

# CSIR in Media



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**News Bulletin**

**1<sup>st</sup> to 10<sup>th</sup> March 2019**





## Few takers for IHBT technologies

CSIR-IHBT

10<sup>th</sup> March, 2019



Many technologies developed by the Institute of Himalayan Bio-Resource Technology (IHBT), a CSIR centre at Palampur, can transform the economy of farmers of Himachal, but these have not found any takers. Scientists at IHBT developed a kiln for manufacturing charcoal from bamboo. Tests from CSIR centre Jharkhand had proved that the bamboo charcoal produced from IHBT kilns has the same burning energy as charcoal produced from any other wood. The bamboo charcoal making kiln can be set up at a cost of about Rs 1.25 lakh. Scientists said at present, charcoal was being produced in the entire northern region from timber wood.

It is leading to the depletion of green cover as trees are slow growing and cannot be replenished soon. However, once it reaches maturity, bamboo can give perennial supply of wood for producing charcoal. Even the state government has failed to promote these technologies. At present, charcoal rates are hovering at Rs 500 to Rs 700 per quintal. Farmers can put their waste and forestland to use and earn extra from producing bamboo charcoal, the scientists claimed. The IHBT had also developed technologies to develop more profitable byproducts from bamboo charcoal. The charcoal can also be used for producing activated carbon, which is used in pharmaceutical and other industries. It has a ready market and can prove very profitable for farmers who opt for professional bamboo farming, he said. However, sources said the efforts of IHBT or authorities of National Bamboo Mission are not achieving much success in motivating farmers to opt for bamboo farming. IHBT had also developed many byproducts of.



Kangra tea that can enhance their income. The byproducts include ice tea and tea based packed drinks. Neither the government, nor any private entrepreneur has come forward to commercially exploit these technologies

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## NPL's device produces high-quality, single-layer graphene

CSIR-NPL

9<sup>th</sup> March, 2019



single-layer graphene, the grains are highly connected to give a single continuous layer of graphene.

### Cost-effective

The LPCVD device developed indigenously costs about Rs.5,00,000, which is one-tenth of the imported ones. More importantly, the quality of the single-layer graphene grown using this device is superior than the ones reported in the literature. By growing single-layer graphene of high quality repeatedly for up to 30 times, the team led by Dr. Bipin Kumar Gupta from the Advanced Materials and Devices Metrology Division at NPL has demonstrated reproducibility. Results of the study were published in *ACS Omega*.

### The quality of the single-layer graphene produced is metrology-grade, and the device is ready for technology transfer

Researchers at Delhi's National Physical Laboratory (CSIR-NPL) have designed a low-pressure chemical vapour deposition (LPCVD) device that allows high quality, single-layer graphene measuring 4 inches in length and 2 inches in width to be grown. The quality of the single-layer graphene is metrology-grade, and can be used in next-generation quantum devices. The thickness of a single layer is 0.34 nanometre and average grain size of graphene is 1-3 micrometre. Though there are about one billion grains in 4x2 square-inch

“It is possible to grow single-layer graphene measuring 6x4 square-inches but the quality will not be as good as when we grow graphene of smaller dimensions,” says Dr. Gupta. This is because when attempts are made to grow larger graphene single layers,



it is difficult to control the diffusion of carbon atoms which get deposited on the copper substrate. This compromises the quality of graphene single layer produced.

“We completed the development of the device and are ready to transfer the technology,” says Dr. Gupta. “Already a few research institutions in India have shown interest.” In fact, single-layer graphene grown by Dr. Gupta’s team has been used for a specific study for quantum hall resistance metrology at Tata Institute of Fundamental Research (TIFR) in Mumbai and the results of the work have been analysed for further communication in scientific journal.

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## Assam: Summit on 'Bio-Economy' held at Kaziranga University

CSIR

8<sup>th</sup> March, 2019



With the aim of driving policy and research with regard to sustainable and inclusive development in the North East region, Kaziranga University organized a three-day National Summit on Sustainable and Inclusive Development, with the theme, “Bio-Economy for Sustainable and Inclusive Development of North-East”, in association with CSIR-NISTADS, one of India’s renowned policy research institutes, on 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> March 2019. The summit, supported extensively by Numaligarh Refinery Limited (NRL), highlighted North East India as a critical area for the confluence of sustainable and inclusive development.

In its second edition, NESIDS 2019 also provided a platform for experts to discuss, deliberate and arrive at a policy roadmap for sustainable and inclusive development of Northeast, with a focus on Bio-Economy. The first edition of this three-day summit (NESIDS 2018) was held at Kaziranga University in April 2018, bringing together intellectual minds from diverse academic as well as non-academic niches from all over India. The sub-themes of NESIDS 2019 this year included Global and Regional Perspectives of Bio-Economy, Biodiversity and Sustainable Bio-Economy and its potential in the North East, Entrepreneurship and Innovation in Bio-Economy, Women Empowerment, Skill Development and Agronomical Practices and Policies in relation to Sustainable Bio-Economy. The inaugural session was held on 6<sup>th</sup> March 2019, in the presence of several distinguished guests and dignitaries. The Chief Guest at the Inauguration was Shri S.K Barua, Managing Director, Numaligarh Refinery Limited, with Guests of Honour



