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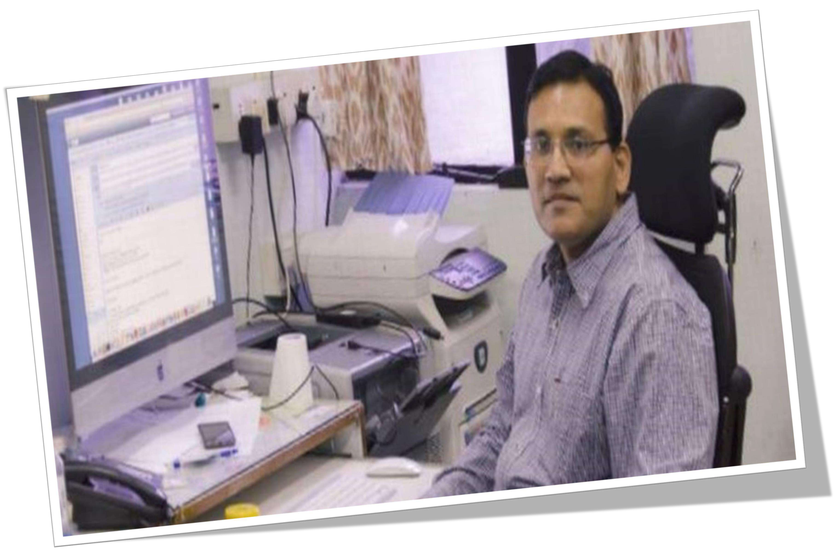
15th to 22th February 2018



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

CSIR-NAL

22nd February, 2018

SARAS completes 2nd test-flight successfully

PNS ■ NEW DELHI

Union Minister for Science & Technology Dr Harsh Vardhan after a press conference on the successful flight of 'SARAS' in Bengaluru PTI

India's indigenous light transport aircraft SARAS on Wednesday successfully test-flew for a second time, the first one it did was on January 24.

The design and development of the aircraft is being done by Council of Scientific and Industrial Research's lab SIR-National Aerospace Laboratories, NAL. According to NAL, the production model design is expected to be ready by June-July this year, said a senior official from the CSIR, a premier research organization under the Union Science and Technology Ministry.

The flight commanded by Wing Commander UP Singh, Group Captain RV Panicker and Group Captain KP Bhat of Indian Air Force- Aircraft and System Testing Establishment (ASTE), took off from HAL's airport in Bengaluru for a text book flight.

Congratulating the CSIR-NAL scientists and the commanders of Indian Air Force - ASTE, Union Science and Technology Minister, Dr Harsh Vardhan, who was present during the second test flight, said, "the flight commanders deserve special appreciation, for their courage to fly an aircraft, which was rejected earlier. Minister announced commendation award for the Commandant and the test crew of ASTE."

The project was gathering dust after an accident during test flight in 2009. However, now attempts are being made to revive it," said the Minister.

"SARAS Mk 2 will be ideal for commuter connectivity under Government of India's UDAAN Scheme for variety of applications like air taxi, aerial search/survey, executive transport, disaster management, border patrol, coast guard, ambulance and other community services," said Dr Vardhan.

Director General of CSIR, Dr Girish Sahni said, the cost of development and certification of SARAS Mk2 will be around ₹600 crores with a time period of about two to three years.

"IAF is committed to test and thereafter induct the first indigenously designed and manufactured Light Transport Aircraft. IAF is fully supporting this programme and the design and configuration of the new version of SARAS would be frozen soon," said Air Vice Marshal Sandeep Singh.

Published in:

The Pioneer, page no. 5

NAL working o Mark 2 version of light transport aircraft: CSIR

CSIR-NAL

22nd February, 2018

India's indigenously developed light transport aircraft Saras was successfully test flown for a second time today, less than a month after the first flight on January 24. The flight commanded by Wing Commander U.P. Singh, Group Captain R.V. Panicker and Group Captain K.P. Bhat of Indian Air Force- Aircraft and System Testing Establishment (ASTE), took off from Hindustan Aeronautic Limited (HAL)'s airport at Bengaluru, according to details released by the Council of Scientific and Industrial Research (CSIR) here. A total of 20 test flights are planned for the aircraft before freezing the production version. The design and development of the aircraft is being done by National Aerospace Laboratories (NAL). The production model design is expected to be ready by June-July this year. NAL has incorporated several design modifications and improvements, after the project was revived. These include provision of a pair of 1200 shaft horsepower engines and a 104-inch diameter propeller assembles to cater to second segment climb gradient requirements, besides improved flight control system, rudder area, main wheel and brakes. Union Minister for Science and Technology Dr Harsh Vardhan said NAL had proposed to get Mark 2 version of the aircraft certified initially for military and subsequently for civilian version. Saras aircraft during its second rest flight in Bangalore He said the aircraft will be 20-25% cheaper than any imported aircraft in the same category. The improved version will be a 19-seater aircraft instead of a 14-seater proposed earlier.

"The unit cost of the aircraft, with more than 70 per cent indigenous content, will be around Rs. 40 crore to Rs.45 crore as against Rs.60 crore to Rs.70 crore for imported ones and has far more benefits than what the imported aircraft offer," he said.

Hindustan Aeronautics Limited (HAL) has been identified as the production agency for the military version of Saras, while the production of civil version will be given to identified private industries. India needs 120-160 aircraft in this genre – both civil and military versions – in the next 10 years.

"Saras Mk 2 will be ideal for commuter connectivity under the UDAAN scheme and other applications like aerial search/survey, executive transport, disaster management and border patrol," the minister added. The Mark 2 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 and hot airfield, with pressurised cabin, operable from semi prepared airfield and low acquisition and maintenance cost.

Director General of CSIR Dr Girish Saini said, the cost of development and certification of Saras Mk2 will be around Rs. 600 crores with a time period of about 2 to 3 years.

"IAF is committed to test and thereafter induct the first indigenously designed and manufactured Light Transport Aircraft. IAF is fully supporting this programme and the design and configuration of the new version of Saras would be frozen soon," said Air Vice Marshal Sandeep Singh.

Published in:
The Hindu

CSIR-NAL

22nd February, 2018

विदेशी विमानों से 15 फीसदी सस्ता होगा सारस, दूसरी उड़ान भी सफल

वायुसेना 15 'सारस' खरीदेगी

घोषणा

नई दिल्ली | विशेष संवाददाता

वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद (सीएसआईआर) द्वारा देश में निर्मित नागरिक विमान सारस ने बुधवार को बेंगलुरु के एचएएल एयरपोर्ट से दूसरी सफल उड़ान भरी।

इस बीच वायुसेना ने 15 सारस विमानों की खरीद पर प्रतिबद्धता जताई है। केंद्रीय विज्ञान एवं प्रौद्योगिकी मंत्री डॉ. हर्षवर्धन ने ऐलान किया है कि केंद्र सरकार की उड़ान योजना के लिए 19 सीटों वाला सारस तैयार किया जाएगा।

डॉ. हर्षवर्धन ने कहा कि 2009 में सारस के परीक्षण के दौरान दुर्घटना होने के बाद यूपीए सरकार ने इस योजना को बंद कर दिया था। लेकिन मेक इन इंडिया को गति देने के लिए मोदी सरकार ने इस परियोजना को न सिर्फ शुरू किया है, बल्कि सारस को नए स्वरूप में उतारा गया है। उन्होंने कहा कि छोटे शहरों को जोड़ने, परिवहन एवं सैन्य बलों को सारस जैसे विमानों की काफी जरूरत है।

एचएएल बनाएगा मिलिट्री सारसः हर्षवर्धन ने कहा कि वायुसेना ने 15 सारस खरीदने की बात कही है। अन्य सेनाएं इसमें दिलचस्पी ले रही है। इसलिए सारस के मिलिट्री संस्करण के उत्पादन का जिम्मा हिन्दुस्तान एयरोनॉटिक्स लिमिटेड को सौंपा जाएगा।

