

CSIR in Media



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Delhi Metro vibrations, noise shake up residents; experts roped in

CSIR-CRRI

5th October, 2019

The ever-expanding Delhi Metro Rail Corporation (DMRC) has been plagued with a new problem —complaints regarding vibrations and noise caused due to its train movements.

To address the problem, the corporation is preparing guidelines to mitigate noise levels at its elevated stations and testing a new technology to reduce vibration at its underground ones. The DMRC has roped in the Central Road Research Institute (CSIR-CRRI) to prepare guidelines for measures to be taken along elevated corridors to ensure noise levels are within permissible limits.

Anuj Dayal, executive director corporate communications at DMRC, said, “We have received complaints from various places regarding noise along our elevated corridors. We had asked CRRI to prepare guidelines about three months ago, as there is no such guidelines available worldwide, specifically for Metro systems. Wherever there is a need, we are retrofitting the tracks to minimise noise and vibration levels.” The guidelines will provide parameters for installing noise barriers depending on noise level, location of the station and distance of the buildings in the vicinity. There are 181 elevated stations in Delhi, with the Metro cutting through residential areas such as Karol Bagh, East of Kailash and Mayur Vihar.

According to Dr Nasim Akhtar, principal scientist at transportation planning and environment division, CSIR-CRRI, “We will recommend the use of frequency-based noise barrier to be installed at elevated tracks so that there is no noise related issue in areas around the stations or along the tracks.” Akhtar, who is working on the guidelines, carried out a survey on Metro tracks in Dwarka recently, to record the exact noise level on the tracks. “The noise level is close to 80 dB(A) on the tracks. In the guidelines, we will recommend height and type of the noise barrier depending on the distance of the nearest

buildings from the station or tracks, height of nearby structures and elevation of the tracks, among other factors,” said Akhtar. He said that the guidelines will be submitted to DMRC by the end of this month.

The vibration issue

With 68 underground stations, mostly in south and central Delhi, DMRC has been receiving several complaints regarding vibrations. Residents of Saket, Hauz Khas, Begumpur, Shahbad Mohammadpur, Sarvpriya Vihar have complained that they feel the vibration every time a train passes in the tunnel. With four Metro corridors — Yellow line (HUDA city centre-Samaypur Badli), Blue Line (Dwarka sector 21-Noida city Centre), Violet line (Kashmere Gate-Raja Nahar Singh) and Airport express line — passing through central Delhi, residents of Luytens’ Delhi too have complained about vibrations and rumbling noises inside their bungalows.

Earlier this year, BJP leader and former MP, Murli Manohar Joshi, had complained to DMRC in this regard. “We could hear the sound of trains passing underneath the house. DMRC, however, was prompt to address the issue. Though the problem is still there, it has reduced substantially,” said Rajiv Belwal, personal secretary to Joshi. DMRC has started a trial to test a new technology on a 300 metre long stretch at Central Secretariat to reduce vibration at source.

DMRC has installed a new fastening system (Vanguard), which holds the tracks from either side due to which they don’t touch the surface. “This results in considerable reduction in vibration at source. We are testing this system for the last two months. We will have to study it for a longer duration to assess its longterm impact. This system has been used in the Tube in London,” said Dayal. Vibration is caused due to the interaction between the wheel and the rail track in underground stations. As per DMRC, vibration on underground tracks is between 70-80 VdB.

“Vibration or rumbling sound is often experienced in the structures above the ground depending on factors such as the type of underground surface (rocky or soil), proximity of structures to the tunnel etc. World over, thick pads are provided underneath the tracks or floating chambers are constructed to address the problem of vibration,” said Akhtar.

DMRC officials say that in all its tracks constructed in Phase-I and II, there were two layers of thick padding provided on the tracks to reduce vibration. But in Phase-III, the Metro added another layer of padding and used the mass spring system technology. In this, a thick polyurethane pad sheet is spread underneath the tracks.

“In Phase III, we have extensively provided mass spring system to reduce vibration levels. We have used this where the residential buildings were too close or we suspected that it could lead to vibration-related problems. We regularly do the rail grinding and wheel profiling to ensure the surface is smooth,” said Dayal.

CSIR-NCL

5th October, 2019

Prasad to receive MRSI-ICSC Prize

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PUNE: BLV Prasad, a scientist at CSIR-National Chemical Laboratory (CSIR-NCL), has been selected by the Materials Research Society of India



for the MRSI-ICSC Materials Science Annual Prize. This award recognises scientists for their contribution to the development of materials science research in India. He has made a notable contribution in materials chemistry including areas of nanomaterials and soft materials.

Prasad's team is actively

working to develop a practical and scalable method for preparation of nanomaterials using chemical methods. It has shown that these methods generally referred to as 'bottoms-up' methods. He was one of the people responsible for setting up a unit on Nanoscience and Technology at CSIR-NCL, with the help of funding from the Department of Science and Technology in New Delhi. His work in materials science research especially the synthesis of functional nanomaterials that finds many applications in the fields of catalysis and healthcare has been generating interest from academic and industrial communities.

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Sakal times

Awareness prog on medicinal plants, mushroom cultivation held

CSIR-NEIST

5th October, 2019

At least 65 beneficiaries, farmers, local healers and others participated in an awareness programme on 'Conservation, cultivation, sustainable utilization and medicinal plant and cultivation of mushroom', organized by the Itanagar branch of the CSIR-North East Institute of Science and Technology (CSIR-NEIST) here in West Siang district on Friday, in collaboration with the Siang Farmers' Federation (SFF) and the Liromoda Farmers' Club (LFC).

Addressing the participants, the CSIR-NEIST's Itanagar Branch Principal Dr Chandan Tamuly delivered a talk on the 'Importance of Zanthoxylum armatum and its pharmaceutical value', and assured the farmers that the institute would provide them with technical support according to their requirements. Senior TO Dr Budhen C Baruah delivered a talk on 'Cultivation of mushroom and production of vermicompost', and demonstrated the technique of mushroom production.

SFF secretary Naykar Raksap and LFC secretary Komjum Romin also spoke. A herbal anti-arthritis ointment developed by the Jorhat-based CSIR-NEIST was distributed among the farmers under the CSIR's Aroma Mission.

Published in:
[Arunchal Times](#)

UP: Scientists from CSIR-CIMAP develop hybrid Tulsi in Lucknow

CSIR-CIMAP

5th October, 2019

Scientists from Central Institute of Medicinal and Aromatic Plants of Council of Scientific and Industrial Research (CSIR-CIMAP) have developed hybrid Tulsi in aromatic forms like paan, lavender, lemon and cardamom. "The advantage with Tulsi is that it can be grown easily and is disease resistant. It will increase the market value and double farmers' income," Dr. Abdul Samad, Acting Director CIMAP told ANI.

The scientists claim that the hybrid Tulsi can be fully cultivated in around 70 days. "I came here to buy Paan Tulsi). I also want to grow these new varieties of Tulsi in my farm. This might increase my profits," said Rajkumar, a farmer. "I used the hybrid mutation process and mixed two kinds of Tulsi. The byproduct of this is equally good and profitable for farmers. This Tulsi has all the components which are used in making paan, and other aromatic varieties of Tulsi are also beneficial to people," said Dr. Chandan Singh, senior scientist, CIMAP. He further added that people would get the exact taste of paan when they consume the paan Tulsi, as well as its health benefits. (ANI)

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[ANI](#)

CSIR-CBRI

4th October, 2019

Mahatma Gandhi's 150th Birth Anniversary: Students Learnt About The 5 R's Of Waste Reduction

Roorkee: Central Building Research Institute, Roorkee scientists visited CBRI Junior High School, Roorkee on 03 October 2019 to observe Mahatma Gandhi's 150th Birth Anniversary, under Swachhata Hi Seva 2019. The students took pledge to keep their home, school, surroundings and environment clean and to spread the message of Swachh Bharat to all.

Interacting with the students, Dr. Atul Kumar Agarwal, Senior Principal Scientist & Jigyasa Programme Coordinator, CSIR-CBRI, Roorkee pre-

sented a lecture on "Swachh Bharat: 5 R's of Waste Reduction" and discussed small but effective ways through which students can contribute to the Swachh Bharat Mission. He talked about the five basic waste reduction mantras - Refuse, Reduce, Reuse/Repair, Recycle and Rot. He urged the students to refuse to use single-use plastic and spread the message for the same. By reducing our consumption, reusing, composting the organic and recycling the rest, we can lead our nation one step closer to a Zero Waste India.

Dr. Agarwal also informed the students about environment-friendly waste-to-value added product technologies of CSIR-CBRI, Roorkee such as geopolymer-based bricks, paver blocks from C&D waste, thermal insulation tiles using vermiculite waste, floor tiles from Kota Stone waste, COIR-CNSL boards etc and also informed them about affordable technologies for low-cost toilets and wastewater disposal system for rural sanitation. Students discussed their views and ideas on plastic waste management and career opportunities at CSIR in various areas of science. About 35 students of CBRI Junior High School, Roorkee along with their Principal Smt. Lata Rani and teachers Anju Gaur, Alka Rani, Inu Saini and Pramod Sharma were present during the occasion.