Shri Bhaskar Baruah, Former Secretary, Ministry of Agriculture, Government of India and Dr. G. Narahari Sastry, Director, CSIR-NEIST, Jorhat. The Keynote Address at the inauguration was delivered by Dr. P. Goswami, Former Director, CSIR-NISTADS. The Summit also saw the presence of esteemed dignitaries such as Dr. T. Madhan Mohan, Advisor, Biotechnology Programme Management Cell, Dr. Ram Boojh, National Programme Officer, UNESCO Asia, Prof. Mahendra Lama, Professor JNU, Dr. Anjan Ray, Director, CSIR-IIP Dehradun, Dr. Ashwani Gupta, Scientist G, DSIR, Dr. Anup K. Misra, Director, Assam Science Technology & Environment Council, Dr. Massimo Spadoni, Scientific Attaché, Embassy of Italy in New Delhi, Dr. P.K Mishra, Vice-Chancellor, Kaziranga University, Ms. Rainy Khetan, Director, Kaziranga University, along with several other prominent delegates and participants from all over the country. More than 25 distinguished researchers and speakers from different sectors from across the country attended the summit and presented their research interests and findings, aiming to aid towards forming holistic policies for the development and sustainability of the North East. These premier organizations include Jawaharlal Nehru University, Jamia Milia Islamiya, NEDFi, UNESCO Asia, Balipara Foundation, CSIR-IIP, Assam Agriculture University among several other notable names. In the specific context of North East India, NESIDS 2019 highlighted the importance of inclusive development policies with special attention to bio-economy. The multi-disciplinary deliberations with inputs from dignitaries, researchers and scholars definitely contributed towards the highlighting of a number of novel and significant observations during the course of the three days of the summit, which saw eight thematic sessions. The time to consider a policy on inclusive and sustainable development for the rapidly developing North East region has never been more pronounced, and Kaziranga University, along with CSIR-NISTADS is committed to the creation of tangible efforts to bring immediate and positive changes in the region. Through events such as these, both institutes of learning and research, have significantly enlarged the scope and delivery of higher education in the region, so as to meet the needs of an emerging India.

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# ભાવનગરની સોલ્ટ ઈન્સ્ટીટ્યૂટના ઈન્ચાર્જ મહિલા ડિરેક્ટર પરમિતા રે જેમણે લોકોને શુદ્ધ પાણી મળે તે માટે સમગ્ર જીવન સંશોધનને સમર્પિત કર્યું

પાણીના શુદ્ધિકરણ માટેની નેનો ફિલ્ટ્રેશન અને હોલો ફાઈબર ટેકનોલોજીમાં મહત્વનું પ્રદાન

। ભાવનગર (સંદેશ પ્રતિનિધિ) ।

અશુદ્ધ પાણી પીવાના કારણે ટાઈફોઇડ, કમળો સહિતના અનેક રોગ ઉત્પન્ન થાય છે. પાણીજન્ય રોગોથી લોકો મુક્ત થાય અને શુદ્ધ પાણીથી લોકોના આરોગ્યની જાળવણી થાય તે માટે ટેકનોલોજી વિકસાવવા માટે ભાવનગરની સેન્ટ્રલ સોલ્ટ એન્ડ મરીન કેમિકલ્સ રીસર્ચ ઈન્સ્ટીટ્યૂટ (સી.એસ. એમ.સી.આર.આઈ.) વર્ષોથી કાર્યરત છે. સી.એસ.આઈ.આર.ની આ લેબોરેટરીમાં પીવાના શુદ્ધ પાણી માટે અલ્ટ્રા ફિલ્ટ્રેશન, માઈક્રો ફિલ્ટ્રેશન, નેનો ફિલ્ટ્રેશન, રીવર્સ ઓસ્મોસીસ (આર. ઓ.) અને હોલો ફાઈબર સહિતની સંશોધન ક્ષેત્રે ૭૬ વૈજ્ઞાનિકોની ટીમ તેમનું યોગદાન આપી રહી છે. સોલ્ટ ઈન્સ્ટીટ્યૂટના મેમ્બેઈન સાયન્સ એન્ડ સેપરેશન ટેકનોલોજી ડિવિઝનના એક વૈજ્ઞાનિક એટલે પરમિતા રે.

મૂળ પશ્ચિમ બંગાળના કોલકાતા



ખાતે ઈ.સ. ૧૯૫૯માં જન્મેલા પરમિતા રેએ પોલીમર એન્ડ સાયન્સ એન્જિનીયરીંગમાં બી.ટેક., એમ.ટેક. અને ડોક્ટરેટની ડિગ્રી પ્રાપ્ત કરી છે. ઈ.સ. ૧૯૯૦માં તેઓ ૩૦ વર્ષની વયે ભાવનગરની સેન્ટ્રલ સોલ્ટ ઈન્સ્ટીટ્યૂટમાં જૂનિયર સાઈન્ટીસ્ટ તરીકે પસંદગી પામે છે અને તેઓ કોલકાતાથી ભાવનગર આવે છે. ૨૮ વર્ષની સુદીર્ઘ કારકિર્દી દરમિયાન પાણીના શુદ્ધિકરણ માટેની નેનો ફિલ્ટ્રેશન અને હોલો ફાઈબર

ટેકનોલોજીમાં મહત્વનું યોગદાન આપવા સાથે તેઓ સાઈન્ટીસ્ટ, સિનિયર સાઈન્ટીસ્ટ, પ્રિન્સિપલ સાઈન્ટીસ્ટ, સિનિયર પ્રિન્સિપલ સાઈન્ટીસ્ટ અને ચીફ સાઈન્ટીસ્ટ સુધીના એક પછી એક પડાવ સફળતાપૂર્વક પાર કર્યા છે. હાલ સોલ્ટ ઈન્સ્ટીટ્યૂટના ડિરેક્ટર અમિતાવ દાસ ઓફિશિયલ ટૂર પર હોઈ પરમિતા રે ઈન્સ્ટીટ્યૂટના ઈન્ચાર્જ ડિરેક્ટર તરીકેના સર્વોચ્ચ પદની જવાબદારી વહન કરી રહ્યા છે.

તેમના પતિ રીલાયન્સના સિનિયર જનરલ મેનેજર પદ પરથી નિવૃત્ત થયા બાદ હાલ અમદાવાદમાં અટીરા ખાતે ડેપ્યુટી ડિરેક્ટર તરીકે ફરજ બજાવે છે. તેઓની પુત્રી ડોક્ટર છે. આમ, આ મહિલા વૈજ્ઞાનિકે તેમની પુત્રીનો પણ સુંદર રીતે ઉછેર કર્યો છે અને પીવાના તથા ઉદ્યોગોના પાણીના શુદ્ધિકરણ માટેની ટેકનોલોજી વિકસાવવામાં પણ અહમ યોગદાન આપ્યું છે.