ताकत

20-25 फीसदी सस्ता होगा सारस, दूसरे देशों में बन रहे इसी स्तर के विमानों की तुलना में

40-45 करोड़ रुपये होगी इसकी कीमत जबकि विदेशों से ऐसा विमान खरीदते हैं तो उसका मूल्य 60-70 करोड़ रुपये होता है

बहुउद्देश्यीय है विमान

सीएसआईआर द्वारा निर्मित सारस बहु उद्देश्यीय विमान है। इसका इस्तेमाल नागरिक परिवहन, माल परिवहन, निगरानी, सर्वेक्षण तथा अपदा प्रबंधन कार्य के लिए किया जा सकता है।

सारस में हैं कई खूबियां

सीएसआईआर के अनुसार सारस में कई खूबियां हैं। सबसे पहले तो यह नई पीढ़ी का विमान है। जबकि इस आकार के जो छोटे विमान बाजार में उपलब्ध हैं वे 1970 की तकनीकी पर बने हुए हैं। दूसरे, इसकी रफ्तार ज्यादा है और ईंधन की खपत कम है। यह छोटी हवाई पट्टी से भी उड़ान भर सकता है और लैंडिंग कर सकता है।

160 विमान चाहिए

सीएसआईआर के महानिदेशक डॉ. गिरीश साहनी ने कहा कि देश में नगारिक एवं सैन्य सेवाओं के लिए 120-160 सारस विमानों की खपत का सालाना अनुमान है।

Published in:

Hindustan, Page no. 14

CSIR-NIIST to organize 'R and D Industry Meet' on Feb 23

CSIR-NIIST 22nd February, 2018

Thiruvananthapuram, Feb 21 (UNI) A one-day 'R and D - Industry Meet' will be organised by CSIR-NIIST, a premier Science and technology institute in public sector, here on February 23.

Additional Chief Secretary of Local Self Government Department, T K Jose, will inaugurate the industry meet which will be presided over by CSIR-NIIST Director Dr A Ajayaghosh.

The CSIR-NIIST having a social responsibility to provide R and D support to Indian industries through contract projects and technology transfers, has organised the meet to forge alliances with industries.

On the sidelines of the industry meet, an exhibition of Products/Technologies as well as Knowledgebase/Processes developed by CSIR-NIIST would also be held. About 100 participants from various industries including Micro Small and Medium Enterprises are expected to participate in the one-day meet.

Published in:
United News of India

Here is how nutrition may help overcome genetic risk of diabetes

CSIR-CCMB

21st February, 2018

For years, scientists have been engaged in finding human genes associated with lifestyle diseases like diabetes and heart disease to know if certain population groups are prone to these disorders. Now Indian scientists have found that good nutrition can actually modify the risk of diabetes posed by presence of certain faulty genes. New research has revealed that good nutrition – in the form of B12 and folic acid supplements – has a beneficial impact on genes associated with Type 2 diabetes. The study has been led by scientists at the Hyderabad-based Centre for Cellular and Molecular Biology (CCMB), a laboratory of the Council of Scientific and Industrial Research (CSIR).

Vitamins B12 and folate plays an important role in DNA methylation – a process that regulates various function of genes without altering the sequence. In DNA methylation, basically methyl group is added to DNA which can result in change in its activity. Researchers provided Vitamin B12 and folic acid to a group of children for one year and examined the DNA methylation status by analysing their blood samples. They found that only vitamin B12 and not folic acid influences regulation of several Type 2 Diabetes associated genes through methylation of a specific microRNA. "This assumes significance in the light of our earlier observations that maternal homocysteine levels due to vitamin B12 deficiency are predictive of the future risk of cardio-metabolic risk in their children. Hence, this study provides a novel epigenetic explanation for the association between disordered one-carbon metabolism and risk of adiposity, insulin resistance and diabetes and has translational potential" Giriraj R Chandak, who led the research, told India

Science Wire. To understand the programming of complex diseases in more detail, the group is currently working a group of mothers who were given micronutrients, to see the effect of supplementation in their offspring. This work is being done in collaboration with C S Yajnik at KEM Hospital and Research Centre (KEMHRC), Pune. In order to understand molecular mechanism of programming in more details, similar conditions have been generated in animal models and effects are being analyzed in their cells, tissues and organs.

"Finding of this study will enrich our understanding of the molecular mechanism of fetal programming, cause, and development of complex diseases. These studies will have potential public health significance and help in designing prevention policies," added Chandak.

The research team included Giriraj R Chandak, Dilip Kumar Yadav and Smeeta Shrestha from – CCMB; Hong Pan and Joanna D Holbrook from Singapore Institute for Clinical Sciences; Caroline HD Fall and Karen A Lillycrop from Southampton General Hospital, UK; Charu V Joglekar and C S Yajnik from KEM Health Research Centre, Pune. The study was funded by CSIR, Wellcome Trust and Department of Biotechnology (DBT).

Published in:
Business Line

An indigenous anti-counterfeiting ink

CSIR-NPL

20th February, 2018

A novel process for manufacturing a new type of security ink that can help prevent counterfeiting currency has been developed by the scientists of New Delhi based CSIR-National Physical Laboratory, a unit of the Council of Scientific and Industrial Research (CSIR). This process can not only be adopted on a large scale without much difficulty, but can also yield an ink that can be used on ordinary paper, says a new study that has been published in Chemistry: A European Journal. "The ink has been developed in response to the 'Make in India' call," says Dr Bipin Gupta, the study's lead author.

Security inks are essential and crucial for printing of currency as they help detect any counterfeits. The first thing anyone does to check the authenticity of a currency note is to place it under a UV lamp. Under this light, one could then clearly see some features that are normally not visible to the naked eye. This is due to a special ink that glows only when it is exposed under a UV light. Although such inks are available, they also need a special paper for the UV marker to be effective. In other words, the paper or surface on which the ink is printed should not glow under UV light. Hence, there is a requirement of special paper. The ink developed by Bipin's team, however, eliminates this need for special surfaces. "It is printable on all papers and surfaces," reveals Bipin. Not only that, the ink can also be tested under two types of lights: the normal UV lamp and under infrared (IR) light. Infrared light is emitted by TV remotes and by the lamp used to treat muscle sprain. This dual-mode glowing adds to its secure nature. "

The ink is formulated from a cost effective dual-mode luminescent composite pigment," says Bipin. The security ink has been developed by mixing nanorods of rare-earth elements like gadolinium, ytterbium and erbium oxides with light-emitting solids made of zinc and manganese sulphide in a specific polymer-based ink. Bipin's team has judiciously mixed these two together to get a pigment that can be mixed in with PVC gold, which is commonly used in the manufacture of ordinary inks. The rare earth metal nanorods respond to near infrared laser and the phosphors respond to UV light. The sulphides are called phosphors as they glow when high energy light or electron beams hit them. "The composite pigment can be excited with two wavelengths: ultraviolet light (365 nm, UV lamp) and 980 nm with near-infrared laser. In composite pigment, nanorods emit red light upon excitation with a 980 nm laser and phosphor emits yellow light with a 365 nm UV lamp. We have plans to replace NIR laser with NIR LEDs in future to make cost effective excitation source," elaborates Bipin. The ink designed by Bipin's team shines bright yellow under UV light and intense red when it is shown under infrared light. The composite pigments in the ink are "tunable and more secure," says Bipin. "It means the pigments responding to specific excitation wavelengths and that emit specific wavelengths of light are possible. This makes it extremely difficult to counterfeit," he adds.

In other words, patterns that appear identical on paper or on different currencies may glow differently when exposed to specific frequency of light. Besides making currency secure, these novel inks can also be used in "printing labels of pharmaceuticals or in printing important documents," says Bipin. When the ink hits the market, which may not be too distant, it would be another unique gift from the National Physical Laboratory which gave us that indelible ink to ensure a free franchise.