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The Hawk

विद्यार्थियों को बताए अपशिष्ट प्रबंधन के पांच मूल मंत्र

150वीं वर्षगांठ पर बापू के सपनों के भारत के निर्माण का लिया प्रण

उत्तर भारत लाइव ब्यूरो
uttarbharatlive.com

रुड़की। केन्द्रीय भवन अनुसंधान संस्थान रुड़की के वैज्ञानिकों ने स्वच्छता ही सेवा 2019 के अंतर्गत आज सीबीआरआई जूनियर हाई स्कूल के विद्यार्थियों के साथ महात्मा गांधी के 150वीं वर्षगांठ के अवसर पर एक स्वच्छ भारत के निर्माण का संकल्प लिया। विद्यार्थियों ने अपने घर, विद्यालय और आस पास के वातावरण को स्वच्छ रखने और स्वच्छता के सन्देश को सब तक पहुंचाने के लिए अपनी प्रतिबद्धता व्यक्त की।

विद्यार्थियों को स्वच्छ भारत अपशिष्ट प्रबंधन के पांच मूल मंत्र विषय पर व्याख्यान प्रस्तुत करते हुए सीबीआरआई के वरिष्ठ प्रधान वैज्ञानिक और जिज्ञासा कार्यक्रम

समन्वयक डॉ अतुल अग्रवाल ने बताया कि छोटे-छोटे उपायों द्वारा विद्यार्थी अपने स्तर पर स्वच्छ भारत के लिए योगदान कैसे दे सकते हैं।

उन्होंने कचरे का न्यूनतम उत्पादन करने के लिए अपशिष्ट प्रबंधन के पांच मूल मंत्रों इनकार (रिफ्यूज), कम (रिड्यूज), पुनः उपयोग (रेयूज) और मरम्मत (रिपेयर), पुनर्नवीनीकरण (रिसाइकल) और सड़ांध (रॉट) के विषय में विद्यार्थियों को समझाते हुए कहा कि आवश्यकता के अनुसार खरीदारी करें और एकल उपयोग प्लास्टिक का उपयोग न स्वयं करें न किसी और को करने दें, टूटी हुई चीजों और पुराने कपड़ों आदि को ठीक कर पुनः उपयोग में लाएं अथवा किसी को दान करें।

डॉ. अग्रवाल ने विद्यार्थियों को सीबीआरआई की पर्यावरण-अनुकूल अपशिष्ट-से-उपयोगी उत्पाद जैसे जियोपॉलिमर आधारित ईंटों, निर्माण और विध्वंस अपशिष्ट से पैवर ब्लॉक, वर्मीक्युलाईट कचरे का



उपयोग करके थर्मल इंसुलेशन टाइल्स, कोटा स्टोन अपशिष्ट से फर्श टाइल, कॉयर-सीएनएसएल बोर्ड आदि तकनीकियों, ग्रामीण भारत में स्वच्छता के लिए कम लागत वाले शौचालय और अपशिष्ट जल निपटान प्रणाली आदि के विषय में विषय में भी जानकारी दी।

कार्यक्रम के दौरान विद्यार्थियों ने पूर्ण उत्साह के साथ वैज्ञानिकों के

साथ प्लास्टिक कचरे के प्रबंधन और विज्ञान के विभिन्न क्षेत्रों में सीएसआईआर प्रयोगशालाओं में कैरियर के अवसरों पर चर्चा की। कार्यक्रम में सीबीआरआई जूनियर हाई स्कूल के लगभग 35 विद्यार्थी अपनी प्रधानाचार्या श्रीमती लता रानी तथा शिक्षकों अंजू गौर, अलका रानी, इनु सैनी और प्रमोद शर्मा के साथ मौजूद रहे।

IOC builds road from single-use plastic

CSIR-CRRI

3rd October, 2019

After Reliance Industries, state-owned Indian Oil Corp (IOC) has built a road using single-use waste plastic as the industry demonstrated recycling opportunities to keep plastic in use whose alternative in paper or metal have much higher energy and water footprint. IOC laid an 850-meter long road outside its R&D Centre in Faridabad, near here, using "varying concentration (1%-3%) single-use waste plastic" alongside bitumen, a company statement said here. The road building, similar to the 40-km stretch that built by Reliance at its Nagathone petrochemical plant in Maharashtra, used shredded single-use plastics or polythene bags used to carry daily use items.

"As per the lab tests, the waste plastic roads have the advantages of higher strength, increased durability, lesser rainwater seepage due to plastic in the aggregates, better binding/bonding of mix and lesser stripping with fewer pot-holes," IOC said. While PET bottles such as once used for the sale of mineral water and soft drinks are completely recyclable, single-use plastic such as polythene bags posed an environmental challenge as they were mostly discarded. PET bottles land up in recycling centres as they fetch Rs 35 per kg in trash or waste market but single-use plastics have no such economic value.

If companies recycling single-use plastic can guarantee Rs 15 per kg, collection of single-use plastic too would become an economically viable model and help eliminate risk they now poss, industry officials said. "People forget why plastic came into being. Plastic replaced paper and glass which was commonly used for purposes such as milk sale. Paper and glass have a much higher carbon footprint as they not just involve a high degree of energy usage in their manufacturing including cutting of trees, but also require a large water usage when they are washed for reuse," an official said.

In comparison, plastic, if sustainably collected and recycled, has much lower energy and water footprint, he said. The 850-meter road outside IOC's R&D Centre in Faridabad used about 16 metric tonnes of waste plastic from single-use carry bags/packaging film waste. "Performance of this road will be monitored by IOC R&D centre in association with CSIR-CRRI, and also fine-tune the concentration of single-use plastic to be added," IOC statement said.

IOC said a special grade of Bitumen, CRMB55, has been designed using 2wt% of waste (single use) plastic material. A first truckload of the product was flagged off by IOC Chairman Sanjiv Singh from the company's Panipat refinery. "Yet another novel initiative introduced on the day were polybags for bitumen filling produced from 100% single-use waste plastic, which solubilize fully in the bitumen at the time of road paving. Bitumen is packed in two-layered specially designed poly-bags - one inner liner bag for filling and another outer (raffia) bag with handle for ease of handling.

"At the user's end, the outer bag is removed and bitumen along with the inner bags can be charged into the bitumen hot mix plant. During the bitumen melting process at the road construction site, the inner bag melts and completely homogenizes with the bitumen, which can be further used in the same way as conventionally packed bitumen," it said. In order to establish robust supply chain of waste (single use) plastic material for implementing these initiatives on regular basis and to develop a sustainable business model, IOC also released a National Expression of Interest (EoI) on Wednesday for assessing the market availability and willingness of parties/aggregators/ organizations to supply different types of waste plastics in commercial quantities on consistent basis.

Industry officials said in today's modern world, plastics have become an integral part of human life. The plastics are in fact helped make human life easier. The environmental problems arise not because plastics are bad but in absence of effective disposal and recycling mechanism these materials find its way in landfills, they said.

Besides building a road from single-use plastic, Reliance collects PET bottles and recycles them into eco-friendly polyester fibres that can be used for making fabric from T-Shirts to Jeans. Recycling of PET Bottles is being carried out at Reliance's Barabanki, Hoshiarpur and Nagothane plants, a company official said.

IOC said to mark the 150th birth anniversary of Mahatama Gandhi and as part of the Swachh Bharat Abhiyan, the company flagged off 10 LPG delivery vans with banners to promote the use of Repurposed Used Cooking Oil (RUCO) as biofuel.

"Biodiesel is an alternative fuel similar to conventional or fossil diesel. Biodiesel can be produced from vegetable oil, animal oil/fats, tallow and cooking oil. Used Cooking Oil (UCO) can be converted to Fatty Acid Methyl Esters (FAME), which has fuel properties similar to crude based diesel and hence called Biodiesel. Thus UCO is a major source for the production of biodiesel," the statement said adding the potential of Bio-diesel from UCO in India is estimated at 3.5 million tonnes per annum. ANZ MR

CSIR-NCL

3rd October, 2019

राष्ट्रीय रासायनिक प्रयोगशाला में हिंदी समारोह संपन्न

कार्यालय में हिंदी के प्रयोग को बढ़ावा देने के लिए विभिन्न हिंदी प्रतियोगिताएं आयोजित की गईं

पुणे, 3 अक्टूबर (आ.प्र.)