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## SC asks Centre to respond to objections against toxic ingredients in green crackers

CSIR-NEERI



**A writ petition against the toxic effect of firecrackers was filed, stating that the environment and forests ministry should examine the samples of green crackers that contain “conventional formulations” with barium nitrate and potassium nitrate as oxidisers**

The Supreme Court on Tuesday asked the Centre to file a response to objections raised against the use of chemical components like barium nitrate and potassium nitrate in the formulation of ‘green crackers’. A Bench of Justices A.K. Sikri and S. Abdul Nazeer acquiesced with a request made by advocate Gopal Sankaranarayanan, representing three toddlers who filed a writ petition

5<sup>th</sup> March, 2019

against the toxic effect of firecrackers, that the Union Ministry of Environment and Forests should examine the samples of green crackers that contain “conventional formulations” with barium nitrate and potassium nitrate as oxidisers.

Mr. Sankaranarayanan submitted that these two components are among the several toxic ingredients which the Supreme Court had red-flagged. Their usage in the improved/green crackers would be a violation of the Supreme Court orders against the use of noxious firecrackers.

On October 23 last year, the apex court had struck a balance between the interests of the firecracker industry and the right to public health by **allowing licensed traders to manufacture and sell “green” and reduced-emission or “improved” crackers** while banning those that are loud and toxic to man, animal and the environment. The turn of events come even as the minutes of meeting among CSIR-National Environmental Engineering Research Institute (NEERI) and fireworks



manufacturers envisage the bulk production of green crackers to begin by March 30. The minutes informed that a mutual agreement has been reached for manufacturers to submit product approval documents by March 7, 2019. The Petroleum and Explosives Safety Organisation (PESO) could give the product approval for the improved formulation by March 21. Finally, bulk production of the green/improved fireworks could begin by March 30.

The CSIR-NEERI minutes of the meeting dated February 27 details the joint work undertaken so far with fireworks manufacturers for the “formulation and deployment/production of green crackers”. The minutes said trial production of green cracker samples were developed and tested for performance efficiency.

“After joint work in various fire works manufacturing factories situated in and around Sivakasi, and after observation of materials, analysis of the manufacturing process and testing performance efficiency, it appears that improved and green fireworks reduce emission of pollutants PM 2.5 at least by 25 to 30 percent... It will be a win-win situation in the interest of all stakeholders in public interest,” the CSIR-NEERI report said.

It further said that “nearly 200 MoUs have been signed with fireworks manufacturers”. On October 31 last year, the court had, on an application filed by Tamil Nadu, clarified that only green crackers could be manufactured henceforth across the country. This had meant that no new polluting crackers could be made in the cracker factories after the existing stock of them was exhausted.

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## IICT scientist to head CSIR's only north east lab

CSIR-IICT



**‘The institute has made a big difference to the area through its research and by introducing about 100 technologies’**

“It is the only lab of Council of Scientific and Industrial Research (CSIR) in north east at Jorhat in Assam that is involved in multifarious scientific activities. I feel proud to be heading an institute that is soon to celebrate its diamond jubilee,” said G. Narahari Sastry, the newly appointed director of North East Institute of Science and Technology (NEIST). Dr. Sastry, 53, who was with CSIR-Indian Institute of Chemical Technology (IICT) since 2002 heading the Centre for molecular modelling, has just taken over and was here for a

4<sup>th</sup> March, 2019

conference when he told *The Hindu* about his new ‘institute of eminence’ and the direction he intends to take it forward. North East is blessed with abundance of natural resources like varied flora and fauna, minerals, natural gas, petroleum, aromatic and medicinal plants and hence, NEIST is targeted to undertake research in those areas. “The institute has been dealing with chemicals, agro-technology, geotechnical and other studies spread on a sprawling campus of 400 acres. It already has an excellent record and has made a big difference to the area through its research and by introducing about 100 technologies,” he said. Dr. Sastry said emphasis will be on fundamental and translational research of applying basic biology and clinical trials to address critical societal health needs through drug discovery, environment care and sustainable development. With a PG degree in chemistry from Osmania University and Ph.D from University of Hyderabad, he moved to ‘bio-informatics’ during his teaching stint with Puducherry university.



His research is on employing artificial intelligence and machine learning to integrate with bioinformatics in developing disease-specific web portals and delineating disease biology in the area of healthcare.

“Seventy per cent of my research work deals with biology combining computational mathematics and AI. The government’s directive now is while excellence is good, science should be relevant to the people and improve their quality of living,” says Dr. Sastry.

A Shanthi Swarup Bhatnagar Award winner in chemical sciences in 2011, he has been a visiting professor for universities in Japan, Germany and United States.

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## RDCIS, CBRI ink agreement

CSIR-CBRI

3<sup>rd</sup> March, 2019

An agreement on Performance Evolution of Fire Resistance Structural Under fire condition has been signed between Research and Development Centre of Iron and Steel (RDCIS), Steel Authority of India Limited (SAIL), Ranchi and Central Building Research Institute (CBRI), Roorkee. The agreement has been signed by DGM and HoG (Technology Management) RDCIS, SAIL, GD Maheshwari and Director CSIR CBRI, N Gopalakrishnan on February, 27 of this year. DGM and HoG (MT and CE) of RDCIS Vinod Kumar DGM (Quality) of Durgapur Steel Plant, DGM (Quality) of Durgapur Steel Plant L Badu, Head Fire Research Lab Suvir Singh, Head, Planning and Business Development, CSIR-CBRI Roorkee Purnima Parida, were present on the occasion.

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[The Pioneer](#)



## Emissions feared to trigger health crisis

CSIR-NIIST

2<sup>nd</sup> March, 2019



### CSIR-NIIST team studies ambient air and residual ash on plant premises

A team from CSIR-NIIST in Thiruvananthapuram has reported that dioxin emissions from the fire at the Kochi Corporation's Brahmapuram solid waste treatment plant will have an adverse impact on the health of city residents. The team had carried out the sampling of ambient air and residual ash from the premises of the plant after the fire on February 22. The team will submit its report to the relevant authorities and also make it available for the public, according to a release.