Published in:
Deccan Hearld

Hemp without the high: Legal side still smoky, but Cannabis startups eye areas from fabric to medicine

CSIR-IIIM

20th February, 2018

In April 2017, when the Central government and the Ministry of Health and Welfare issued the first-ever research licence to grow cannabis to the Council of Scientific and Industrial Research – Indian Institute of Integrative Medicine (CSIR – IIIM) in collaboration with Bombay Hemp Company (BOHECO), it was the start of something unprecedented. Cannabis startup Boheco was banking on the revival of cannabis to improve research, reduce drug abuse and aid cancer patients. Since November 14, 1985, when the Narcotic Drugs and Psychotropic Substances (NDPS) Act came into force in India, the use of cannabis, with the exception of *bhang*, has gone underground. Boheco began in 2013 and has been manufacturing and marketing merchandise fashioned out of hemp fibre and working extensively with government departments to help carve out a space for industrial and medical utilisation of cannabis in India. "There was a perception of blanket ban on this commodity. Nobody wanted to work with it because it is perceived as banned," says Avnish Pandya, co-founder, Boheco. All their work has come in for attention and the startup was recently able to raise Rs 6.25 crore in funding from a group of investors led by Ratan Tata, chairman emeritus of Tata Sons and Rajan Anandan, Managing Director of Google India. The documented use of cannabis in India dates back to the Vedic period. In the Atharva-veda, the 'bhang' plant finds a notable mention as one of nature's five sacred, distress-relieving plants. Consumption of cannabis in colonial India was found to be so extensive that the Indian Hemp Drugs Commission consisting of Indian and British medical experts determined in 1894 that its use was very ancient, had some religious sanction, and was harmless in moderation. Stopping short of recommending a complete ban on its consumption, the panel concluded that it could potentially push consumers towards more dangerous narcotics. Until 1985, cannabis derivatives in India — *bhang*, *charas* and *ganja* — were regulated by the various state excise departments and legally sold by licensed shops.

Abhishek Rastogi, Partner at the law firm Khaitan and Co., explains: "The NDPS Act banned the production and sale of cannabis resin and flowers, but permitted the use of the leaves and seeds, allowing the states to regulate the latter." So, crucially, the Act does not totally shut down the possibility of cannabis cultivation for medical, scientific, horticulture and industrial purposes, provided the state governments issue a licence to that end.

Over the past few years, Boheco has been actively prototyping a number of products for their Hemp textile business and working with regulators at the Food Safety and Standards Authority of India (FSSAI) to formally recognise hemp as a food item in the form of hemp seed, seed oil and protein. While studying the feasibility of Uttarakhand for production, given its long history of hemp, the startup has partnered with the Lucknow-based Council of Scientific & Industrial Research – National Botanical Research Institute (CSIR-NBRI) for its expertise in opium breeding. Research is currently underway towards developing stable, low-THC (Tetrahydrocannabinol — the psychoactive compound responsible for the 'high') varieties of cannabis for medical and industrial purposes. "The fabric produced from hemp is very high quality — it is crisp, skin friendly and highly comfortable. Hemp is also highly suitable as a technical fibre and it can be easily cultivated in hilly areas," says Dr B K Behera, Director of Department of Textile Technology at IIT Delhi, who has been collaborating with Boheco and industrial groups on a research project to develop a processing line for hemp fibre to produce yarn. While leading world producers like China and France have a systematic, mechanised process in place for large scale extraction of hemp fibre, India is currently in the initial phases of developing and customising such a technology that will render high quality, commercial hemp yarn production viable. Boheco has been investing resources in this direction, while also partnering with textile players like Arvind Mills and Vardhman Mills in India and the Netherlands-based Bedrocan to understand the fibre's potential on a large scale. In November 2016, the Uttarakhand government announced plans to hand out licences to farmers allowing them to cultivate cannabis solely for industrial purposes, with the government as the sole buyer. "Everything depends on whether we have the right seed and the right regulation," Pandya says. Theoretically, he thinks that if someone succeeds in developing a 0.3 percent THC variety, they could get a license in

Uttarakhand for commercial cultivation this year. But realistically this would take longer. The hemp-based products sold in the country thus far by companies like the Orissa-based HempCann are generally imported wholly or produced from raw material imported from China. “It has to grow in 1000-2000 acres to be industrially viable in India,” says Pandya. “Though the policy is ready [in Uttarakhand], the standardisation of the seed is still in process,” he explains. There are also medical uses for hemp, especially in relieving pain from cancer. Researchers often refer to the cannabis plant as a treasure chest of useful chemical compounds, other than the infamous THC. The most researched among these today is cannabidiol, commonly referred to as CBD — a non-psychoactive component with identified medical applications. “There is a large unmet medical need in India, in case of pain management of chronic illness like terminal, stage 3 cancer. The pain can be so severe that even morphine doesn’t work,” says Dr. Ram Vishwakarma, Director of CSIR-IIIM, referring to CBD as the most potent pain blocker. It is therefore no surprise that medical cannabis typically gets a favorable opinion from oncologists. The institute had approached the Jammu and Kashmir government for a legal license to cultivate cannabis for medical research and product development. “Once we received the go ahead, Boheco approached with a desire to carry it forward with us. As a research organisation, we cannot handle the marketing aspect — so this is how the two came together in agreement,” says Dr Vishwakarma. “The United States Food and Drug Administration (USFDA) has approved five new cannabis-derived drugs for cancer pain due to this property after Phase 3 trials,” says Dr Vishwakarma, adding, “Another deadly disease is epilepsy in children. A CBD-based drug is the only drug available for that.” In addition to cancer pain and epilepsy, the institute will be focusing research on the medical application of cannabis for the genetic disease, sickle-cell anemia, which causes bouts of severe pain and silently affects a few crore people in India. Cannabis has been recognised for its medical use in 29 out of 51 US States, Canada, Australia and a significant number of another 20-odd countries across the world. In India, however, cannabis-derived drugs are unavailable, illegal and cannot be prescribed by doctors. In case of opium cultivation, once the license has been issued to the farmer, the government acts as the facilitator as well as the sole buyer of the produce.

The produce is then sold to industries for production of opium-derived drugs for medical end-use. The same should be allowed for cannabis, Dr Vishwakarma says. Medical use of the drug in India is a few years away on account of requisite trials and approvals. Significantly, public institutions like All Indian Institute of Medical Sciences (AIIMS), Tata Memorial Center and National Institute of Mental Health and Neurosciences (NIMHANS) have already showed interest in researching the potential of cannabis derived medicines and conducting trials. Despite wild and plentiful availability of cannabis, there are again no standardised varieties for medical research. To kickstart this process, Boheco and CSIR – IIIM have initiated the cultivation of a number of accessions of the plant in the institute's experimental farm in Jammu for biochemical analysis, with the aim of selecting CBD-rich varieties.

"The legality of cannabis use in India has been a subject matter of debate from the British rule to as recent as 2017," says Rastogi. "Our foreign-influenced laws never took into account that cannabis has been used for medicinal and relaxational purposes in India for thousands of years," says Romesh Bhattacharjee, former Narcotics Commissioner of India and an advisor to Boheco. "Theirs (Boheco) is a very good effort and they are doing it within the legal framework. But for them to get it off the ground without running into problems from enforcement authorities, laws around cannabis will have to be liberalised," he adds.

Quoting the recent cannabis legislations in developed countries like the US, Union minister Maneka Gandhi on July 29, 2017 suggested that legalising cannabis for medical purposes could be beneficial in India. Further, Lok Sabha members like BJD's Tathagata Satpathy from Dhenkanal and AAP leader Dr Dharamvira Gandhi from Patiala have publicly voiced support for decriminalising cannabis possession in moderate quantities. The latter introduced a Private Member's Bill in 2017 to amend the NDPS Act, seeking decategorisation of soft intoxicants like cannabis from the segment comprising of artificially produced hard drugs like heroin, cocaine, smack etc., which could be tabled in the Parliament's February session.

Meanwhile, Boheco is expecting another research license to grow cannabis very soon, this time from the state of Uttar Pradesh. They are also planning on launching their FSSAI-approved, hemp-based food products later this year. The Ayurveda-based products maker, Patanjali, too, according to a recent report, has interest in tapping into cannabis. India's cannabis economy may just be on the brink of getting serious.