सीएसआईआर-राष्ट्रीय रासायनिक प्रयोगशाला (CSIR-NCL) में 16 सितंबर से 30 सितंबर तक हिंदी पखवाड़ा मनाया गया. हिंदी पखवाड़े के दौरान राजभाषा हिंदी के प्रयोग को बढ़ावा देने के लिए विभिन्न हिंदी प्रतियोगिताएं आयोजित की गईं. जिसमें कर्मचारियों और रिसर्च स्कॉलर ने बड़ी संख्या में भाग लिया. पखवाड़े के दौरान नगर स्तर पर हिंदी परिचर्चा, हिंदी शुद्ध लेखन प्रतियोगिता, हिंदी काव्यपाठ, सामान्य ज्ञान प्रतियोगिता, लेखक एवं स्लोगन प्रतियोगिता तथा हिंदी निबंध लेखन प्रतियोगिता आयोजित की गईं. इसी क्रम में एक दिवसीय वैज्ञानिक हिंदी संगोष्ठी में प्रमुख अतिथि के रूप में आगरकर अनुसंधान संस्थान पुणे के प्रमुख वैज्ञानिक डॉ.एस.के.सिंह, कार्यकारी निदेशक डॉ. एस.पी.चव्हाण तथा संगोष्ठी के संयोजक



हिंदी समारोह में 'एनसीएल आलोक' पत्रिका का विमोचन करते हुए अतिथि.

वरिष्ठ प्रधान वैज्ञानिक डॉ. राजेश गोत्राडे उपस्थित थे.

कार्यक्रम के प्रारंभ में स्वागत भाषण हिंदी अधिकारी डॉ.स्वाति चट्टा ने दिया एवं संगोष्ठी की प्रस्तावना डॉ. राजेश गोत्राडे ने प्रस्तुत की. कार्यक्रम के मुख्य अतिथि डॉ.एस.के.सिंह ने कहा कि 'एक राष्ट्र, एक ध्वज के साथ-साथ एक भाषा का विधान होना भी आज की सबसे

महत्वपूर्ण आवश्यकता है. देश में सभी भाषाएं फले-फूले लेकिन अपनी राजभाषा हिंदी को सही अर्थों में अपनाना जरूरी है. कार्यकारी निदेशक डॉ.एस.पी.चव्हाण ने इस आयोजन पर कहा कि वैज्ञानिकों के कार्य को जन-जन तक पहुंचाना अत्यंत जरूरी है और यह जनभाषा हिंदी के माध्यम से ही संभव हो सकता है. संगोष्ठी का आयोजन तकनीकी सत्रों में किया गया

जिसमें कुल 17 रिसर्च पेपर प्रस्तुत किए गए. तकनीकी सत्रों की अध्यक्षता डॉ. सी.बी. रमन्ना (वरिष्ठ प्रधान वैज्ञानिक), डॉ.डी.एस.रेड्डी (वरिष्ठ प्रधान वैज्ञानिक) तथा डॉ. आशीष भट्टाचार्य (प्रधान वैज्ञानिक) ने की.

इसके साथ ही पखवाड़े के समापन अवसर पर 'एनसीएल आलोक' पत्रिका का विमोचन किया गया तथा पुरस्कार वितरण किए गए. इस कार्यक्रम के मुख्य अतिथि डीआरडीओ के आयुध एवं समाघात अभियांत्रिकी महानिदेशालय के निदेशक (प्रशासन) डॉ. हिमांशु शेखर थे.

श्री शेखर ने इस पखवाड़े के दौरान आयोजित प्रतियोगिताओं के विजेताओं और राजभाषा हिंदी का उल्लेखनीय प्रयोग करने वाले अधिकारियों और कर्मचारियों को पुरस्कार और स्मृति चिन्ह देकर सम्मानित किया.

Published in:

Aaj Ka Anand

Drive to aware people of harmful impact of single-use plastic

CSIR-IIP

3rd October, 2019

Various civic agencies in the national Capital on Wednesday organised a plogging drive to create awareness on the harmful effect of single-use plastic. Lieutenant Governor of Delhi Anil Baijal complimented the Delhi Development Authority (DDA) and Municipal Corporations for implementing Swachhta Abhiyan and called upon to ensure segregation of waste into biodegradable and non biodegradable by providing separate dustbins and collection from each door step/household.

The LG was speaking at Swachhta, Fit India and Single Use Plastic-Free event of the Delhi Development Authority on the occasion of 150th Birth Anniversary of Mahatma Gandhi at Rohini Sports Complex. Baijal asked to mobilise the society for non use of plastic and educate them from its hazardous effects. The LG said that real tribute to Gandhiji would be to follow his doctrines of Equality, Liberty and Dignity. He further said that all departments/offices in Delhi have been instructed to ban use of single-use plastic. Stressing on the importance of sports for a healthy life, he asked the DDA to explore possibility of setting up Centre of Excellence in Sports with the help of experts where services of international coaches can be taken. Under "Fit India" campaign, Yoga camp/taekwondo was organised in all DDA sports complexes.

Baijal also released manuals of Mahatma Gandhi National Council of Rural Education. These manuals- Jal Shakti Campus and Jal Shakti Gram and Swachh Campus will help higher education institutions in developing strategies, action plans and implementation plans for water conservation on the campuses and in the village with which the campuses are engaged with. Tarun Kapoor, VC DDA administered Swachhta pledge to the people present at the parks at Rohini. Senior Officers and officials of DDA and public in large numbers were in attendance.

Shri Vijender Gupta, MLA Rohini and other dignitaries were also present. On the occasion, a MoU was signed by the DDA with MCD and CSIR-IIP Dehradun for municipal dump reclamation and plastic waste conversion and setting up units/plants in Delhi. As per the MoU, the DDA will make available the land for setting up the plants. All three Municipal Corporation and New Delhi Municipal Council will be responsible to provide the segregated plastic waste as a feed-stock to the plant, while the Indian Institute of Petroleum, CSIR, Dehradun will provide the technology and technical supervision, a senior official said. Meanwhile South Delhi Municipal Corporation (SDMC) also organized plog runs at around 80 places under its four zones that witnessed a large crowd of enthusiastic participants at most of the places.

"More than 20 thousand persons joined hand to generate awareness on single use plastic ban and collected plastic waste in large quantity which has either been given to the concessionaires or sent to the waste to energy plant for recycling and proper reuse," the official said. The run was started from Sai Mandir Lodi Road and culminated at Dargah Nizamuudin. Apart from picking plastic waste awareness against single use plastic was also generated in Nizamuddin basti, Kalindi Kunj Ghat, Srinivas Puri, Lajpat Nagar, Jamia Hamdard and Tughlakabad extension. North and East Corporation also organized a similar plogging drive. A senior EDMC official said that the objective of this drive was to create awareness and connect all citizens of East Delhi to participate in the Shramdan under 'MY10 KG Plastic' campaign by contributing in collection, proper disposal and to eliminate the single use plastic from their life to beat the plastic pollution. Citizens of East Delhi also bring their collected plastic waste and handed over to sanitation staff of Corporation, he said.

North Delhi Mayor Avtar Singh on Wednesday inaugurated a plastic collection centre at Fatehpuri Chowk and a plastic bottle crushing machine at Yudhveer Singh Park, Chandani Chowk, to mark the 150th birth anniversary of Mahatma Gandhi, the officials said.

Published in:
[The Pioneer](#)

Indian scientists achieve high precision in gene editing

CSIR –IGIB



Indian scientists have developed a new variant of currently popular gene editing tool, CRISPR-Cas9, and have shown that this variant can increase precision in editing genome while avoiding unintended changes in DNA. The researchers have also shown that this type of gene editing can be used to correct sickle cell anemia, a genetic blood disorder. The experiments have been done in human-derived cells from patients of sickle cell anemia, according to findings of the study published in leading scientific journal Proceedings of the National Academy of Sciences (PNAS). The study has been done by researchers from the Delhi-based Institute of Genomics and Integrative Biology (IGIB) of the Council of Scientific and Industrial Research (CSIR).

2nd October, 2019

By reprogramming and using a naturally occurring gene editing system - CRISPR-Cas9 - found in bacteria, scientists globally have been engaged in 'editing' genome of various organisms. CRISPR-Cas9 stands for 'Clustered regularly interspaced short palindromic repeats and CRISPR-associated protein 9.' This protein can be programmed to go to a desired location in the genome and correct or edit defective strands (such as those involved in certain diseases) of DNA. The technology, when perfected, may be used to treat several genetic disorders. However, the current technique faces challenges as the 'molecular scissors' could sometimes miss its target and result in unintentional results. One of the widely used Cas9 enzyme in gene editing is *Streptococcus pyogenes* Cas9 (SpCas9) and its engineered variants. They have been harnessed for several gene-editing applications across different platforms, but concerns remain regarding their off-targeting at multiple locations across the genome. To overcome these problems, Indian researchers used another naturally occurring Cas9 from

bacteria called *Francisella novicida*. “We have shown that Cas9 from *Francisella novicida* (FnCas9) can perform genome editing through homology directed repair and this can be used for correction of disease causing mutations,” said Dr. Debojyoti Chakraborty, senior scientist at IGIB, who led the study, while speaking to India Science Wire. “It has extremely high specificity of DNA interrogation and does not tolerate mismatches in the target both under in vivo and in vitro conditions.”

“This protein (FnCas9) has shown negligible binding affinity to off-targets differing by one or more mismatches, rendering it highly specific in target recognition,” the researchers have observed in their study. The technique has been applied to correct DNA derived from patients of sickle cell anemia. “We demonstrate FnCas9-mediated correction of the sickle cell mutation in patient-derived induced pluripotent stem cells and propose that it can be used for precise therapeutic genome editing for a wide variety of genetic disorders,” researchers said.