### Public concern

K.P. Prathish, who led the team, said the concerns of the public and the scientific community were very valid in view of the possible emissions of highly toxic chemicals like dioxins, furans, and polychlorinated biphenyls (PCBs). The team is now working to quantify the levels of toxic dioxins and dioxin-like PCBs emitted during the fire. The team pointed out that an important source of dioxin emission was the open burning of municipal solid waste (MSW) which is a widely-practised unscientific method of waste disposal in the country. Kerala generates more than 10,000 tonnes of waste every day and faces a crisis in the management of MSWs due to the absence of organised waste collection, transportation, treatment and disposal systems, it said.

With no alternatives in place, citizens are forced to find their own solutions to dispose waste such as by open burning.





It is reported elsewhere that the emission of dioxins and furans is much higher during open burning of wastes in comparison to well-engineered high-temperature waste incinerators, according to the communication.

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## DELHI'S RESERVES OF WATER ARE DRYING UP, COULD BRING 'DAY ZERO' BY 2020: NITI AAYOG

CSIR-NGRI

1<sup>st</sup> March, 2019



Between the lousy quality of air and the scarcity of water in Delhi, its residents have close to no environmental bliss to look forward to, it seems. While there's a tirade of news that sweeps the web every winter on the capital's toxic air quality levels, there's now another severe crisis brewing that the state has to prepare for: an apocalyptic water shortage. The state is losing water from both, its reserves on the surface as well as underground. In recent years, Delhi has lost roughly 3 centimetres of water from these reserves every year, according to a **new report** by the National Institution for Transforming India, also called NITI Aayog.

"Delhi lost more than 1 meter of groundwater in the past 10 years," Virendra Tiwari, director of the Hyderabad-based National Geophysical Research Institute (NGRI) *told Quartz*. This is quicker than any other major Indian city, he added. NGRI — a government research facility — studied how groundwater levels fluctuated over a 15-year period between 2002 and 2017. Curiously, the entire northern region in and around the capital is seeing a similar (but less extreme) dip in groundwater levels.

One of the biggest culprits for this is agriculture. Some practices and kinds of farming — rice cultivation in particular — are very water-intensive. This is the single biggest reason for thinning groundwater levels in the north, according to Tiwari. Another reason for the problem is scant monsoons. Groundwater gets replenished by rainfall. Places like Delhi that are landlocked and don't have access to large bodies of



water are the worst affected when rainfall patterns are disturbed. According to Tiwari, losing groundwater in these areas also messes with soil moisture, air temperature and the risk of heatwaves in dry weather.

The city of Cape Town in South Africa made headlines in early 2018 for launching a **countdown** to the day its citizens would run out of groundwater — the city's "Day Zero". All taps were to be cut off to mark the beginning of a three-year drought, which Cape Town will experience sometime this year, **according to** a *Reuters* report. Niti Aayog believes Delhi could see its own day zero as soon as 2020.

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## NASI celebrates National Science Day, KPS teacher bags Best Science Teacher Award

### Mail News Service

**Jamshedpur, Feb. 28 :** The Jharkhand Chapter of the National Academy of Sciences, India (NASI) jointly with CSIR-National Metallurgical Laboratory, Jamshedpur celebrated the National Science Day on Thursday. Dr D P Duari, director, M P Birla Institute of Fundamental Sciences & M P Birla Planetarium, Kolkata was the chief guest of the function. In addition to NML Scientific and technical staff more than 200 students from Jamshedpur based institutions, like Jamshedpur Women's College, NIT Jamshedpur, ARKA Jain College and The Graduate College participated in the programme. Program was also attended by the principals of RajendraVidyaly and KPS, Mango.

While welcoming the gathering CSIR-NML Director, Dr. I. Chatteraj said, "It is great to have assembled here to pay tribute to one of India's



outstanding Scientist Sir Chandrashekhra Venkataraman whose announcement of the Raman Effect is what we today celebrate as Science Day. Dr. Chatteraj stressed upon the fact the now we should start thinking differently and ensure that scientific temperament prevails in he society. We should learn to "Question the Answers" and should learn to enjoy what we do.

While delivering the welcome address by the Chairman Jharkhand Chapter of NASI,

Dr. Arvind Sinha said, You may be aware that India celebrates Science Day on February 28th every year, to commemorate the announcement of the discovery of the Raman

Effect by Sir C.V. Raman for which he was Awarded the Nobel Prize for Physics in 1930. He has also emphasized that science students to develop the habit of asking the question from self and then try to seek the answer. Dr Sinha requested the science teachers to develop skills of doing science among students. He also congratulated the two winners of Best Science Teacher Award -2019.

The Chief Guest, Dr. D P Duari delivered a popular science lecture on "Concepts and Challenges in Astronomy". In his lecture Dr Duari, an associate of NASA, opened the secrets of universe, very systematically and the rational behind the

cosmological phenomenon. He talked in detail about Mars and Mars mission of India and its significance for human race in large. He has also emphasized the possibility of life on various planets other than earth and correlated it with the presence of sign of water or layers of ice as seen on different planets. He has also excited the students by talking in length about the Sun and the various phenomenon taking place on its surface and its impact on the Earth.

On behalf of Jharkhand state chapter of NASI the chief guest gave away the "Best Science Teacher Award-2019 for Jharkhand State to two teachers namely Dr Tapas Ghosh, DPS Ranchi and MsSushmitaSikdar, KPS, Mango. The selection for Best Science Teacher Award was made based on nomination followed by evaluation of screening committee of NASI-Jharkhand. The award comprises of Rs. 10000/- each and citation.