Published in:
Indian Express

Faraway temblors may set off quakes in Koyna, warns study

CSIR-NGRI 19th February, 2018

PUNE: Distant earthquakes and their aftershocks could trigger tremors in the vulnerable Koyna-Warna region, a recent study conducted by scientists at the CSIR-National Geophysical Research Institute (CSIR-NGRI) in Hyderabad and institutes in the US has found. The study, published in the international journal 'Journal of Geophysical Research(Solid Earth)', said increase in seismic activity after the temblor in the Indian Ocean on April 11, 2012 lasted for up to four days, including a magnitude 4.8 earthquake on April 14, 2012 in the Koyna-Warna region. Human activities, including the construction of the reservoirs, has made the region highly vulnerable—so much so that earthquakes far away could trigger tremors or earthquakes here, the study indicated.

Such earthquakes are known as 'remotely triggered' earthquakes, Abhey Ram Bansal from CSIR-NGRI, Hyderabad, who spearheaded the research, said. "These earthquakes or tremors, which could be as intense as 5.5 magnitude, are caused by the passing of surface waves of large distant earthquakes," he added. Recent research studies have shown that such tremors or earthquakes are most prominent in the regions with earthquakes induced by human activities. Our study found that the magnitude 8.6 Indian Ocean earthquake of April 11, 2012 and its aftershock of magnitude 8.2 were the two events that triggered seismic activity in the Koyna-Warna region. The increase in this activity in the region led to a magnitude 4.8 earthquake here on April 14, 2012," he added. Researchers found that a small stress of the order of 20 kilopascal (kPa)—a unit of pressure measurement—carried by the surface waves of distant earthquakes may be sufficient to trigger earthquakes in the Koyna regions. So, while other, more stable surrounding regions in the way of these waves may feel nothing, a vulnerable region like Koyna may experience seismic activity, they added.

RESERVOIR INDUCED SEISMICITY

Pic: Raju Sanadi

- Brings on earthquakes of magnitude equal to or less than 4
- Only four locations __ Hsinfengkiang, Kariba, Koyna, and Kremasta__ have triggered earthquakes of magnitude equal to or more than 6
- The most significant earthquake of magnitude 6.3 occurred in the Koyna Warna region on December 10, 1967

CONNECT TO DEEP PAST

- The Koyna-Warna region is located in an Archean Craton in western India
- Archaean cratons are the stable remnants of earth's early continental lithosphere
- Their structure, composition and survival over geological time make them unique features
- Strike-slip quakes trigger deep tectonic tremors and a significant increase of earthquakes over magnitude 5.5 around the world
- The 2012 quake did not trigger tremors in East Asia and La Reunion, but it did in the Koyna region

INDIAN OCEAN TEMBLOR

- The 2012 Indian Ocean earthquake was the largest recorded strike-slip quake
- It occurs when the earth crust's blocks move horizontally

IN KOYNA'S CASE

- Earthquakes here started right after the impoundment of the Shivaji Sagar lake in 1962
- In the early stage, earthquakes confined to a smaller region of 20 sq km around the Koyna dam
- Seismicity extended further south due to the filling of the Warna reservoir in 1985

Earthquakes in the region occur at depths of **0-1 km** and **5-10 km**

The team conducted a systematic search for dynamic triggering after 20 large distant earthquakes with dynamic stresses of at least 1 kPa in the region and found triggering during the 2012 Indian Ocean earthquake and its largest aftershock. “Not all earthquakes spark others because triggering depends on many factors. Triggering during a single quake is also important enough to understand the vulnerability of the region and how little stresses from outside can trigger the techtonic events in the region,” Bansal said.

An earthquake in one distant part of the Indian Ocean could trigger tremors or an earthquake in Koyna because the region is critically stressed, adding that the trigger also depends on the rupture direction of the main earthquake, he added. “Koyna region is already stressed due to the reservoir. It is disturbed by other stresses generated by far away earthquakes. Had the stresses caused by the reservoir not been present in Koyna-Warna region, then the far away earthquakes may not trigger seismicity here. This study is significant to suggest that human activities could disturb stress conditions below the earth’s surface, making the regions more sensitive to earthquakes occurring in distant places,” he said.

Published in:
The Times of India

Indoor air pollution 10 times more harmful, say experts

CSIR-NEERI

19th February, 2018

CHENNAI: Indoor air pollution (IAP) is ten times more harmful than outdoor air pollution but more attention is given to the latter, participants from leading technology and research institutions said while discussing indoor air quality management in tropical climatic conditions on Friday. "Toxins remain trapped inside an enclosed room, depending on the ventilation, which make it worse. Factors causing IAP lead to release and accumulation of pollutants like formaldehyde, radon, asbestos, heavy metals, tobacco smoke, and those released by burning of cooking fuel and biomass," said Dr Chitra of Madras Medical College. She said even though LPG causes lower pollution than the burning of biomass it is not safe. "It is slightly better. Also, IAP depends not only on what is being burnt but also the way cooking is done," she added. The summit on air quality management saw the participation of scientists and leading professionals from IIT Madras, State and Central Pollution Control Board, National Environmental Engineering Research Institute and private companies in the technology sector. Issues affecting air quality in urban and rural settings were discussed. "The problem in urban settings is the dearth of open spaces. Another problem is the shortage of green cover which, to a large extent, reduces the toxins in the air," said Dr R Sivacoumar, principal scientist at CSIR-NEERI. He emphasised that while choosing residential spaces, one must ensure that the floor space index (FSI) is not more than 1.5. "If FSI is more than 1.5, it shows a decrease in the open space," he added. Discussing the impact of air quality on the mental and physical health of humans, the panel focused on the design, development and cost of air quality monitoring systems, air quality problems in micro indoor and outdoor environment, and the impact of day-to-day household items in creating poor air quality.

Published in:

Times of India

CSIR-CDRI

17th February, 2018

पालक से बनाई ऑस्टियो ऑर्थराइटिस की दवा

सीएसआईआर के डीजी प्रो. गिरीश साहनी आज करेंगे लॉन्च, निदेशक ने जारी की सालाना रिपोर्ट

अमर उजाला ब्यूरो

लखनऊ।

सेंट्रल ड्रग रिसर्च इंस्टीट्यूट (सीडीआरआई) ने पालक (स्पिनेशिया ओलेरेशिया) से ऑस्टियो आर्थराइटिस की दवा बनाई है। इस दवा का निर्माण गुजरात की एक कंपनी कर रही है। शनिवार को इस दवा को खुद सीएसआईआर के महानिदेशक प्रो. गिरीश साहनी लॉन्च करेंगे।

कार्यवाहक निदेशक डॉ. आलोक धवन ने बताया कि पालक से एक मानकीकृत फार्मूलेशन को विकसित किया गया। ऑस्टियो आर्थराइटिस के उपचार में यह काफी फायदेमंद पाया गया है। सभी ट्रायल के पूरा होने के बाद अब इस दवा को गुजरात की फॉर्मा कंपनी को निर्माण के लिए दिया गया है। यह दवा कार्टिलेज क्षरण से रक्षा करके ऑस्टियो आर्थराइटिस रोधी गुण पैदा करती है। डॉ. धवन ने यह जानकारी शुक्रवार को सीडीआरआई की 67वें वार्षिक दिवस की पूर्व संध्या पर अनुसंधान परिषद को सौंपी सालाना रिपोर्ट में इसकी जानकारी दी।

डॉ. धवन ने बताया कि 2017-18 में हम पहले सीएसआईआर संस्थान बने जिसकी लैबोरेटरी में खुद प्रधानमंत्री नरेंद्र मोदी ने विजिट की। उनकी प्रेरणा से अब हम दो न्यू केमिकल एंटिटी अर्थात एस-007-867 (थ्रांबोटिक रोधी) और एस-007-1500 (फैक्चर हीलिंग) आईएनडी के शोधकार्य को पूरा करने की दिशा में काम कर रहे हैं। इसके अलावा मोटापे से निपटने के लिए देश की एक दिग्गज फॉर्मा कंपनी के साथ अनुबंध शोधकार्य के लिए हुआ है।

वार्षिक समारोह कार्यक्रम आज

सीडीआरआई का वार्षिक समारोह कार्यक्रम जानकीपुरम विस्तार कैंपस में शनिवार को रहेगा। इसमें 43वां सर मेलनबी मेमोरियल ऑरेशन इम्टेक निदेशक डॉ. अनिल कौल देंगे। मुख्य अतिथि कैडिला फॉर्मा के सीएमडी डॉ. राजीव होंगे। निदेशक प्रो. आलोक धवन वार्षिक रिपोर्ट पढ़ेंगे।

Published in:

Amar Ujala, Page no. 17

CSIR-CDRI

17th February, 2018

CDRI to launch osteoarthritic product on Foundation Day

Lucknow (PNS): The Central Drug Research Institute (CDRI) will be celebrating its Foundation Day here on Saturday. On the occasion the Director General, CSIR, Dr Girish Sahani, will launch an anti-osteoarthritic product and an anti-osteoporosis agent.

