जुटा सकें।

सीबीआरआइ रुड़की में जिज्ञासा कार्यक्रम के तहत शहर के विभिन्न स्कूलों के बच्चों में विज्ञान के प्रति रुचि उत्पन्न करने और वैज्ञानिक दृष्टिकोण को अपनाने को प्रेरित करने के लिए समय-समय पर कार्यक्रमों का आयोजन किया जाता है। इसके तहत जहां बच्चों के लिए संस्थान के वैज्ञानिकों के व्याख्यान आयोजित किए जाते हैं। वहीं उन्हें संस्थान की प्रयोगशालाओं में भ्रमण करने और यहां पर प्रोजेक्ट करने का मौका भी दिया जाता है। अब इस दिशा में एक ओर कदम बढ़ाते हुए जिज्ञासा कार्यक्रम के तहत

सीबीआरआइ रुड़की।

संस्थान के वैज्ञानिक बच्चों को वैज्ञानिक बनने को लेकर उनका मार्गदर्शन करेंगे। वहीं बच्चे अपने स्तर से भी भारतीय वैज्ञानिकों के बारे में जानकारी जुटाकर उनकी सफलता एवं असफलताओं के बारे में जान सकें, इसको लेकर संस्थान में भारतीय वैज्ञानिकों का विज्ञान में योगदान नाम से कार्यक्रम का आयोजन किया जाएगा। इसमें शहर के 15 स्कूलों के छात्र-छात्राएं प्रतिभाग करेंगे। प्रत्येक स्कूल से पांच-पांच बच्चे अलग-अलग भारतीय वैज्ञानिकों पर भाषण देंगे। इसका मकसद बच्चों में विज्ञान के प्रति रुचि पैदान करना है।

साथ ही बच्चों को यह बताना है महत्वपूर्ण खोज करने से पहले देश के वैज्ञानिकों को कितना संघर्ष करना पड़ा है और कितनी असफलताओं का सामना उन्होंने किया है। जिससे बच्चे भी असफलताओं से नहीं घबराएं और असफल होने पर और अधिक मेहनत कर लक्ष्य की ओर आगे बढ़े। सीबीआरआइ के वरिष्ठ प्रधान वैज्ञानिक एवं जिज्ञासा कार्यक्रम के समन्वयक डॉ. अतुल कुमार अग्रवाल ने बताया कि वैज्ञानिक कैसे बनें, इसको लेकर बच्चों का मार्गदर्शन किया जाएगा। वहीं कुछ वैज्ञानिक महत्वपूर्ण खोज करने से पहले कई बार असफल भी हुए हैं लेकिन उन्होंने खोज करना नहीं छोड़ा।

ऐसे में बच्चे भी इनसे प्रेरणा ले सकें और विज्ञान के प्रति उनमें रुचि पैदा हो। इस उद्देश्य से जिज्ञासा कार्यक्रम के तहत बच्चों के लिए कई प्रकार के कार्यक्रमों का आयोजन किया जा रहा है। इसी कड़ी में संस्थान के निदेशक डॉ. एन गोपालकृष्णन के निर्देशन में बच्चों के लिए भारतीय वैज्ञानिकों का विज्ञान में योगदान विषय पर कार्यक्रम आयोजित किया जाएगा।

Published in:
Dainik Jagran

CSIR-CBRI

13th February, 2019

प्रधानमंत्री का सपना पूरा करें

सीबीआरआइ रुड़की परिसर में 72वां स्थापना दिवस समारोह का आयोजन

जागरण संवाददाता, रुड़की : केंद्र सरकार के शहरी कार्य मंत्रालय के सचिव दुर्गा शंकर मिश्रा ने कहा कि हमें 2022 तक एक विकसित भारत का निर्माण करना है। जहां गरीबी, गंदगी, भेदभाव और भुखमरी आदि का कोई स्थान नहीं हो। ऐसा देश जो सकल घरेलू उत्पाद और अर्थव्यवस्था के मामले में शीर्ष पांच वैश्विक देशों में शामिल हो। जहां सभी लोगों को समान अधिकार एवं अवसर उपलब्ध हों और सभी के पास एक ऐसा आवास हो जिसमें पर्याप्त सुविधाएं उपलब्ध हों। सीबीआरआइ प्रधानमंत्री के इस सपने को पूरा करने में महत्वपूर्ण भूमिका निभा सकता है। ये बातें उन्होंने मंगलवार को केंद्रीय भवन अनुसंधान संस्थान (सीबीआरआइ) रुड़की में आयोजित 72वें स्थापना दिवस समारोह में बतौर मुख्य अतिथि कही।