CSIR-NML

1<sup>st</sup> March, 2019

**सीएसआइआर  
एनएमएल में बनाया गया  
राष्ट्रीय विज्ञान दिवस**

**बिरला प्लैटैरियम के निदेशक सह नासा के एसोसिएट डॉ डीपी दुआरी ने ने कहा  
मार्श पर भी संभव है जीवन**

लाइफ रिपोर्टर @ जमशेदपुर

पृथ्वी के अलावा ब्रह्मांड के दूसरे ग्रहों पर भी जीवन संभव है, नासा की ओर से ली गयी तस्वीर में मार्श पर पानी के साथ ही बर्फ की तस्वीर दिखी है, इसका अर्थ यह है कि मार्श पर भी जीवन संभव है, यह माना जाता है कि जहाँ पानी होगा वहाँ जीवन होगा ही, उन्होंने कहा कि वहाँ जीवन अवश्य रहा होगा, उक्त बातें कोलकाता स्थित एमपी बिरला इंस्टीट्यूट ऑफ फंडामेंटल साइंस एवं एमपी बिरला प्लैटैरियम के निदेशक सह नासा के एसोसिएट डॉ डीपी दुआरी ने गुरुवार को जमशेदपुर स्थित सीआइएसआर-एनएमएल में आयोजित राष्ट्रीय विज्ञान दिवस समारोह के दौरान कही, वे नेशनल एकेडमी ऑफ साइंस इंडिया (नासी) के झारखंड चैप्टर और सीआइएसआर-एनएमएल की ओर से आयोजित समारोह में बतौर मुख्य अतिथि शामिल हुए थे, उन्होंने कहा कि प्लूटो को कॉमन ग्रहों की कैटेगरी से बाहर किया गया है, उन्होंने सभी को खगोलीय गतिविधियों से भी जुड़ी जानकारी दी, कहा कि जब कभी भी ज्वारभाटा पैदा होता है तो एक साथ दो जगहों पर होता है, कहा कि अगर



एनएमएल में आयोजित राष्ट्रीय विज्ञान दिवस के कार्यक्रम का उद्घाटन करते अतिथि और मौजूद विभिन्न स्कूल कॉलेजों की छात्राएं.

फोटो | प्रभात खबर

इस्टर्न इंडिया में कहीं ज्वारभाटा आयेगा तो उसी समय पर मैक्सिको में भी ज्वारभाटा आयेगा, नासा से जुड़े हुए डॉ डीपी दुआरी ने कांसेप्ट्स एंड चैलेंजेज ऑफ एस्ट्रोनामी पर बोलते हुए ब्रह्मांड की कई घटनाओं की जानकारी दी, उन्होंने भारत के मार्स मिशन और मानवीय जीवन पर इसके महत्व को भी समझाया, इससे पूर्व सीआइएसआर-एनएमएल के निदेशक डॉ इंद्रनील चट्टोपायज ने स्वागत भाषण

देते हुए कहा कि आज समाज में एक वैज्ञानिक स्वभाव जगाने के लिए अलग हटकर सोचने की जरूरत है, कार्यक्रम को नासी के चेयरमैन डॉ अरविंद सिन्हा ने भी संबोधित किया, कार्यक्रम में शहर के वीमेंस कॉलेज, एनआइटी, अरका जैन यूनिवर्सिटी, प्रेजुएंट कॉलेज, राजेंद्र विद्यालय समेत विभिन्न शैक्षणिक संस्थानों से करीब 200 विद्यार्थियों ने हिस्सा लिया.



**दो शिक्षक सम्मानित**

समारोह के दौरान विज्ञान के क्षेत्र में उत्कृष्ट शिक्षण कार्य के लिए झारखंड के दो विज्ञान शिक्षकों (डीपीएस, रांची के डॉ. तापस घोष व केपीएस, मानगो के सुष्मिता सिक्कर) को बेस्ट साइंस टीचर अवार्ड से सम्मानित किया गया, इस अवसर पर दोनों को दस-दस हजार रुपये का नगद पुरस्कार व सर्टिफिकेट दिया गया.

**Published in:**  
Prabhat Khabar



# प्राकृतिक तेल की विश्व में बढ़ रही मांग

## सी.एस.आई.आर.- आई.एच.बी.टी. में राष्ट्रीय विज्ञान दिवस का आयोजन

पालमपुर, 28 फरवरी (भृगु): सी.एस.आई.आर. हिमालय जैवसंपदा प्रौद्योगिकी संस्थान पालमपुर में हर वर्ष की भांति 28 फरवरी को राष्ट्रीय विज्ञान दिवस मनाया गया। डा. चंद्रशेखर वैकटरमन द्वारा 28 फरवरी, 1928 को रमन प्रभाव की खोज के लिए उन्हें 1930 में भौतिकी के लिए नोबल पुरस्कार प्रदान किया गया था। डा. रमन की इस खोज को स्मरण करने के लिए प्रत्येक वर्ष 28 फरवरी को राष्ट्रीय विज्ञान दिवस के रूप में मनाया जाता है। संस्थान के निदेशक डा. संजय कुमार ने सभी अतिथियों का स्वागत करते हुए बताया कि हमारा संस्थान सामाजिक, औद्योगिक

और पर्यावरण के क्षेत्र में हिमालय जैवसंपदा के सतत उपयोग के माध्यम से जैव आर्थिकी के विकास के लिए प्रौद्योगिकियों को विकसित करने की दिशा में अग्रसर है। हमारे शोध की स्थानीय प्रासंगिकता तथा वैश्विक प्रभाव होना आवश्यक है। उन्होंने आगे बताया कि संस्थान ने गुणवत्तायुक्त हींग प्राप्त करने के लिए कृषि तकनीक विकसित करनी शुरू कर दी है। इसकी सफलता से न केवल युवाओं को रोजगार मिलेगा, अपितु किसानों की आय में भी वृद्धि होगी। अपने संबोधन में उन्होंने बताया कि प्राकृतिक तेल की विश्व में बहुत अधिक मांग है, जो कि दिन-प्रतिदिन बढ़ती ही जा रही है। इस मांग को पूरा करने के लिए वैज्ञानिक शोध की आवश्यकता है। जैनेटिक इंजीनियरिंग के माध्यम से जीन को पौधों के बीजों व पत्तों आदि में डालकर तेल की मात्रा