The research team from IGIB included Sundaram Acharya, Arpit Mishra, Deepanjan Paul, Asgar Hussain Ansari, Mohd. Azhar, Manoj Kumar, Riya Rauthan, Namrata Sharma, Meghali Aich, Dipanjali Sinha, Saumya Sharma, Shivani Jain, Arjun Ray, Suman Jain, Sivaprakash Ramalingam, Souvik Maiti and Debojyoti Chakraborty.

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[Business Line](#)

CSIR-CSMCRI

2nd October, 2019

ભાવનગરની સેન્ટ્રલ સોલ્ટ ઈન્સ્ટીટ્યૂટમાં ઔદ્યોગિક પ્રવાહીમાંથી પોટાશ ખાતર અને શૂન્ય કચરાની પ્રક્રિયાનું સંશોધન

અમદાવાદ ખાતે હરક્યુલસ એવોર્ડ સિનિયર પ્રિન્સિપલ સાયન્ટીસ્ટ જતીન યુનવાલાએ સ્વીકાર્યો

। ભાવનગર (સંદેશ પ્રતિનિધિ) ।

ભાવનગરની સી.એસ.આઈ. આર.-સી.એસ.એમ.સી.આર. આઈ.ને ખર્ચિત ઔદ્યોગિક પ્રવાહીમાંથી પોટાશ ખાતર અને પાણીની પુનઃપ્રાપ્તિ માટે શૂન્ય કચરાની પ્રક્રિયાનાં સંશોધન માટે હરક્યુલસ એવોર્ડ-૨૦૧૯ તાજેતરમાં અમદાવાદ ખાતે ગુજરાત ઈનોવેશન સોસાયટી (જી.આઈ.એસ.) દ્વારા સમારંભમાં એનાયત કરવામાં આવ્યો હતો.

સી.એસ.આઈ.આર.-સી.એસ. એમ.સી.આર.આઈ. વતી એન્જિનિયરીંગ ડિપાર્ટમેન્ટના પ્રોફેસરીંગ અને ડિઝાઈનિંગના સિનિયર પ્રિન્સિપલ સાયન્ટીસ્ટ ડૉ.



જતીન આર. યુનવાલાએ આ સમારંભમાં ઉપસ્થિત રહી એવોર્ડ સ્વીકારેલ હતો.

જીઆઈએસ એવા વ્યક્તિ અથવા સંસ્થાને વાર્ષિક હરક્યુલસ એવોર્ડ આપે છે કે જેણે ઉદ્યોગના ધોરણ

અનુસાર ટૂંકાગાળાના સમયગાળામાં નોંધપાત્ર નવીનતા આપી છે અને ગુજરાતમાં કરવામાં આવેલા કામને પ્રાધાન્ય આપવામાં આવે છે. જીઆઈએસ એ નવીનીકરણ માટે સ્વ પ્રતિજ્ઞા ધરાવતા ૧.૮૫ લાખથી વધુ

નાગરિકોને સુવિધા આપી છે અને તેના લક્ષ્ય માં મુખ્યત્વે મધ્યમ અને સૂક્ષ્મ ઉદ્યોગો, વિદ્યાર્થીઓ, શિક્ષકો, શિક્ષણવિદો અને વિવિધ શાખાના વ્યવસાયિકો છે.

અત્રે ઉલ્લેખનીય છે કે, ૨૬ સપ્ટેમ્બર ૨૦૧૯ ના રોજ સી.એસ. આઈ.આર.ના સ્થાપના દિને ભાવનગરની સી.એસ.એમ.સી. આર.આઈ.ની ખૂબ જ તકનીકી નવીનતા ૨૦૧૯ માટે સી.એસ. એમ.સી.આર.આઈ. ટેકનોલોજી એવોર્ડ ભારતના રાષ્ટ્રપતિ રામનાથ કોવિન્દ અને કેન્દ્રિય મંત્રી ડૉ. હર્ષવર્ધનની ઉપસ્થિતિમાં નવી દિલ્લી ખાતે એનાયત કરવામાં આવ્યો હતો.

Published in:
Sandesh

IMMT comes up with affordable water filter

Sandeep Mishra | TNN

Bhubaneswar: Scientists at the Institute of Minerals and Materials Technology (IMMT), an institute under the Council of Scientific and Industrial Research, have developed an affordable water filter.

Called, Terafil Water Filter, developed by chief scientist Surendra Khuntia, the filter is a low-cost device that purifies impure water and makes it drinkable.

"It is a water purification facility which is sustainable and produced from locally-available material such as red clay, sand and sawdust," a scientist of the institute said.

Senior scientist Debabrata Singh said the water filter provides an efficient treatment of turbid and iron-containing water and provides clean drinking water for domestic and community use. "It is easy to use and very affordable. A 50-litre capacity filter costs just about Rs 650," Singh added.

He said the filter removes 90 to 95% of iron content and 99% suspended particles from the water. "The architecture of the disc ensures a high rate of filtration and long operational life. It



IMMT scientists with water filters in Bhubaneswar

can be fixed with any container for purification of water and is available with different capacities," the scientist added.

Another senior scientist of the institute Jayanta Kumar Pothal said they haven't used any chemical in the filter. "The use of naturally-available materials in the filter makes it more sustainable. It also doesn't require any electricity to function. It has an average life of three years," Pothal said.

Experts said excess iron content in water is harmful and in Odisha the available water contains high degree of iron. "Water with high iron content can cause stomach pain, vomiting, nausea and other health problems. It is never recommended," said P N Sahoo, a city-based doctor.

CSIR-IHBT

2nd October, 2019

आई.एच.बी.टी. ने एन.ए.बी.आई. एवं सी.आई.ए.बी. के साथ किया समझौता



पालमपुर, 1 अक्टूबर (ब्यूरो): अनुसंधान एवं शैक्षणिक विकास के साथ छात्रों और शिक्षाविदों सहित आदान-प्रदान के सहयोग के लिए सी.एस.आई.आर. हिमालय जैवसंपदा प्रौद्योगिकी संस्थान पालमपुर ने राष्ट्रीय कृषि खाद्य जैव प्रौद्योगिकी संस्थान मोहाली और नवोन्मेषी एवं अनुप्रयुक्त जैव प्रसंस्करण केंद्र सी.आई.ए.बी. के साथ संयुक्त रूप से एक समझौते पर हस्ताक्षर किए। सी.एस.आई.आर. आई.एच.बी.टी. के निदेशक डा. संजय कुमार तथा डा. टी.आर. शर्मा, कार्यकारी निदेशक, एन.ए.बी.आई. एवं सी.आई.ए.बी. के मुख्य कार्यकारी अधिकारी के अनुसार ये तीनों संस्थान वैज्ञानिक, तकनीकी और शैक्षणिक गतिविधियों को बढ़ावा देने और सुविधा प्रदान करने के लिए कृषि जैव प्रौद्योगिकी, खाद्य और न्यूट्रस्यूटिकल्स और उद्योग अकादमिक सहभागिता के क्षेत्र में सहयोग करेंगे। संस्थानों के बीच समग्र वैज्ञानिक सहयोग को बढ़ावा देने के लिए पारस्परिक हित के क्षेत्रों के तहत और छात्रों और शिक्षाविदों के आदान-प्रदान और सहयोगी परियोजनाओं को विकसित करने पर भी सहमति हुई।

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Punjab Kesari

CSIR-CBRI

2nd October, 2019

Swachhata Hi Seva 2019 At CBRI: Students Learn About Waste-To-Wealth Technologies



tor, CSIR-CBRI, Roorkee presented a lecture on "Swachhata Hi Seva: Eradicate Single-Use Plastic" and introduced the students the year's campaign theme Plastic Waste Management. He said that the Single Use Plastic is a bane to the environment as this uncollected plastic waste litters about, causing detrimental effect on human beings, animals and the environment at large. He discussed effective measures and technologies to recycle and dispose plastic waste and urged the students to adopt environment-friendly alternatives to plastic.

The students visited the laboratories of the Institute and learnt about CBRI waste-to wealth technologies. Technical Charts illustrating the technologies developed by CSIR-CBRI, Roorkee such as environment friendly alternatives to wood, value added products from waste etc. were explained to the students through intense discussions with scientists at the CBRI Technology Gallery. Demonstration models of rural housing technologies for low cost latrines and waste water disposal system etc at CBRI Rural Technology Park helped students understand the problems of sanitation in the Rural India. In the Polymers, Plastics &

Composites students learnt about waste-to wealth & environment-friendly building materials such as pine needle board, Geo-polymer based bricks etc. During their visit to the Environment Science & Technology laboratory, CSIR-CBRI scientists informed the students about CBRI achievements in the areas of waste management, pollution monitoring and control in process industries related to building materials, such as cement, lime, bricks, stone crushers, etc. In the Organic Building Materials lab, the students learnt about various eco-friendly green building materials such as thermal insulation tiles using vermiculite waste, EPS door shutter, Coir-CNSL board, etc. with the help of product samples.