उन्होंने कहा कि बढ़ती शहरी जनसंख्या एक मुख्य चुनौती है। अधिकतम ग्रामवासी जो रोजगार के अच्छे अवसरों की तलाश में शहर की ओर पलायन करते हैं वे अधिकतर अनधिकृत व अपर्याप्त आवासों का निर्माण करते हैं। जिनमें कोई सुविधा नहीं होती है। ऐसे में इसी जनसंख्या के लिए उचित एवं किफायती आवास प्रदान करना सीबीआरआइ की लक्षित चुनौती होनी चाहिए। कहा कि संस्थान को देश की 800 मिलियन गरीब जनता को किफायती आवास प्रदान करने के लक्ष्य को तीव्रतम गति से कार्य करते हुए प्राप्त करना है। उन्होंने सीबीआरआइ को विभिन्न क्षेत्रों और पर्यावरण के अनुसार और प्राकृतिक आपदा क्षेत्रों के अनुकूल आवासों के निर्माण पर ध्यान देने पर जोर दिया। उन्होंने नीति आयोग की ओर से चयनित 151 आकांक्षात्मक जिलों के उत्थान के लिए किए कार्यों के बारे में जानकारी दी। वहीं कंस्ट्रक्शन टेक्नोलॉजी इंडिया के विषय में बताते हुए कहा कि इस पहल से देश में एक निर्माण पारिस्थितिकी तंत्र का विकास होगा। इसके तहत देश के छह कोनों में छह ओपन लाइन प्रयोगशालाओं का निर्माण किया जाएगा।

कार्यक्रम में भवन निर्माण सामग्री और प्रौद्योगिकी संवर्धन परिषद, आवासन और शहरी कार्य मंत्रालय, भारत सरकार के कार्यकारी निदेशक डॉ. शैलेश कुमार अग्रवाल विशिष्ट अतिथि के रूप में उपस्थित रहे। इस दौरान अतिथियों ने सीबीआरआइ के नवीन कंस्ट्रक्शन डेमोस्ट्रेशन पार्क फॉर मास हाउसिंग का दौरा किया। इसके बाद सचिव ने सीबीआरआइ और आइआइटी रुड़की के वैज्ञानिकों, प्रोफेसरों एवं शोधकर्ताओं के साथ बैठक भी की। वहीं समारोह के दौरान सर्वश्रेष्ठ लेख, सर्वोत्तम प्रौद्योगिकी के विकास और वाद-विवाद प्रतियोगिताओं के विजेताओं को सम्मानित किया गया।

इस मौके पर सीबीआरआइ रुड़की के निदेशक डॉ. एन गोपालकृष्णन, आइआइटी रुड़की के निदेशक डॉ. अजित कुमार चतुर्वेदी, अतिरिक्त जिला मजिस्ट्रेट चंद्रेश यादव, ज्वाइंट मजिस्ट्रेट नितिका खंडेलवाल, जया गोपालकृष्णन, डॉ. अश्विनी मिनोचा, डॉ. सुवीर सिंह, डॉ. अतुल अग्रवाल, अनिल कुमार, अन्य वैज्ञानिक और संस्थान के सेवानिवृत कर्मचारी भी उपस्थित रहे।

सीबीआरआइ के स्थापना दिवस के मौके पर आयोजित समारोह में विचार रखते मुख्य अतिथि।

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Dainik Jagran

CFTRI develops two new traditional food products

CSIR-CFTRI

12th February, 2019

The Mysuru-based CSIR-Central Food Technological Research Institute (CFTRI) has developed two new traditional products that have long shelf-life. "Godhi Huggi", a traditional sweet preparation in North Karnataka, is now available in canned form that lasts for around a year on the store shelves. "Godhi Huggi" is a kheer-like preparation that is prepared from wheat. The product will be shortly available in the market and is produced and marketed by Latti Foods, Dharwad, according to the CFTRI. The second food is the 'prasadam' distributed by the Mysuru-based Avadhootha Datta Peetham. Made from wheat flour, jaggery, ghee, coconut and dry fruits, the 'prasadam' in future will be available packaged in tin-free steel cans and has a minimum shelf-life of three months. "The Avadhoota Datta Peetham, also known as Sri Ganapathi Sachidananda Ashram, Mysuru had approached us for the development of wheat-based prasadam with a long shelf life. We have used hurdle technology to process and pack the prasadam. It has a shelf life of three months under ambient conditions," said H. S. Sathish, Chief Scientist and Head of Food Packaging Technology, CSIR-CFTRI, who led the development. Both the products have been well received and are products of the Institute's Food Packaging Technology Department.

Modern methods

Besides providing the traditional flavour, the products add the modern processing for long storage. Both products do not need refrigeration for storage. "The long storage life assures safety, and also ensures a wider market reach," Mr. Sathish.

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Finding music in chemistry

CSIR-IICT

11th February, 2019

Professor from Jerusalem explains the connection

Can music and chemistry go together? Yes, says Sason Shaik, director of Center for Computational Quantum Chemistry, Institute of Chemistry, Hebrew University, Jerusalem. Prof. Sason, who is interested in literature, art and music, has introduced them to chemistry, especially songs on the elements in the periodic table! He discussed how music has always been associated with chemistry since long, citing the example of Primo Levi, an Italian Jewish chemist, who wrote poems on chemistry, and elements linked to the periodic table! He was delivering a talk on "The periodic table – a universal icon, birth 150 years ago and its popularisation through literature, art and music" at the CSIR-Indian Institute of Chemical Technology, on Monday. Outlining the background behind the periodic table, he said Dmitri Mendeleev was inspired by the discussion in the first international scientific conference held in Karlsruhe, Germany, in 1860, also the first conference on organic chemistry. With facts collected in the meeting, Mendeleev gave his first version of the periodic table in 1869 and left spaces for elements to be filled in later. The current table with 118 elements has undergone changes from the first version, Prof. Sason explained.

Earlier, CSIR-IICT director S. Chandrasekhar said there is a great possibility of losing many elements on the periodic table than finding new ones mainly due to environment abuse.

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