को बढ़ाया जा सकता है, जिससे वैश्विक मांग को पूरा किया जा सकता है। उन्होंने कनोला फसल से ओमेगा 3 फेटी एसिड प्राप्त करने तथा सैफ-फ्लावर से विशेष तकनीक द्वारा प्राप्त तेल से गियर ऑयल, लुब्रिकैंट आदि बनाने में सफलता प्राप्त की, जिसका अब व्यावसायिक उत्पादन किया जा रहा है। द यूनिवर्सिटी ऑफ ट्रांस-डिसीप्लिनरी हैल्थ साइंस एंड टेक्नोलॉजी बेंगलुरु के प्रो. गुरमीत सिंह ने बताया कि आज की आवश्यकता है कि हम स्वास्थ्य के क्षेत्र में विभिन्न पद्धतियों को एक साथ लेकर आगे बढ़ें, ताकि अपेक्षित लाभ प्राप्त हो सके। अतः आवश्यकता इस बात की है कि हमारा जो भी परम्परागत औषधीय ज्ञान है, उसका सही तौर पर डॉक्यूमेंटेशन हो। समारोह के मुख्य अतिथि राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर के निदेशक प्रो. (डा.) विनोद यादव ने अपने संबोधन

में बताया कि किसी भी विज्ञान का मूल उद्देश्य मानव की आवश्यकताओं को पूरा करना है। आवश्यकता क्या है, इसके लिए समुदाय के पास जाना ही होगा, उसी के आधार पर शोध करके इसे पूरा किया जा सकता है। उन्होंने आगे बताया कि राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर तथा सी.एस.आई.आर.-आई.एच.बी.टी. मिलकर कार्य करेंगे तथा संस्थान की शोध संबंधी आवश्यकताओं को पूरा करने के लिए परस्पर शोध सहयोग किया जाएगा। इस अवसर पर संस्थान के शोध छात्रों द्वारा आयोजित सैमीनार सीरिज के समन्वयकों को सम्मानित किया गया। संस्थान के नए लोगो का अनावरण भी किया गया। इस अवसर पर चिन्मय तपोवन ट्रस्ट की निदेशक डा. क्षमा मैत्रे के साथ-साथ पालमपुर के गण्यमान्य व्यक्तियों ने भी समारोह की शोभा बढ़ाई।



CSIR-CDRI

1<sup>st</sup> March, 2019

# सीडीआरआई के वैज्ञानिक डॉ. प्रभात रंजन मिश्रा सम्मानित

लखनऊ | निज संवाददाता

सीडीआरआई के प्रधान वैज्ञानिक डॉ. प्रभात रंजन मिश्रा को उत्कृष्ट अनुसंधान कार्यो के लिए प्रतिष्ठित टाटा इनोवेशन फेलोशिप 2018-19 से सम्मानित किया गया है। यह पुरस्कार कैंसर, ऑस्टियोपोरोसिस और परजीवी जनित रोगों के निवारण के लिए बढ़ी हुई चिकित्सीय प्रभावकारिता के साथ-साथ नियंत्रित और लक्षित दवा वितरण प्रौद्योगिकियों पर उनके उत्कृष्ट रिसर्च में योगदान के लिए प्रदान किया गया है।

डॉ. मिश्रा का मुख्य फोकस फार्मा उद्योग के लिए सस्ते (कॉस्ट-इफेक्टिव), रोगी-हितैषी (पेशेंट-फ्रेंडली) और साक्ष्य आधारित उत्पादों



सीडीआरआई के प्रधान वैज्ञानिक डॉ. प्रभात रंजन मिश्रा को सम्मानित करते मंत्री डॉ. हर्षवर्धन।

के विकास के लिए रणनीति तैयार करना है। यह प्रतिष्ठित फेलोशिप नवीन वैज्ञानिक ज्ञान और उन्नत प्रौद्योगिकियों के माध्यम से ट्रांसलेशनल रिसर्च (अनुवादक अनुसंधान) करने वाले वैज्ञानिकों को सम्मानित व प्रोत्साहित करने के लिए प्रदान की जाती है।

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CSIR-NAL

## CSIR-NAL banking on Saras



The Secretary Department of Scientific and Industrial Research (DSIR), Shekar C.Mande today visited the CSIR-National Aerospace Laboratories stall at Aero India 2019 and expressed satisfaction at some of the work that is going on to do with Saras aircraft for military and civilian purposes and also on the regional transport aircraft (RTA) which it has been talking about for quite some time.

Saras which was successfully test flown for the second time last

year has been part of the Aero India aerial display. As on date, Saras PT1N has completed the first block of flights and few more flights are expected to take place by March 2019, before the design for improved version of Saras (Mk2) is finalized. The improved version has considerable drag/weight reduction with unique features like high cruise speed, lower fuel consumption, short landing and take-off distance, low cabin noise, operable from high & hot airfield, with

pressurized cabin, operable from semi prepared airfield and low acquisition and maintenance cost.

CSIR-NAL has done a study to configure the aircraft from 14 seats to 19 seats, sufficing all regulatory requirements of a light transport aircraft. Final configurations with variable 17-19 seats with minimal or no change in basic airframe configuration were analysed. With over 70 per cent indigenous content, Saras is expected to be cheaper by 20 to 25 per cent than any imported aircraft in the same category as indigenous systems will be serviced, including spares within the country. NAL said that the aircraft presently available in the international market are of 1970s technology, such as Beechcraft 1900D, Dornier 228, Embraer EMB 110 which have higher fuel consumption, lower speeds, unpressurised cabin and higher operating costs.

### Regional Transport Aircraft

CSIR-NAL has carried out studies regarding RTA and said there was need for about 300 aircraft in India over 20 year demand forecast and over 7,000 RTA class in the global market. The suggested model by the High Power Committee is technology development funding by government and equipping/manufacturing in a joint venture or special purpose vehicle mode. The programme is proposed in three phases – project definition, full scale engineering and design phase and establishing production facility to achieve production rate of 36 aircraft per year by private sector. Presently, CSIR-NAL is contemplating on Phae 1. A concept note for initiating Phase 1 and creating SPV with participation from CSIR-NAL, HAL & DRDO-ADA has been submitted to the Ministry of Civil Aviation.