The excitement level was at an all time high as students had passionate discussions with scientists on the technologies, their fundamental science, possible alternatives, their own innovative ideas to counter global problems of plastic waste management, climate change and sustainable development and career opportunities in various scientific fields at CSIR laboratories.

Roorkee: Central Building Research Institute, Roorkee (CBRI) witnessed a footfall of more than 200 students during "Students for

Swachhta Programme" to observe the Swachhata Hi Seva 2019, a Jan Andolan for Swachhata being organized nation-wide during

September 11- October 02, 2019.

Dr. Atul Kumar Agarwal, Senior Principal Scientist & Jigyasa Programme Coordina-

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The Hawk

CSIR-CBRI

2nd October, 2019

'सिंगल यूज' प्लास्टिक है हानिकारक

उत्तर भारत लाइव ब्यूरो

uttarbharatlive.com

रुड़की। केन्द्रीय भवन अनुसंधान संस्थान, रुड़की में स्वच्छ भारत के लिए विद्यार्थी कार्यक्रम के दौरान 200 से अधिक विद्यार्थियों ने भाग लिया और 11 सितंबर-02 अक्टूबर, 2019 के दौरान राष्ट्रीय जन-आंदोलन स्वच्छता ही सेवा 201 में प्रतिभागिता की। संस्थान के वरिष्ठ प्रधान वैज्ञानिक और जिज्ञासा कार्यक्रम समन्वयक डॉ अतुल कुमार अग्रवाल ने स्वच्छता ही सेवा: एकल-उपयोग प्लास्टिक का उन्मूलन विषय पर एक व्याख्यान प्रस्तुत किया और विद्यार्थियों को इस वर्ष के अभियान विषय प्लास्टिक अपशिष्ट प्रबंधन से परिचित कराया। उन्होंने कहा कि एकल-उपयोग प्लास्टिक जैसे स्ट्रॉ, पॉलिथीन, एकल उपयोग प्लास्टिक की बोतल आदि पर्यावरण के लिए एक बहुत बड़ी समस्या है जो बड़े पैमाने पर मनुष्यों, जानवरों और पर्यावरण पर हानिकारक प्रभाव डालती है।

उन्होंने प्लास्टिक कचरे के पुनर्चक्रण और निपटान के लिए प्रभावी उपायों और प्रौद्योगिकियों पर

**सीबीआरआई में
विद्यार्थियों को अपशिष्ट-
से-मूल्य वर्धित उत्पाद
तकनीकियों के विषय में
दी जानकारी**

चर्चा की और विद्यार्थियों से प्लास्टिक के स्थान पर पर्यावरण अनुकूल विकल्प जैसे कपड़े के थैले, स्टील के बोतल, आदि अपनाने का आग्रह किया।

उन्होंने विद्यार्थियों को प्रोत्साहित करते हुए कहा कि प्रत्येक विद्यार्थी वैश्विक स्तर पर भारत का प्रतिनिधित्व करने की क्षमता रखता है। अतः विद्यार्थी अपनी योग्यता पर विश्वास रखते हुए पूर्ण लगन के साथ परिश्रम करें और विश्व कल्याण हेतु नवीन व हरित प्रौद्योगिकियों का विकास कर देश का नाम उज्ज्वल करें। विद्यार्थियों ने संस्थान की प्रयोगशालाओं का दौरा किया और सीबीआरआई अपशिष्ट-से-उपयोगी उत्पाद तकनीकियों के विषय में जाना। संस्थान की प्रौद्योगिकी दीर्घा में विद्यार्थियों को सीएसआईआर-सीबीआरआई, रुड़की द्वारा विकसित



तकनीकियों जैसे लकड़ी के पर्यावरण-अनुकूल विकल्प, अपशिष्ट से मूल्य वर्धित उत्पाद आदि को तकनीकी चार्टों की सहायता से समझाया गया। सीबीआरआई ग्रामीण प्रौद्योगिकी पार्क में कम लागत वाले शौचालय और अपशिष्ट जल निपटान प्रणाली आदि के लिए ग्रामीण आवास प्रौद्योगिकियों के प्रदर्शन मॉडलों ने विद्यार्थियों को ग्रामीण भारत में स्वच्छता की समस्याओं को समझने में मदद की।

पॉलिमर, प्लास्टिक और

कम्पोजिट प्रयोगशाला में विद्यार्थियों ने पाइन नीडल बोर्ड, जियोपॉलिमर आधारित ईंटों आदि जैसे अपशिष्ट से मूल्य वर्धित और पर्यावरण-अनुकूल निर्माण सामग्रियों के बारे में सीखा। पर्यावरण विज्ञान और प्रौद्योगिकी प्रयोगशाला में सीबीआरआई के वैज्ञानिकों ने विद्यार्थियों को सीमेंट, चूने, ईंटों, स्टोन क्रशर और निर्माण सामग्री आदि से संबंधित उद्योगों में अपशिष्ट प्रबंधन व प्रदूषण निगरानी के विषय में जानकारी दी।

विशेष रूप से प्लास्टिक और निर्माण सामग्री प्रयोगशाला में

विद्यार्थियों ने उत्पाद नमूनों की मदद से वर्मीक्यूलाईट कचरे का उपयोग करके थर्मल इंसुलेशन टाइल्स, ईपीएस दरवाजे के शटर, कॉयर-सीएनएसएल बोर्ड आदि जैसी हरित निर्माण सामग्रियों के विषय में जाना। कार्यक्रम के दौरान विद्यार्थियों ने पूर्ण उत्साह के साथ वैज्ञानिकों के साथ प्रौद्योगिकियों के मौलिक विज्ञान, संभावित विकल्प तथा प्लास्टिक कचरे के प्रबंधन, जलवायु परिवर्तन और सतत विकास जैसी वैश्विक समस्याओं उत्पन्न होती है।

Published in:

Uttar Bharat

New nanomolecule for breast cancer therapy shows promise

CSIR-NEIST

1st October, 2019

Researchers at Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, and CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, have developed a new molecule that could potentially be used as a photosensitiser in a non-invasive cancer treatment known as photodynamic therapy. Photodynamic therapy is an emerging treatment method considered safer than conventional techniques. It involves use of chemical substances called photosensitisers that can be activated by light to target and kill cancer cells. Photosensitisers selectively accumulate in malignant cells. When a laser light activates them, the chemicals generate highly reactive oxygen ions, called reactive oxygen species. These ions create oxidative stress in tumour cells thereby leading to their natural death via chemical and biological mechanisms. The major challenge of photodynamic therapy lies in developing photosensitisers that have increased solubility in biological media.

In the new study, researchers have developed zinc-based picolyl porphyrin nano-molecule that shows promising results. Preliminary tests conducted on breast cancer cells indicate its potential as an effective photosensitiser molecule. The team has developed the new molecule by inserting zinc ions into a nanostructure made of two other molecules called picolylamine and porphyrin. “By inserting zinc ions to picolyl-porphyrin nanostructure we found an enhanced oxygen ion generation and photodynamic activity,” explained Betsy Marydasan, first author of the study from Rajiv Gandhi Centre for Biotechnology, while speaking to India Science Wire. Morphological and structural analysis using techniques such as Scanning Electronic Microscopy and tunnelling electron microscopy have established the structural strength of the nanostructure. Photo-physical studies showed that the molecule had enhanced water solubility and was found to generate 59% reactive oxygen species. Overall, the new molecule exhibited a better effect compared to conventional photosensitisers such as photofrin and foscan.

Standard biological assays were conducted on breast cancer, colon cancer and cervical cancer cells. The new molecule exhibited maximum efficiency in killing breast cancer cells. “Our photosensitiser molecule showed intense fluorescence in the cytoplasmic area of the cell, that is, outside the nucleus. PARP cleavage assay established that the cell death happened via apoptosis. We are now looking to test the molecule in animal models,” said Dr Asha Nair, leader of the study team.

The team included Rajashree R Nair and P S Saneesh Babu (Rajiv Gandhi Centre for Biotechnology) and Danaboyina Ramaiah (CSIR-North East Institute of Science and Technology).

The study results have been published in journal ACSOmega.