The 43rd Sir Mellanby Memorial Oration will be delivered on 'Discovery and development of Bedaquiline-A new drug for drug-resistant tuberculosis-Harnessing value of Innovation' by Dr Anil Koul, Director, CSIR-IMTech, Chandigarh. The Annual Day address will be delivered by Dr Rajiv I Modi, Chairman and Managing Director, Cadila Pharmaceuticals Ltd. Thereafter the CSIR-CDRI publications will be released followed by the Annual Incentive Awards and felicitation of the staff members.

"The reporting year of CSIR-CDRI was full of achievements and enthusiasm," briefed Professor Alok Dhawan to the Research Council a day prior to the Annual Day celebrations.

"I feel it is a privilege to lead an institute like CSIR-CDRI, which has made outstanding contributions in the service of the country in the pharmaceutical sector and has set global standards in making drugs accessible and affordable." Among the various achievements which have been listed by the CSIR-CDRI the unique aspect is the reorientation of the institute into a multidisciplinary nodal centre for development of drugs for the unmet medical needs as well as the expectations of the industry, informed a senior scientist. He said that while focusing on the discovery and development of drugs the institute was aligned and contributing towards the national missions and programmes such as Make in India, Swasth Bharat, Skill India, Digital India, Start-up India, Accessible India and Sashakt Bharat.. "PM Narendra Modi visited CSIR-CDRI and saw the labs to get a first-hand knowledge of the work being conducted there. This happens to be his first visit to any of the CSIR laboratories. His visit motivated and instilled renewed enthusiasm in the CSIR-CDRI family as well as the CSIR," scientists said.

Published in:
The Pioneer

Upsetting the equilibrium

CSIR

16th February, 2018

Privileging research students in S&T labs is questionable

The Government's recent decision to introduce a new fellowship scheme to arrest brain drain from elite technical schools in order to boost India's S&T intellectual capital may not have the expected tangible results. It could even be counter-productive. Even though the contours of the scheme — announced in the Union budget — are still not publicly available, it is believed that every year, the top 1,000 students from India's best public technical schools who are willing to take up research as a career would be chosen for this programme. These students would be given a handsome sum — almost three times what a research scholar currently gets — as stipend, once they are admitted to a research position in the IITs or IISc. The scheme, as it is conceived currently, suffers from several fundamental flaws. Firstly, it wrongly presumes that lack of money is what makes students stay away from research. Secondly, it assumes that these students, brilliant no doubt, have the passion and perseverance to toil in a research lab, which requires a totally different bent of mind. More importantly, the preferential treatment meted out to these students can be challenged, say, by students studying in other institutions of higher learning. Besides, this is being announced at a time more and more bright students in the country are painfully realising that a PhD in science or engineering is just not enough to land them a good job, be it in academia or industry. It is a travesty that the Government is announcing this at a time when a large number of UGC/CSIR research fellows complain about inexplicable delays in receiving their fellowship stipends, which many attribute to paucity of funds. Indeed, many senior scientists are apprehensive that 'a new class of brahmins' among research students will disturb the chemistry of their labs.

Published in:

Busniess line, Page no 8

CCMB working to make personalised medicine a reality

CSIR-CCMB

16th February, 2018

One size does not fit all. This applies to medicine, as much as for garments. Some medicines might work on some but not on others. The key to unravel this secret lies in the uniqueness of cells of each one of us. However, unlike garments, the consequences can be quite serious when we do not respond favourably to the drugs. Could we then have a test run of the drug on a body double and pick only the ones that work for ourselves? Recent developments in life science research have led to a novel solution for this problem. Scientists can now convert ordinary cells extracted from a patient's body into what are called pluripotent stem cells and use these to develop a variety of organoids – multiple miniaturized and simplified versions of body. organs. These can then be used to screen a variety of drugs for the ailment a person is suffering from and identify those that are best suited for him or her. The Hyderabad-based Centre for Cellular and Molecular Biology (CCMB), a part of the Council of Scientific and Industrial Research (CSIR), is in the process of setting up a facility to take the benefit of this new technology to common people. Noting that several other new technologies have also come up in recent years that could help make personalised medicine a reality, the Director of the institute, Dr. Rakesh K.Mishra, said steps were underway to put them too into use. For instance, it is now possible to make cells produce bio-active products like insulin and deliver them to patients who do not produce enough of them in the form of patches. "The technologies are available. We just need to put them in place after obtaining appropriate approvals. Lots of activities are happening on this front", he said. CCMB,

he said, is looking to engage with clinicians and the industry in a big way, with them participating right from the beginning stages of research. "We want them to invest and be a partner in developing technologies. This will help accelerate research in industrial context. We will also gain a lot from their expertise in marketing and production," Dr Mishra said. In this regard, he recalled how Shanta Biotech, one of the first major biotechnology companies in India had begun its journey from CCMB. The Institute focuses both on contributing intellectually as well as in terms of developing industry ready manpower. "We interact with the industry, find out what kind of manpower they require so as to design appropriate short term courses of one, two and six month duration. In this programme, we focus on producing properly qualified technicians, technical officers and other manpower required by industries engaged in biology-related activities," he said. The research institute has recently started a programme to expose students in medical colleges in Telangana on various aspects of medical research. The aim of the program is to foster collaborations between scientists and medical professionals in medical research

Published in:
Business line

CSIR-IITR

16th February, 2018

Bid to draw roadmap for fragrance industry

Lucknow (PNS): Perfumes and fragrances have been used since the beginning of human history and their use has been recorded in the earliest available historical literature. The IITR organised a stakeholders' dialogue at its premises here on Monday with the representatives of fragrance industries, association leaders and regulators to deliberate and draw a roadmap for their sustainable future. Delivering his inaugural address, Professor Alok Dhawan, Director, Indian Institute of Toxicological Research, said that the time was ripe for industry and academia to sit with one another and not across, join hands and work together to strengthen the industry and ensure a sustainable future for all the stakeholders.

Dr Anil K Tripathi, Director, CSIR – Central Institute of Medicinal and Aromatic Plants (CIMAP), said that a point of convergence between academia and industry was only possible through dialogue. Farmers' empowerment through fair practices of trade and industry would ensure an equitable and sustainable growth for all, he said. Dr James C Romine, president, Research Institute for Fragrance Materials (RIFM), USA, said fragrance was universal and the need to ensure its quality was a global requirement. The RIFM was formed in 1966 in order to provide research on the commonly-used fragrance materials. Martina Bianchini, president, International Fragrance Association (IFRA), Switzerland, said that their association 'smells' an opportunity in the ever-growing industry. She opined that increasing awareness would lead to better decision making ensuring all-round development of the industry.

Michael Carlos, Chairman, IFRA and RIFM, appreciated the pioneering work carried out by CSIR-CIMAP in the areas of perfumes and essential oils and the initiative taken by CSIR-IITR to bring all the stakeholders on a single platform to ensure the growth of the industry.