CSIR-NAL

## ಏರೋ ಇಂಡಿಯಾ ಪ್ರದರ್ಶನ: ಖಾಸಗಿಯವರೊಂದಿಗೆ ಪುಟ್ಟ ವಿಮಾನಗಳ ಅಭಿವೃದ್ಧಿಗೆ ಎನ್‌ಐಎಲ್‌ಐ ಯೋಜನೆ

ಸಣ್ಣ ನಗರಗಳ ಸಂಪರ್ಕಕ್ಕೆ 70 ಸೀಟರ್ ವಿಮಾನ



'ಸರಸ್' ವಿಮಾನ ಅಭಿವೃದ್ಧಿಪಡಿಸಿದ ತಂಡ ಮತ್ತು ಪುಟ್ಟಗಳ ಇತರಲ್ಲಿ, ವಿಜ್ಞಾನಿ ರೋದ್ಡಂ ನರಸಿಂಹ, ಸಿಎಸ್‌ಐಆರ್‌ಐ ಮಹಾ ನಿರ್ದೇಶಕ ಡಾ. ಶೇಖರ್ ಸಿ. ಮಂಡೆ ಮತ್ತು ಎನ್‌ಐಎಲ್‌ಐ ನಿರ್ದೇಶಕ ಜಿತೇಂದ್ರ ಜಿ. ಜಾಧವ್ ಇದ್ದರು.

ಪ್ರಜಾವಾಣಿ ವಾರ್ತೆ 22.02.2019

ಬೆಂಗಳೂರು: ದೇಶದ ಸಣ್ಣ ನಗರ ಮತ್ತು ಪಟ್ಟಣಗಳ ಮಧ್ಯೆ ವಿಮಾನ ಯಾನಕ್ಕಾಗಿ ರಾಷ್ಟ್ರೀಯ ವೈಮಾನಿಕ ಪ್ರಯೋಗಾಲಯ (ಎನ್‌ಐಎಲ್‌ಐ) ಮತ್ತು ವೈಜ್ಞಾನಿಕ ಹಾಗೂ ಕೈಗಾರಿಕಾ ಸಂಶೋಧನಾ ಪರಿಷತ್ತು (ಸಿಎಸ್‌ಐಆರ್‌ಐ) ಜಂಟಿಯಾಗಿ 70ರಿಂದ 90 ಆಸನಗಳ ಸಾಮರ್ಥ್ಯದ ಸಣ್ಣ ವಿಮಾನಗಳ ಅಭಿವೃದ್ಧಿಪಡಿಸುವ ಯೋಜನೆ ಕೈಗೆತ್ತಿಕೊಳ್ಳಲಿವೆ.

ಸಾಮಾನ್ಯ ಜನರೂ ಕಡಿಮೆ ವೆಚ್ಚದಲ್ಲಿ ವಿಮಾನಗಳಲ್ಲಿ ಸಂಚರಿಸಿ

ಬೇಕು ಎಂಬ ಉದ್ದೇಶದ 'ಉಡಾವ್ನ್' ಯೋಜನೆಗೆ ಪೂರಕವಾಗಿ 'ಪ್ರಾಯೋಗಿಕ ಸಾರಿಗೆ ವಿಮಾನ' (ಆರ್‌ಟಿಎ) ಯೋಜನೆ

ಕೈಗೆತ್ತಿಕೊಳ್ಳಲಾಗಿದೆ ಎಂದು ಏರೋ ಇಂಡಿಯಾ

ಪ್ರದರ್ಶನದಲ್ಲಿ ಸಿಎಸ್‌ಐಆರ್‌ಐ-ಎನ್‌ಐಎಲ್‌ಐ ನ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕ ಜಿತೇಂದ್ರ ಜಿ. ಜಾಧವ್ ಅವರು 'ಪ್ರಜಾವಾಣಿ'ಗೆ ತಿಳಿಸಿದರು.

'ಈ ಉದ್ದೇಶಕ್ಕೆ ₹ 6,000 ಕೋಟಿ ಅಗತ್ಯವಿದ್ದು, ಕೇಂದ್ರ ಸರ್ಕಾರಕ್ಕೆ

ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸಿದ್ದು, ಹಸಿರು ನಿಶಾನೆಯೂ ಸಿಕ್ಕಿದೆ. ಈ ಪ್ರಯತ್ನದಲ್ಲಿ ಎನ್‌ಐಎಲ್‌ಐ, ಟಾಟಾ ಮತ್ತು ಇತರ ಅಂತರ ರಾಷ್ಟ್ರೀಯ

ಖಾಲುದಾರರ ಸಹಭಾಗಿತ್ವವನ್ನೂ ಪಡೆಯಲಾಗುವುದು. ಎನ್‌ಐಎಲ್‌ಐ ಈ ಯೋಜನೆಯ ನಾಯಕತ್ವ ಹೊಣೆಗಾರಿಕೆ ನಿಭಾಯಿಸಲಿದೆ' ಎಂದು

ಅವರು ಹೇಳಿದರು.

'ಇದಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಒಂದೂವರೆ ವರ್ಷದೊಳಗೆ ಸಂಪೂರ್ಣ ಯೋಜನಾ ಪರದಿಯನ್ನು ಸಿದ್ಧಪಡಿಸಲಾಗುವುದು. ವಿಳು ಪರ್ವಗಳಲ್ಲಿ

ವಿಮಾನ ಅಭಿವೃದ್ಧಿ ಕಾರ್ಯಕ್ಕೆ ಚಾಲನೆ ನೀಡಲಾಗುವುದು. ರಷ್ಯಾ, ಯೂರೋಪ್ ಮುಂತಾದ ಕಡೆಗಳಿಂದ ಅಂತರ ರಾಷ್ಟ್ರೀಯ ಖಾಲುದಾರರು

ಸಿಗುವ ನಿರೀಕ್ಷೆ ಇದೆ' ಎಂದು ಜಾಧವ್ ತಿಳಿಸಿದರು.