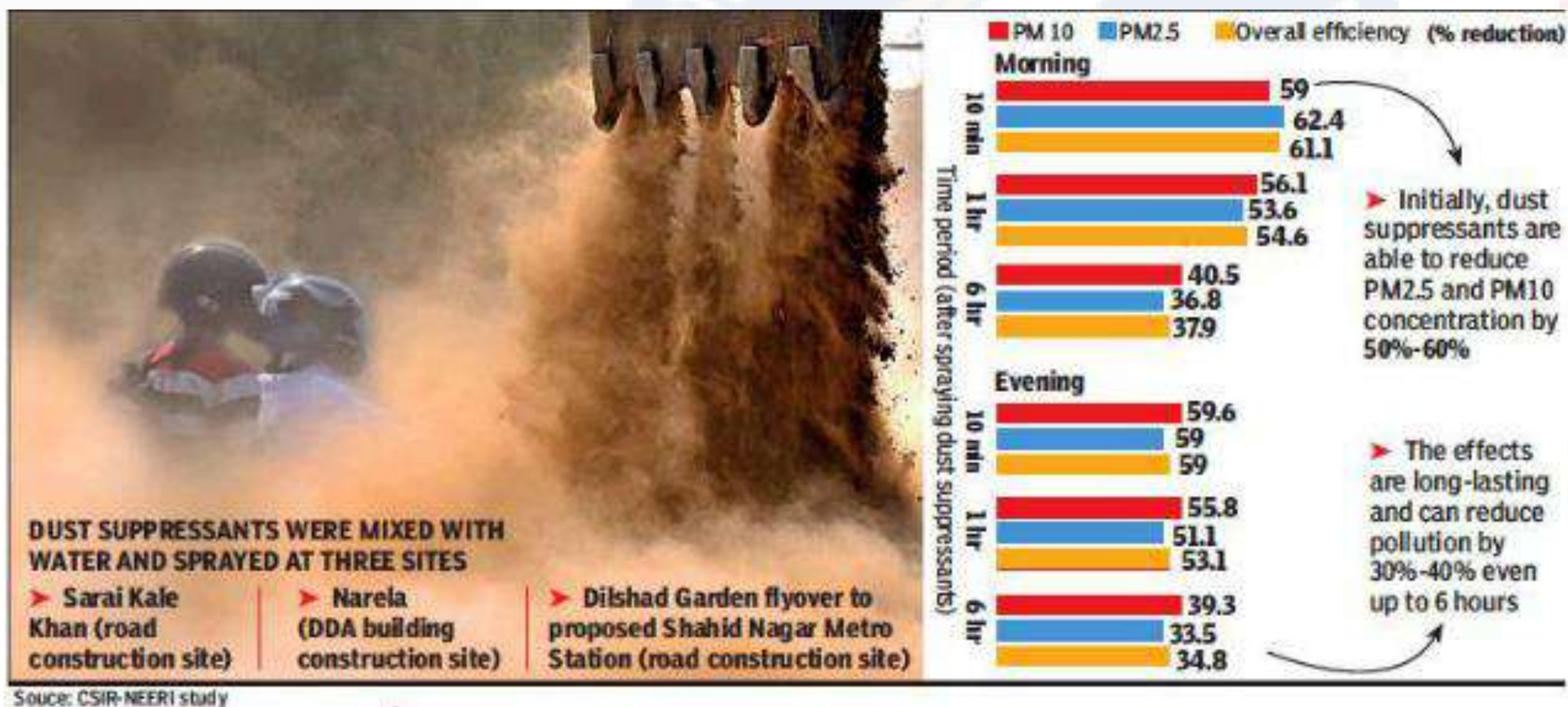
Published in:
[Business Line](#)

Delhi: Here's how impact of dust can be halved

CSIR-NEERI

1st October, 2019

Dust generated by construction activities is a major component of polluting material in the capital. One way to control the problem is to use dust suppressants. A CSIR-NEERI study, carried out recently to determine the effectiveness of such compounds, indicated that the use of such materials could lead to the concentration of respirable PM_{2.5} and coarser PM₁₀ particles at construction sites falling 30-40% for up to six hours.



Dust suppressants are varied substances such as water, salts, vegetable oils, chemical compounds and synthetic polymers. They work by changing the physical properties of the soil surface.

The study, facilitated by the Environment Protection Fund monitored by the Central Pollution Control Board, identified a site at Sarai Kale Khan where a road was being constructed, one at Narela where a building was being constructed and a third at Dilshad Garden where a flyover was coming up. The study said that at each site, particulate matter concentration in the air was monitored before and after the application of dust suppressants twice a day for a period of three days. PM₁₀, PM_{2.5} and PM₁ concentrations were monitored. The study determined that after application of dust suppressants, PM_{2.5} and PM₁₀ levels were reduced by up to 60%, with the effect lasting up to six hours. The overall reduction in PM_{2.5} and PM₁₀ particles was 30-40% from the baseline. In the mornings, the overall reduction in PM_{2.5} particles was found to be 37.9%, while in the evenings, the figure was 34.8%. For PM₁₀, the fall was 40.5% in the mornings and 39.3% in the evenings.

Prashant Gargava, member secretary, CPCB, disclosed that Delhi Pollution Control Committee has been advised to pass this information to agencies involved in construction activities. “Dust suppressants can be applied to excavated earth surfaces, construction and demolition waste stockpiles and at access roads of construction sites,” said Gargava. In a study carried out by TERI last year, the contribution of dust in particulate matter concentration was found to be 16-38% in both winter and summer seasons. A DPCC official said that 41 constructors had been fined Rs 1.8 crore so far in a special drive undertaken to identify sites not taking the required precautions to prevent dust pollution. “We have also suggested to them that they should use dust suppressants,” the official told TOI. The DPCC official added, “Sites not taking corrective measures within three days will be fined even higher and may even be shut down.”

Published in:
[The Times of India](#)

Scientists excavate ‘ancient river’ in Uttar Pradesh

CSIR –NGRI

1st October, 2019

River unearthed

A team of scientists have discovered an “ancient buried river” that links the Ganga and the Yamuna. The map shows the possible course of the paleochannel



The paleochannel linked the Ganga and the Yamuna near Prayagraj

The Union Water Ministry has excavated an old, dried-up river in Prayagraj (formerly Allahabad) that linked the Ganga and Yamuna rivers. The aim is to develop it as a potential **groundwater** recharge source, according to officials at the National Mission for Clean Ganga (NMCG), a body under the Union Jal Shakti Ministry that coordinates the cleaning of the Ganga. The “ancient buried river” as it was described at a

conference organised by the Ministry, is around 4 km wide, 45 km long and consisted of a 15-metre-thick layer buried under soil. According to Executive Director, NMCG, D.P. Mathuria, the discovery was made last December by a team of scientists from the CSIR-NGRI (National Geophysical Research Institute) and the Central Groundwater Board during a helicopter-borne geophysical survey covering the Prayagraj and Kaushambi region in Uttar Pradesh. These paleochannels reveal the course of [rivers](#) that have ceased to exist. The newly discovered river, according to Mr. Mathuria, was a “buried paleochannel that joins the Yamuna river at Durgapur village, about 26 km south of the current Ganga-Yamuna confluence at Prayagraj. The genesis of the palaeochannel’s discovery followed a 2016 report of a seven-member committee, headed by Professor K.S. Valdiya of the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), commissioned by the Water Resources Ministry.

This report concluded that evidence from palaeochannels suggested that the mythological Saraswati river did indeed exist. They claimed to have based their conclusions on reports and maps of palaeochannels in north India and a separate, ongoing project by the Central Groundwater Board to map the aquifers (extremely deep stores of groundwater) of India.

“Knowledge on subsurface connectivity between Ganga and Yamuna rivers will play a very crucial role in planning of Ganga cleaning and protecting safe groundwater resources,” Mr. Mathuria said.

Published in:
[The Hindu](#)

CSIR-NGRI

1st October, 2019

26 years on, the Latur quake has taught us many lessons

Exactly 26 years ago, more than 10,000 people did not and would never again wake up from their sleep in the Latur region of Maharashtra, as a massive 6.4 magnitude earthquake shook the ground under them. The villagers were fast asleep after celebrating Ganesh Chaturthi.

The September 30, 1993, Killari-Latur earthquake that struck around 3.45 am, is now considered a 'Watershed' in Indian seismological studies. It has permanently led to the upgradation of seismological observatories from analog (charts) to digital. Today, the National Centre for Seismology (NCS), under the India Meteorological Department (IMD), has a string of 115 digital observatories.

Change in outlook

In short, the 10,000 lives lost in one of the worst earthquakes of the 20th century in India permanently changed the outlook of earth scientists, administrators and policy makers towards saving lives, says D Srinagesh, Chief Seismologist at the CSIR-NGRI (National Geophysical Research Institute), Hyderabad.

The earthquake shook the establishment into immediate action and the overall upgradation initiative launched to equip all observatories with digital instrumentation. Since, it is not easy to predict earthquakes, the emphasis was on strengthening the monitoring, disaster mitigation and preparedness areas.