Sant Sanganeria, Founder Chairman and Managing Director, Ultra International Limited, New Delhi, drew the attention of the participants to the vast potential of the global fragrance market. He said that there was a great opportunity for the Indian fragrance industry to reap the benefits of this market through innovative product development in order to meet the requirements of global quality standards. A recent report titled, 'India flavour and fragrance Industry Outlook to 2020' documents the steady growth of the fragrance market during the past five years. Significant technology advancements, growing importance towards personal grooming and increasing consumer spending on wellness products has contributed to this growth.

Published in:
The Pioneer, Page no. 4

CSIR-IITR

16th February, 2018

बढ़ते बाजार की चुनौतियों के लिए सुगंध उद्योग खुद को करें तैयार

सुगंध उद्योगों के टिकाऊ भविष्य के लिए एक रोडमैप तैयार किया जाएगा

आईआईटीआर में आयोजित सीएसआईआर-उद्योग कार्य योजना में जुटे सुगंध उद्योग उद्यमी

लखनऊ। मानव इतिहास के प्रारम्भ से ही इत्र और सुगंध का उपयोग किया जाता रहा है और इसका वर्णन ऐतिहासिक साहित्य में उपलब्ध है। इंडिया फ्लेवर एंड फ्रेगरेंस इंडस्ट्री आउटलुक टु 2020 रिपोर्ट के अनुसार पिछले पांच वर्षों के दौरान भारत के सुगंध के बाजार में लगातार वृद्धि दर्ज की गई है। इस दिशा में हुई तकनीकी प्रगति, व्यक्तिगत सौंदर्य के प्रति बढ़ते महत्व और स्वस्थ उत्पादों पर उपभोक्ता खर्च में बढ़ोतरी ने इस वृद्धि में महत्वपूर्ण योगदान दिया है। वैश्विक नेतृत्व प्राप्त करने के लिए यह आवश्यक है कि सुगंध उद्योग इस बढ़ते बाजार की चुनौतियों का सामना करने के लिए खुद को तैयार करे। इसके साथ ही यह आवश्यक है कि सुगंधों के मानकीकरण और वैज्ञानिक रूप से मान्य सुरक्षा डेटा भी उपलब्ध किया जाए। इस दिशा में उद्योग-शिक्षाविदों की साझेदारी के साथ एक सक्षम पारिस्थितिकी तंत्र का निर्माण इन लक्ष्यों को प्राप्त करने में तेजी लाएगा।

आईआईटीआर ने गुरुवार को अपने परिसर में एक स्टेकहोल्डर वार्ता का आयोजन किया, जिसमें सुगंध उद्योग, संघ के नेताओं और नियामकों के प्रतिनिधियों के साथ उपरोक्त मुद्दों पर विचार-विमर्श करने और सुगंध उद्योगों के टिकाऊ भविष्य के लिए एक रोडमैप तैयार किया जाएगा।

अपने उद्घाटन भाषण में आईआईटीआर के निदेशक प्रो.आलोक धावन ने कहा कि यही उचित समय है कि उद्योग से संबन्धित लोग और शिक्षाविद एक दूसरे के साथ बैठकर विचार करें और इस उद्योग को मजबूत करने, सभी हिस्सेदारों के लिए टिकाऊ भविष्य हेतु एक साथ काम करने के लिए रणनीति सुनिश्चित करें।

सीएसआईआर-केंद्रीय औषधीय एवं सगंध पौधा संस्थान (सीमैप) के निदेशक डॉ अनिल के त्रिपाठी ने कहा कि शिक्षाविदों और उद्योग के बीच आपसी सहयोग केवल संवाद के द्वारा ही संभव है। व्यापार और उद्योग के निष्पक्ष प्रथाओं के माध्यम से किसानों का सशक्तिकरण सभी के लिए न्यायसंगत और टिकाऊ विकास सुनिश्चित करेगा।

अमरीका के रिसर्च इंस्टीट्यूट फॉर फ्रेग्रेन्स मैटेरियल्स (आरआईएफएम) के अध्यक्ष डॉ जेम्स सी रोमाइन ने कहा कि सुगंध सार्वभौम है और इसकी गुणवत्ता सुनिश्चित करना वैश्विक आवश्यकता है। आरआईएफएम का गठन आमतौर पर इस्तेमाल किए जाने वाले सुगंध सामग्री पर शोध करने के उद्देश्य से 1966 में किया गया था।

स्विट्जरलैंड के इंटरनेशनल फ्रेग्रेन्स एसोसिएशन (आईएफआरए) के अध्यक्ष, मार्टिना बियांची, ने कहा कि उनकी संस्था सदा से ही इस बढ़ते उद्योग में उचित अवसरों की तलाश में है। उन्होंने कहा कि बढ़ती जागरूकता इस उद्योग के सभी प्रकार के विकास को सुनिश्चित करने के लिए बेहतर निर्णय लेने का मार्ग प्रशस्त करेगी। वैज्ञानिक सत्रों के बाद विशेषज्ञों द्वारा भविष्य की योजना तैयार करने के लिए एक पैनल चर्चा की सम्पन्न की गई। *वसं.*

Published in:

Jansandesh Times, Page no. 2

CSIR-CSMCRI

16th February, 2018

నాచు మొక్కల పెంపకంపై

మత్స్యకారులకు అవగాహన

నరసాపురం రూరల్, ఫిబ్రవరి 10 : సముద్రంలో నాచు మొక్కల పెంపకం పైలట్ ప్రాజెక్టుగా నరసాపురం మండలం పీఎంలంకను ఎంపిక చేశారు. మత్స్యకారుల జీవనోపాధిని పెంచేందుకు ప్రతిపాదించిన ఈ ప్రాజెక్టుకు ప్రభుత్వం 50 శాతం సబ్సిడీని అందించనుంది. దీనిపై శనివారం పీఎంలంక గ్రామంలో మత్స్యశాఖ ఆధ్వర్యంలో అవగాహన సదస్సులు నిర్వహించారు. మత్స్యకారులకు నాచు మొక్కల వల్ల కలిగే ప్రయోజనాలు, వాటితో తయారు చేసే మందులు, ఇతర కాస్మెటిక్స్‌పై అవగాహన కల్పించారు. ప్రస్తుతం ఈ మొక్కలకు ప్రపంచ వ్యాప్తంగా మంచి డిమాండ్ ఉన్నందున వీటి పెంపకంపై మత్స్యకారులు దృష్టి సారించాలని సూచించారు. మొక్కలు నాటిన ఆరు నెలలకు దిగుబడి వస్తుందన్నారు. విక్రయాలను మత్స్యశాఖ చేపడుతుందన్నారు. అంతేకాకుండా నాటే మొక్కలకు 50 శాతం సబ్సిడీ ఇస్తుందన్నారు.

సముద్రంలో నాచు మొక్కలు పెంపకంపై అవగాహన కల్పిస్తున్న లదృశ్యం

ప్రస్తుతం ఇతర రాష్ట్రాల్లో జరుగుతున్న ఈ మొక్కల పెంపకంపై వాటి వల్ల పొందుతున్న ఆదాయంపై మత్స్యకారుల్లో అవగాహన కల్పించారు. మత్స్య సహకార సంఘం జిల్లా అధ్యక్షుడు అండ్రాజు చల్లారావు, మత్స్యశాఖ ఏడీఈ డాక్టర్ రమణకుమార్, మత్స్యశాఖ అధికారి డాక్టర్ ఏడుకొండలు, మైలా కుటుంబరావు తదితరులు పాల్గొన్నారు.