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# 'कैंसर के इलाज में नैनो दवाएं सहयोगी'

सीडीआरआई में शुरू हुए चार दिवसीय सातवें अंतरराष्ट्रीय सम्मेलन में बोले डॉ. यू-क्यांग ओह

■ एनबीटी, लखनऊ : 'कैंसर के इलाज के लिए कीमोथेरेपी से ज्यादा नैनो दवाओं का इस्तेमाल कारगर साबित हो सकता है। नेक्स्ट-जनरेशन नैनोमेडिसिन उत्पाद कैंसर के ट्यूमर को टारगेट कर उसका विकास रोक दगी। ये दवाएं कीमोथेरेपी की तरह शरीर के बाकी अंगों को प्रभावित नहीं करेंगी। हल्के रेडिएशन के साथ डॉक्टर इन दवाओं को मरीज को दे कर

**'ड्रग डिस्कवरी रिसर्च में वर्तमान रुझान' विषय पर चर्चा**

उनकी जान बचा सकते हैं।' ये बातें सियोल नैशनल यूनिवर्सिटी के वैज्ञानिक डॉ. यू-क्यांग ओह ने बुधवार को केन्द्रीय औषधि शोध संस्थान(सीडीआरआई) में शुरू हुए चार दिवसीय सातवें अंतरराष्ट्रीय सम्मेलन के दौरान कही। इस दौरान 'ड्रग डिस्कवरी रिसर्च में वर्तमान रुझान' विषय पर चर्चा की गई।

मलेरिया दुनिया की आधी से ज्यादा आबादी को प्रभावित करने वाली बीमारी



वॉशिंगटन यूनिवर्सिटी के प्रफेसर डेनिय ई गोल्डबर्ग ने मलेरिया और उसके रेजिस्टेंस पर बात की।

कार्यक्रम में शामिल हुए वॉशिंगटन यूनिवर्सिटी के प्रफेसर डेनिय ई गोल्डबर्ग ने मलेरिया और उसके रेजिस्टेंस पर बात की। उन्होंने कहा कि मलेरिया दुनिया की आधी से ज्यादा आबादी को प्रभावित करने वाला परजीवी जनित रोग है। इसे रोकने के लिए वैज्ञानिकों को मलेरिया के परजीवी एंजाइम को खत्म करने वाली दवा बनानी होगी। उन्होंने बताया कि परजीवी एंजाइम को खत्म करने से मलेरिया के मरीजों में बढ़ रही दवाओं के प्रति रेजिस्टेंस की समस्या भी खत्म हो जाएगी। कार्यक्रम में बतौर मुख्य अतिथि शामिल हुए कैडिला फार्मास्यूटिकल के डॉ. जेएस यादव ने कहा कि एक दवा के विकास में चार मिलियन का खर्च आता है, लेकिन सीडीआरआई हर साल तकरीबन 10-12 दवा ईजाद करता है। कार्यक्रम के दौरान 'कॉन्सेप्ट टू पॉइंट-ऑफ-केयर' सत्र में क्यूराडेव फार्मा इंडिया के डॉ. अर्जुन सूर्या, पारजा फार्मा, कनाडा के डॉ. अरशद सिद्दीकी और यूएसए कैम्ब्रिज के डॉ. भरत लागू ने अपने विचार साझा किए। कार्यक्रम के दौरान निदेशक तपस कुमार कुंडू ने मेहमानों का स्वागत किया।

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## युवा विज्ञान रत्न से डा. राजेन्द्र सम्मानित

हो सकेगी शुक्राणुओं की प्रजननशीलता की पहचान

लखनऊ (एसएनबी)। केन्द्रीय औषधीय अनुसंधान संस्थान (सीडीआरआई) के वैज्ञानिक डा. राजेन्द्र सिंह को डीएनए मेथिलिकर आधारित मार्करों द्वारा शुक्राणुओं की प्रजननशीलता की पहचान पर उत्कृष्ट कार्य के लिए वर्ष-2018 के हरियाणा युवा विज्ञान रत्न पुरस्कार से सम्मानित किया गया।



इस मार्करों की मदद से बांझ शुक्राणुओं एवं प्रजनन योग्य शुक्राणुओं के बीच विभेदन कर उनको अलग से पहचाना जा सकता है। हरियाणा के राज्यपाल सत्यदेव नारायण आर्य ने उन्हें यह पुरस्कार प्रदान किया है। डा. सिंह व उनकी टीम ने डीएनए मेथिलिकरण के अन्तर को समझाने के लिए तथा बांझ शुक्राणु एवं प्रजनन योग्य शुक्राणुओं के बीच विभेदन करने वाले एपिजीनोम आधारित मार्करों की पहचान के लिए समग्र जीनोम के डीएनए में मिथाइलेशन का विश्लेषण किया।

यह अध्ययन डीएनए मार्करों की पहचान करने में मदद करेगा जो इंफर्टिलिटी क्लिनिक में असिस्टेड रिप्रोडक्शन (सहायक प्रजनन जैसे आईवीएफ, आईसीएसआई आदि) के लिए की जाने वाली शुक्राणु संबंधी जांच में इस्तेमाल किया जा सकता है।

असिस्टेड रिप्रोडक्शन बांझ दंपतियों को वात्सल्य सुख या पितृत्व सुख का एक अच्छा एवं आशाजनक विकल्प प्रदान करता है, परन्तु यह विकल्प अनेक विकास संबंधी तथा आनुवांशिक बीमारियों के जोखिम को भी बढ़ाता है।

आईवीएफ और आईसीएसआई के माध्यम से पैदा होने वाले बच्चों में आनुवांशिक विकार विकसित होने की संभावना दस गुना अधिक होती है, जिसमें बेकविथ-विडमैन सिंड्रोम, एंजेलमैन सिंड्रोम, रेटिनोब्लास्टोमा, ऑटिज्म, बौद्धिक विकार, हृदय संबंधी विकार आदि प्रमुख हैं तथा यह सूची लगातार बढ़ती जा रही है। आईवीएफ प्रक्रियाओं में शुक्राणु व भ्रूण की जांच के लिए शुक्राणुओं के बीच विभेदन करने वाले एपिजीनोम आधारित इन मार्करों की पहचान आनुवांशिक व विकास संबंधी विकारों के जोखिम को कम करने में भी मददगार साबित होगी।

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