Published in:
The Hindu

CSIR-CSMCRI

ભાવનગરમાં CSIRના સ્થાપના દિન ઉજવણી : ૪૩ શાળા કોલેજના ૧૩૦૦ છાત્રોએ CSMCRIની મુલાકાત લીધી



ઈ.સ. ૧૯૪૨માં રૂઢી સપ્ટેમ્બરે ભવિ દિલ્હી ખાતે સ્થાપાયેલ વૈજ્ઞાનિક તથા ઔદ્યોગિક સંશોધન પરિષદ (સી.એસ.આઈ.આર.)ના સ્થાપના દિનની સાથે શુક્રવારે ભાવનગરમાં સેન્ટ્રલ સોલ્ટ ઇન્સ્ટીટ્યૂટ (સી.એસ.એમ.સી.આર.આઈ.) ખાતે સુપ્રસિદ્ધ વૈજ્ઞાનિક પ્રો. રમેશ સોન્નીની પ્રેરક ઉપસ્થિતિમાં શાળાકીય ઉંમરના છાત્રોએ આ સમયસરે ભાવનગર શહેર અને જિલ્લાની ૪૩ શાળા-કોલેજોના ૧૩૦૦થી વધુ છાત્રોએ સેન્ટ્રલ સોલ્ટ ઇન્સ્ટીટ્યૂટની મુલાકાત લીધી હતી. અને સીએસઆઈઆરના આ પ્રતિષ્ઠિત લેબોરેટરીઓ આપેલ રાષ્ટ્રીય સ્તરના પ્રદાન અને વૈજ્ઞાનિક સંશોધનને જાણવાની તક પ્રાપ્ત કરી હતી. (તસવીરો : મુંદન મકવાણા)

CSIRના સ્થાપના દિને દિલ્હી ખાતે રાષ્ટ્રપતિ કોવિદજીની અધ્યક્ષતામાં યોજાયો સમારોહ
ભાવનગરની સેન્ટ્રલ સોલ્ટ ઇન્સ્ટીટ્યૂટના
ચાર વૈજ્ઞાનિકોને પ્રતિષ્ઠિત એવોર્ડ અર્પણ

સુપ્રસિદ્ધ વૈજ્ઞાનિક પ્રો. રમેશ સોન્નીની પ્રેરક ઉપસ્થિતિમાં સમારોહ
સરકારી શાળાઓના બાળકોમાં વિજ્ઞાનની
ઋચિ કેળવવાનો પ્રયાસ : ડો. શ્રીનિવાસન
કર્મચારીઓ અને વિવિધ સ્પર્ધાઓના વિજેતાઓનું સન્માન

ડો. દાસ CSMCRIના ડિરેક્ટર : એક સિનિયર પ્રિન્સિપલ અને બે પ્રિન્સિપલ સાયન્ટીસ્ટ

ભાવનગર (સંદેશ પ્રતિનિધિ) : આજે સી.એસ.આઈ.આર.ના સ્થાપના દિનની ઉજવણીના અવસરે

નવી દિલ્હી ખાતે રાષ્ટ્રપતિ સમનાથ અધ્યક્ષતામાં આયોજિત સમારોહમાં કોવિદજી અને વિજ્ઞાન અને ટેકનોલોજી ભાવનગરના સેન્ટ્રલ સોલ્ટ એન્ડ મરીન કેમિકલ્સ રીસર્ચ ઇન્સ્ટીટ્યૂટના ત્રણ

વૈજ્ઞાનિકોને પ્રતિષ્ઠિત એવોર્ડથી નવાજવામાં આવ્યા હતા.

તકનીકી વિકાસ, સ્થાનાંતરણ અને વ્યાપારીકરણ માટેના પ્રવિ-રિસિલિયનરી ઈન-સાઉન્ડ ટીમના પ્રયત્નો અને બાક્ય ક્રિયા પ્રતિક્રિયાને પ્રોત્સાહિત કરવા માટે ૧૯૯૦માં સીએસઆઈઆર ટેકનોલોજી એવોર્ડની સ્થાપના કરવામાં આવી હતી. આ વર્ષે સી.એસ.આઈ.આર. સી. એસ.એમ.સી.આર.આઈ.ની તકનીકીને પ્રખ્યાત અને ઉચ્ચ પ્રતિષ્ઠિત સીએસઆઈ આર ટેકનોલોજી એવોર્ડ - ૨૦૧૯ ઈનોવેશન કેટેગરીમાં ભાવનગરની CSMCRIના વૈજ્ઞાનિકો પનુપ મેની, ડો. સુખલા મેની અને ડો. સોમ્યા હલદાર, CSMCRIના ડિરેક્ટર ડો. અમિતાબા દાસ અને અમદાવાદની કેમપ્રોસેસ સીસ્ટમના બીજાનિક ભાગીદાર જયેશ પરીખને પ્રાપ્ત થયેલ છે.

અનુરંધિત પાના નં.૧૩

ભાવનગર (સંદેશ પ્રતિનિધિ) :

ભાવનગરમાં સેન્ટ્રલ સોલ્ટ ઇન્સ્ટીટ્યૂટ ખાતે સી.એસ.આઈ. આર.ના સ્થાપના દિને નવી દિલ્હીના પ્લાન્ટ જિનોમ રીસર્ચના નિયામક અને પ્લાન્ટ બાયોટેકનોલોજી ક્ષેત્રના એક મૂળ જ જાણીતા વિદ્વાન અને પ્રખ્યાત વૈજ્ઞાનિક પ્રો. રમેશ વી. સોન્ની અને પદ્મભૂષણ પ્રો. સુખદેવજીની પ્રેરક ઉપસ્થિતિમાં યોજાયેલ સમારોહમાં પ્રો. સોન્નીએ પાક સુધારણામાં બાયોટેકનોલોજીની ભૂમિકા વિશે વાત કરી હતી. આ અવસરે એવોર્ડ વિતરણ સમારોહ યોજાયો હતો. જેમાં સંસ્થાના નિવૃત્ત અને સી.એસ.આઈ.આર.ની ૨૫ વર્ષ સેવા પૂર્ણ કરનારાઓને સન્માનિત કરવામાં આવ્યા હતા તથા વિવિધ સ્પર્ધાઓમાં વિજેતા બનેલા સીએસએમસીઆરઆઈના વોર્ડ અને સ્ટાફને એવોર્ડ પણ અપવામાં આવ્યા હતા.

આ અવસરે ભાવનગર સ્થિત સંશોધન પ્રયોગશાળા સીએસએમ સીઆરઆઈ દ્વારા જાહેર જનતા અને શાળાના વિદ્યાર્થીઓ માટે એક દિવસ માટે પ્રદર્શન યોજવામાં આવ્યું હતું. આ પ્રદર્શનમાં ભાવનગર જિલ્લાની ૪૩ સરકારી શાળાઓ અને કોલેજોના ૧૩૦૦ જેટલા વિદ્યાર્થીઓએ સક્રિયપણે ભાગ લીધો હતો. તેઓએ સંસ્થામાં ચાલી રહેલી વિવિધ સંશોધન પ્રવૃત્તિઓને સમજવા માટે યુવા પીએચડી વિદ્વાનો અને પ્રયોગશાળાના વૈજ્ઞાનિકો સાથે નિકટવર્તી વાતચીત કરી હતી. વિદ્યાર્થીઓ ઉત્સાહમાં હતા અને ખૂબ જોમ સાથે નવી વિભાવનાઓ સીખવા માટે તૈયાર હતા. ભાવનગરના સીએસએમસીઆરઆઈ ખાતેનું આ અનુરંધિત પાના નં.૧૩

ટેકનોલોજી પર્યાવરણીય સમસ્યાને આંશિક આત્મનિર્ભર બનાવવામાં મદદરૂપ

સી.એસ.આઈ.આર.-સી.એસ.એમ.સી.આર.આઈ. ખર્ચિત પ્રવાહીમાંથી પોટાશ ખાતર, અને પાણીની પુનઃપ્રાપ્તિ માટે શુભ્ય કચરાની પ્રક્રિયા લાંબા સમયથી ચાલતી પર્યાવરણીય સમસ્યાને આંશિક આત્મનિર્ભરતા પ્રાપ્ત કરવાની તકમાં પરિવર્તિત કરે છે. આ શુભ્ય પ્રવાહી ક્ષાલ-સુસંગત પ્રક્રિયા થોરડીના દરવાજા સામનારિત પ્રવાહીમાંથી માર્કેટિંગ કિંમતો (દા.ત. પોટાશ ખાતર, પલ્લુ સાફકર બાઈન્ડર, ઉચ્ચ સંપાદીક્ષેત્રવાળા સક્રિય કાર્બન ઇગરેટ) ઉત્પન્ન કરે છે, જેના પાછો પુનઃપ્રાપ્ત થાય છે અને રિસાયકલ કરવામાં આવે છે. સી.સી.આઈ.આર. - સી. એસ.એમ.સી.આર.આઈ.ની રાષ્ટ્ર સમન્વય તકનીકના સાધારે, વિશ્વની પહેલી વ્યાપારી પ્લાન્ટ જેમાં ખાતર નિકાસ હુકમ (FPO) કક્ષાનો પોટેશિયમ નાઇટ્રેટ બનાવતો પ્લાન્ટ સીએસઆઈ સીઆરઆઈ કિસ્કોરી સિમિટેડ (વાણિજ્યનગર, મહારાષ્ટ્ર) ખાતે સ્થાપવામાં આવેલ છે.