Published in:
Andhra Jyothi

CSIR-CDRI

16th February, 2018

बेडाकुइलिन है टीबी की नई दवा

सीएसआइआर–सीडीआरआइ के वार्षिक समारोह में डॉ. अनिल ने दी जानकारी

जागरण संवाददाता,लखनऊ: हमें 2035 तक भारत टीबी मुक्त करने के लिए कड़ी मेहनत करनी होगी। दुनिया में पिछले 200 सालों में टीबी के कारण लगभग 100 करोड़ लोग मारे गए हैं। हर दो मिनट में टीबी से एक मौत होती है। दुनिया में 9.6 मिलियन लोग हर साल टीबी से ग्रसित होते हैं और 4.8 मिलियन एमडीआर टीबी से ग्रसित होते हैं। भारत में एक अध्ययन में यह पाया गया है कि हर साल 2.1 मिलियन मामले दर्ज किए जाते हैं। बेडाकुइलिन टीबी की नई दवा है जो कि शीघ्र ही भारत में भी लांच होगी। यह जानकारी आइएमटेक, चंडीगढ़ के निदेशक डॉ. अनिल कौल ने दी। वो सीडीआरआइ के 67वें वार्षिकोत्सव में बोल रहे थे।

डॉ.कौल ने बताया कि भारत में टीबी से 300,000 लोग मर जाते हैं। एक अध्ययन से पता चला है कि महिलाओं की तुलना में पुरुष टीबी से अधिक प्रभावित होते हैं। फल्मोनरी टीबी 50-60 साल की आयु के पुरुषों को प्रभावित करता है। टीबी, एड्स जैसी नई बीमारी नहीं है मिस्र की ममियों में भी इसके साक्ष्य मिले हैं।

40 साल में बस दो दवाएं

डॉ.कौल ने बताया कि गत 40 वर्षों में टीबी के लिए केवल दो नई दवाओं का आविष्कार किया गया। टीबी और एमडीआर टीबी में वृद्धि के मुख्य कारण

सीएसआइआर-सीडीआरआइ में राष्ट्रीय प्राथमिकताओं के क्षेत्र में फार्मा स्टार्टअप इकोसिस्टम को प्रोत्साहित करने की क्षमता है

डॉ. गिरीश साहनी, महानिदेशक, सीएसआइआर

हैं कुपोषण, शराब, धूमपान, इनडोर-आउटडोर प्रदूषण, अत्यधिक भीड़भाड़ और व्यावसायिक स्वास्थ्य खतरों जैसे सिलिका, सीमेंट और अन्य खनन उद्योगों में काम। बेडाकुइलिन नामक नई दवा अफ्रीका में मनुष्यों पर जांची जा चुकी है, अब भारत को भी इस दवा का इस्तेमाल करने की सशर्त अनुमति मिल गई है। यह दवा एमडीआर टीबी के लिए एक बहुत अच्छी उम्मीद है और भविष्य में वास्तव में एक वरदान हो सकती है।

फार्मा स्टार्ट अप का हुआ उद्घाटन

डीजी सीएसआइआर डॉ. गिरीश साहनी ने एडवांस्ड प्लेटफॉर्म कॉर रिसर्च, इनोवेशन एंड ट्रांसलेशन (एएमआरआइटी) सुविधा का उद्घाटन किया। उन्होंने कहा, इससे राष्ट्रीय प्राथमिकताओं के क्षेत्रों में फार्मा स्टार्ट-अप के अनुरूप माहौल को बढ़ावा मिलेगा। सीएसआइआर-सीडीआरआइ के निदेशक प्रो. आलोक धावन ने सीएसआइआर-सीडीआरआइ द्वारा की गई उपलब्धियों का विस्तृत विवरण प्रस्तुत किया। उन्होंने बताया कि जीएलपी और डिजन दस्तावेज आदि मंच पर गणमान्य व्यक्तियों द्वारा जारी किए गए।

ये पुरस्कार आज दिए गए

एम एम घर मेमोरियल डिस्टिंगिश्ड कैरियर एवीयमेंट अवार्ड-2018 मोहम्मद निजाम मंसूरी, डॉ एमएम घर मेमोरियल डिस्टिंगिश्ड कैरियर एवीयमेंट अवार्ड-2018 अभिषेक गुप्ता, डॉ जेएम खन्ना मेमोरियल डिस्टिंगिश्ड कैरियर एवीयमेंट अवार्ड-2018 युवराज सिंह, डॉ जेएम खन्ना मेमोरियल अर्ली कैरियर अचीयमेंट अवार्ड 2018 नरेश मित्तापल्ली, डॉ स्वर्ण नित्य आनंद मेमोरियल अर्ली कैरियर अचीयमेंट अवार्ड 2018 गीतु पांडे और डॉ डीएल श्रीवास्तव मेमोरियल अर्ली कैरियर अचीयमेंट अवार्ड-2018 विकास द्विवेदी को उत्कृष्ट अनुसंधान के लिए दिया गया।

ड्रग अनुसंधान में उत्कृष्टता के लिए सीडीआरआइ पुरस्कार -2018

समारोह में ड्रग अनुसंधान में उत्कृष्टता के लिए सीडीआरआइ पुरस्कार-2018 की घोषणा की गई। लाइफ साइंसेज श्रेणी में सीडीआरआई पुरस्कार -2018 डॉ .अरुण शुक्ला, आईआईटी कानपुर और डॉ अमित जोहरापुरकर, जायडस कैडिला को दिया जाएगा। वहीं केमिकल साइंसेस श्रेणी में सीडीआरआइ पुरस्कार-2018 डॉ. पी श्रीहरि, सीएसआइआर-आइआइसीटी हैदराबाद को दिया जाएगा। ये पुरस्कार सितंबर में एक समारोह के दौरान दिए जाएंगे।

Published in:
Andhra Jyothi

CSIR-CDRI

16th February, 2018

'Need collective efforts to make India TB-free'

PIONEER NEWS SERVICE ■ LUCKNOW

CSIR-CDRI celebrated its 67th Annual Day on Saturday. In the morning session, the prestigious 43rd Sir Edward Mellanby Memorial Oration was delivered by CSIR-IMTECH (Chandigarh) director Anil Kaul. The topic was discovery and development of 'Bedaquiline', a new drug for drug-resistant tuberculosis, harnessing value of innovation.

In his oration, he said: "We have to work hard to make India TB-free by 2035. Around 100 crore people have died of TB across the world in the last 200 years. About 9.6 million people develop TB every year in the world and 4.8 million get MDR TB, which is difficult to cure. In a study in India, It has been found that 2.1 million cases are reported every year and 300,000 people die of TB in India only. A study showed that more men are affected by TB than women. Childhood cases of TB are reported in 7% cases. Pulmonary TB affects men in the age group 50-60 years. It is not a new disease like AIDS but there are evidences in Egyptian mummies also. In the last 40 years, only two new drugs were invented for TB."

He further pointed out that the main reasons for increase in TB and multi-drug resistant TB are under-nutrition, intake of alcohol, smoking, indoor, outdoor pollution, overcrowding and occupational health hazards like

those who works in silica, cement and other mining industries.

"To make India TB-free in the years to come involves the challenge of early diagnosis which should be cheaper, more effective drug and shortening span of treatment from six months to one month and in future up to 15 days. Several new drugs like 'Bedaquiline' are tested in Africa on humans and now India also got the conditional permission to use this drug. This drug has a great hope for MDR TB and can be really a boon in future. CSIR-CDRI has the potential to stimulate the pharma start-up ecosystem in areas of national priorities," DG, CSIR, Girish Sahni said. Meanwhile, with a vision to strengthen and leverage the cutting-edge platform technologies into an overarching innovation platform for drug discovery and development in collaboration with academia and industry, CSIR-CDRI has set up an Advanced Platform for Research, and Innovation (AMRIT).

Inaugurating this facility, Dr Sahni said it would stimulate the pharma start-up ecosystem in areas of national priorities. "The cohort of technology platforms made available through AMRIT will be deployed for discovery in selected key areas of communicable and non-communicable diseases and reproductive health," he said, adding, "In the coming year, we will also strive to strengthen the medicinal & natural product chemistry, bio-therapeutics and linkages with industries."

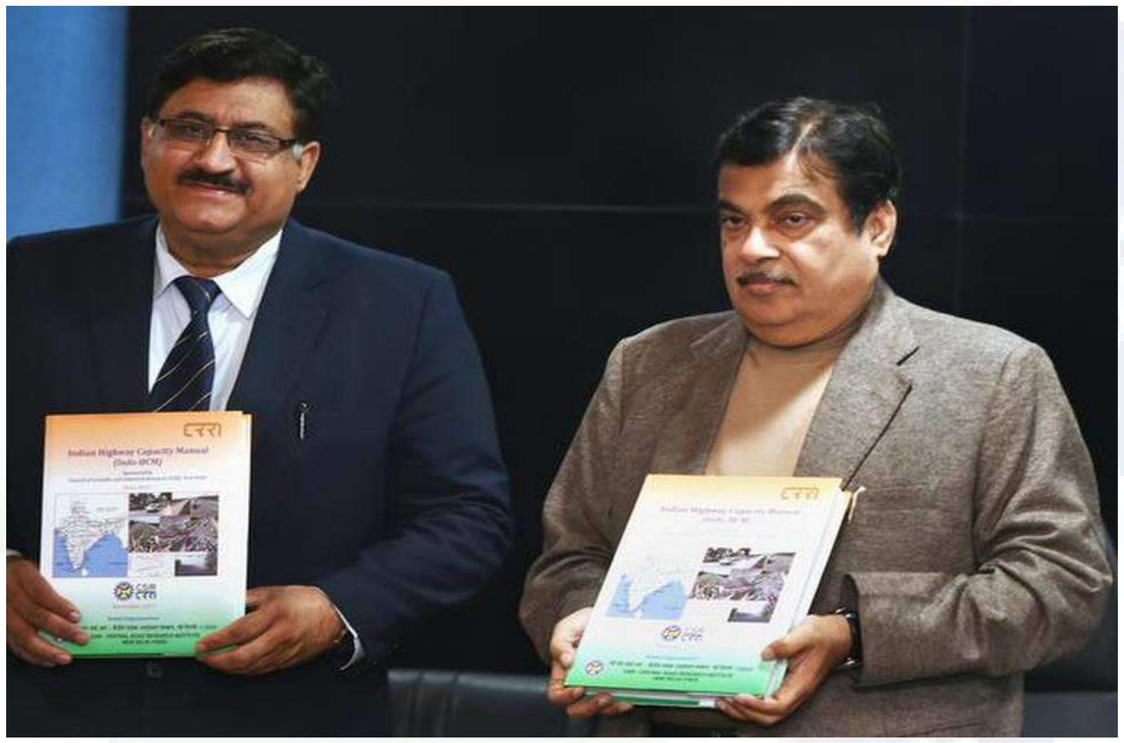
The second part of the celebration witnessed the presence of chairman and managing director of Cadila Pharmaceuticals Ltd Dr Rajiv I Modi as the chief guest while Dr Sahni presided over the function.

Published in:
Andhra Jyothi

No fund crunch like last year, claims CSIR

CSIR

15th February, 2018



Even though it got only a 3.3% hike in the Union Budget, the Council of Scientific and Industrial Research (CSIR) has said it no longer faces a fund crunch like last year. This was because it didn't pay out as much money towards settling pension arrears as anticipated. Last year, CSIR Director-General Girish Sahni had said in a letter to staffers that the organisation had only about ₹360 crore, a fourth of the roughly ₹1,200 crore, for funding new research projects and that the organisation had to make a committed effort to raise money from external sources.

Increased salary outgo

The crunch was primarily due to the organisation having to meet the increased salary outgo from recommendations of the 7th Pay Commission and a ₹1,650 crore-hit towards meeting pension requirements. "However, we didn't have to pay as much as we'd anticipated," Mr. Sahni told *The Hindu* during a conference to discuss budgetary support for science departments. He didn't however give updated figures. According to the outlay for the year, the CSIR spent ₹4,500 crore last year and this year has been allotted ₹4,734 crore for 2018-2019. There are no detailed breakdowns of how this money has been apportioned.

The CSIR has 38 labs and about 4,000 scientists in its network. "We have identified several programmes for funding and the move was part of CSIR's larger mission to move towards attracting more external funds and financial self-reliance," Mr. Sahni added.

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Greater scrutiny

A director of a CSIR lab who didn't want to be named said that there was a greater scrutiny of funds but deserving projects didn't face any shortage. "There have been projects in the past that wouldn't have been funded anywhere but would be funded here. That has stopped," the director explained

Published in:
The Hindu

Scientists use a naturally occurring medicinal herb to aid in mass spectrometry

CSIR-IICT

15th February, 2018

Scientists at Council for Scientific and Industrial Research- Indian Institute of Chemical Technology (CSIR-IICT) have, for the first time, used Chrysophanol derived from Himalayan rhubarb to develop MALDI matrix- a matrix used to analyse large molecules. Matrix assisted laser desorption/ionization (MALDI) is an ionization technique used in mass spectrometry--used to measure the masses of different elements within a given chemical sample. It can be used in the analysis of biomolecules, like DNA, proteins, sugars, etc, and other large organic molecules, like polymers and macromolecules. For the mass analysis, the sample to be tested is mixed with a suitable matrix called MALDI matrix, which helps with the ionization of the sample molecules. This mixture is then placed on a metal plate. When light in the form of laser strikes the metal plate, the mixture of MALDI matrix and sample is ionized, which is then analyzed using a suitable mass spectrometer. Dithranol is a chemical usually preferred for the construction of the MALDI matrix. In a first, scientists from CSIR-IICT used naturally occuring Chrysophanol (CP), 8-Dihydroxy-3-methylanthraquinone as a replacement for Dithranol for the construction of the matrix. CP is a naturally occuring compound, isolated from the bark of Rheum emodi or Himalayan rhubarb tree. The bark of *Rheum emodi* is found to have several medicinal uses has been used since antiquity as a medicinal herb used in Ayurvedic medicine for many therapeutic purposes. As CP is structurally similar to Dithranol, the scientists used it as a substitute for

Dithranol, while making the matrix. The scientists then used the CP matrix for the analysis of a wide variety of molecules, like lipids, vegetable oil, organometallics, peptide polystyrene, polyethylene glycols etc. CP was found to work similar to Dithranol in all the tests performed.

"Naturally occurring chrysophanol (CP) can be used as an effective new alternative MALDI matrix for a broad range of analytes ranging from small molecules (Lipids, Organometallics, Iridoids, vegetable oil, peptides etc.) to synthetic polymers viz., PEGs and polystyrenes" conclude the scientists about their research.

Published in:
Research Matter

KCB to install 18 water purifiers at public places in cantonment limits

CSIR-NCL

15th February, 2018

PUNE: The Khadki Cantonment Board will install 18 water purifiers in schools, hospitals and market places as part of a plan to provide potable water at public places in the cantonment limits. The total cost of the project will be about Rs 50 lakh.The agenda was discussed at the general body meeting held last year and all the board members agreed to the proposal. As per the procedure, the board floated a tender in this regard and three bidders evinced interest. Amol Jagatap, KCB chief executive officer, said, "A work order for installation of water purifiers has already been issued and the actual installation will be underway shortly.

The National Chemical Laboratory has offered to supply free dispensers to schools." The water purifying units will be installed at market areas, hospitals, bus stations and schools in the cantonment. Two units will be provided by CSIR-National Chemical Laboratory (NCL), which has developed its own water purifying technology under the Gramin Vigyan Kutir(CSIR Techvill) programme. These units will be installed only in schools. The board authorities will install purifier in each ward. The purifier has a capacity to dispense 50 litres per hour. Senior scientist P K Ingale of NCL told TOI, "Our endeavour is to promote treated water consumption. Our plan is to cover government offices. Using our purifier, there is less water wastage in comparison to wastage in reverse osmosis process." "Many people had demanded that we install water purifier as they don't get water free of cost. Therefore, we tabled this issue before the board authorities and

they eventually agreed to set up purifiers in the cantonment limits. This will help people in summer months," said a senior member of the board.

Published in:
The Times of India

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