ટેકનોલોજીથી ખેડૂતો, ઉદ્યોગ અને સરકારની આવક વૃદ્ધિ

તકનીકના મુખ્ય કાર્યદાઢમાં સ્વદેશી પોટાશ ખાતર, જળ સંસાધનોનું સરક્ષણ, ઘણેનોલના ઉત્પાદનમાં વધારો, પોટાશ સાચાત જિલ્લામાં ઘટાડો, ખેડૂત, ઉદ્યોગ અને સરકારની આવકની વૃદ્ધિ છે. આ તકનીકીને અપનાવવાથી ભારતીય નિસ્સંદેહ દોઢની કાર્યકારી નાણાકીય અને ઇકોલોજીકલ સ્થિતિમાં નોંધપાત્ર સુધારો થશે. આ તકનીક મુખ્ય રાષ્ટ્રીય મિશન 'મેક ઇન ઇન્ડિયા', 'સ્વચ્છ ભારત' અને 'નમો ગેંગે' સાથે સારી રીતે સંકળાયેલી છે અને દેશને સંયુક્ત રાષ્ટ્રના રક્ષા વિકાસ હક્કો - ૨૦૩૦ પ્રાપ્ત કરવામાં મદદ કરશે.

Published in:
Sandesh

CSIR-CSIO

पर्यावरण संरक्षण

प्रदूषण पर काबू पाने के लिए सीएसआईओ के वैज्ञानिकों ने बनाई खास डिवाइस, इलेक्ट्रोस्टैटिक डस्ट मीटीगेशन डिवाइस से तलाशा समस्या का समाधान

शहरों में बढ़ रही स्मॉग की समस्या से बचाएगी आर्टिफिशियल रेन

वीणा शिवासे • पटना

शहरों में बढ़ रही स्मॉग की समस्या का निदान अब इलेक्ट्रोस्टैटिकली चार्ज्ड आर्टिफिशियल रेन से होगा। इससे स्मॉग फ्री इंडिया का सपना साकार करने में मदद मिलेगी। पानी की बूंदों को इलेक्ट्रोस्टैटिकली चार्ज करके स्मॉग पर छला जाएगा। इससे स्मॉग में मिले धूल के कण और अन्य रसायन हल्के होकर गिर जाएंगे। यह संभव तो पाया है चंडीगढ़ स्थित सेंट्रल साइंटिफिक इंस्टीट्यूट्स ऑर्गनाइजेशन (सीएसआईओ) के वैज्ञानिकों के प्रयासों से। उन्होंने इलेक्ट्रोस्टैटिक डस्ट मीटीगेशन डिवाइस तैयार किया है।

वैज्ञानिकों का दावा है कि इस डिवाइस की मदद से कम पानी का प्रयोग कर बेहद कम समय में स्मॉग पर काबू पाया जा सकेगा। डिवाइस बनाने वाले सीएसआईओ के सीनियर साइंटिस्ट डॉ. मनोज कुमार पटेल ने बताया कि अब तक इस समस्या के समाधान के लिए कन्वेंशनल मशीनों का प्रयोग किया जाता है, जिसमें पानी की बड़ी बूंदों का प्रयोग किया जाता है। इसमें पानी की खपत भी ज्यादा होती थी और परिणाम भी



पर्यावरण संरक्षण

धूल के हल्के कणों को हवा में जमने से रोकेगा डिवाइस, स्मॉग से होने वाली बीमारियों से लोगों का होगा क़ाबू

संतोषजनक नहीं मिलता। क्योंकि पानी की बड़ी बूंदें स्मॉग पर बेअसर साबित होती हैं। इलेक्ट्रोस्टैटिक डस्ट मीटीगेशन डिवाइस की मदद से जो भी पानी प्रयोग किया जाएगा वह इलेक्ट्रो चार्ज होगा और नैनो तकनीक की तर्ज पर सीधे टारगेट पर चार करेगा।

इलेक्ट्रो चार्ज पानी के संपर्क में आने पर स्मॉग में मिले धूल और अन्य रसायनिक कण हल्के हो जाएंगे और हवा में टकरने की बजाय नीचे गिर जाएंगे।



चंडीगढ़ : इलेक्ट्रो स्टैटिक डस्ट मीटीगेशन डिवाइस • प्रयोग

स्मॉग क्या है : स्मॉग वायु प्रदूषण की एक स्थिति है। गাড়ियों और औद्योगिक कारखानों से निकलने वाले जहरीले धुएँ में उपस्थित राख, गंधक और अन्य हानिकारक रसायन जब कोहरे के संपर्क में आते हैं तो स्मॉग बनता है। यह सांस और अन्य क्रॉनिक बीमारियों का कारण बनता है। इन बीमारियों से बचाने के लिए यह डिवाइस कारगर साबित होगा।

सबके लिए खतरनाक

बच्चों के विकसित हो रहे फेफड़े को कमजोर करता है। हार्ट डिजिज और श्वसन के मरीजों के लिए बेहद खतरनाक है। कुछ लोगों में इसकी वजह से हार्ट



और लग डिजिज होने का खतरा तेजी से बढ़ता है। एलर्जी से प्रभावित लोग, गर्भवती महिलाओं और वृद्धों को भी सावधान रहने की जरूरत है। स्मॉग पीवो, और जानवरों तक के लिए हानिकारक है।

स्मॉग से होने वाली बीमारियाँ

स्मॉग के दौरान छाती में जलन, खासी, निमोनिया, सांस लेने में दिक्कत, आंखों में जलन, ज्यादा बका हुआ महसूस करना, शिर में दर्द, कम ऊर्जा, दाबबूझ हो सकती है।



मौजूदा समय में स्मॉग से बचाव के लिए देश में ऐसा कारगर उपाय संभव नहीं है। ऐसी स्थिति में स्मॉग फ्री इंडिया को सफल बनाने में यह डिवाइस एक परखन साबित होगा।

— डॉ. मनोज कुमार पटेल, सीनियर साइंटिस्ट सीएसआईओ



Published in:
Dainik Jagran

CSIR-CSIO

Quakes difficult to predict, says scientist

TRIBUNE NEWS SERVICE

CHANDIGARH, SEPTEMBER 23

A two-day national conference on 'Earthquake: Investigation and Instrumentation' began at the Central Scientific Instruments Organisation (CSIO) here today.

The conference is a part of the institute's diamond jubilee celebrations. Dr Kalachand Sain, Director, Wadia Institute of Himalayan Geology, Dehradun, was the chief guest. He said: "We are able to understand earthquakes scientifically, but we are unable to predict them due to the subsurface complexity of Earth. Hence, concerted efforts are needed to delineate the subsurface and monitor the changes in the Earth's physio-chemical



Dr Kalachand Sain, Director, Wadia Institute of Himalayan Geology, Dehradun, inaugurates a conference in Sector 30, Chandigarh, on Monday. TRIBUNE PHOTO: RAVI KUMAR

properties through state-of-the-art instrumentation and advanced data processing models."

Dr N Gopalakrishnan, Director, Central Building Research Institute, said it was important that seismic events and the response of structures to these seismic

events was recorded and analysed.

Prof RK Sinha, Director, CSIO, said earthquake monitoring has been one of the thrust areas of the CSIO. "Besides routine seismic monitoring, the CSIO is now diversifying into new areas for strategic and tactical

applications. The study of seismic perturbations is being exploited to help the defence forces in detecting enemy activity on the border. The technology is also being used to prevent accidents in railways by detecting elephant movement in national parks and making Delhi Metro safer by providing real-time earthquake detection and loss prevention transduction," he said.

All members of the CSIO, who have contributed significantly to the field of seismic research, were felicitated during the inauguration of the conference. A plantation drive was also organised on the occasion to stress upon the CSIO's commitment towards environmental preservation.

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CSIR-CSIO

‘Can understand, not predict earthquakes’

Chandigarh: Inaugural session of ‘National Conference on Earthquake: Investigation & Instrumentation’ (NCEII, 2019) was held at Central Scientific Instruments Organisation (CSIO) on Monday.

Kalachand Sain, director, Wadia Institute of Himalayan Geology, Dehradun, was the chief guest. In his inaugural address, he said, “Though we are able to understand earthquakes scientifically, we are unable to predict them due to complexity of earth. He said the conference will serve to bridge the gaps of our understanding to provide

realizable solution.”

Dr N Gopalakrishnan, director Central Building Research Institute, who was the guest of honour showed interest in the seismological observatory established in CSIO.

Prof R K Sinha, director, CSIO, in his inaugural address said that earthquake monitoring has been one of the thrust areas of CSIO. Besides routine seismic monitoring in its well established seismic observatories, CSIO is now diversifying into new niche in this technology for strategic and tactical applications.

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CSIR-IMMT

Exhibition at IMMT Bhubaneswar

Bhubaneswar: The Institute of Minerals and Materials Sciences (IMMT) Bhubaneswar on Thursday observed an Open Day for the general public and hold an exhibition as part of the 77th foundation day celebrations of its parent body, the Council of Scientific and Industrial Research (CSIR) in the city.

IMMT is an institute under CSIR. The institute during the Open Day and exhibition demonstrated its research work to visitors and senior scientists of the institute answered queries posed to them.

Attending the event, Governor Ganeshi Lal said CSIR laboratories are playing a pivotal role in producing a vibrant culture in the field of research and innovation. "The CSIR is working for the prosperity of the society," Lal said. TNN

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The Times of India

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