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India Successfully Cultivates Anti-Malarial Plant 'Artemisia'

CSIR-CIMAP

14th July, 2022

The artemisia plant, which is used to develop artemisinin (drug) and its derivatives for treating acute malaria and parasitic worm (helminth) infections, is now been cultivated in India, Earlier the country was heavily reliant on China, which is the largest and natural grower of artemisia .

"Because the artemisia plant is primarily found in China, it is used to prepare artemisinin and export it to other countries." India was also reliant on China, but extensive research by the CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP) resulted in the development of a new species with a high artemisinin concentration of 1.2 percent. The chemical extracted from the plant, which comes in over 200 varieties, is used to make artemisinin, which is then used to make drugs for meningitis treatment. In a recent technology transfer programme, Prabodh Kumar Trivedi, director of CSIR-CIMAP, stated, "This plant is proving to be life-saving for meningitis patients."

This variety will benefit both farmers and industries involved in Artemisia cultivation/business, according to a report published in the journal of medicinal and aromatic plant sciences. The industry may benefit by a 20 percent reduction in production costs.

It was demonstrated that cultivating 'artemisia annua' provides a high return to farmers (65,000 per hectare) in a short period of about four months. This drug is currently being exported to several countries, including Nigeria, Ghana, the Democratic Republic of the Congo, Kenya, Zambia, Malawi, Rwanda, Myanmar, and Cambodia.

CSIR-CIMAP, Lucknow, recently signed a memorandum of understanding (MoU) with Chennai-based Sattva Vaid Natures Global Pvt Ltd for anti-malarial plant artemisia cultivation and processing technology. Under the terms of the agreement, company representatives will be trained in the technology of extracting artemisinin from the cultivation of artemisia crop (Artemisia Annua) from high-quality seeds of the CIM-Sanjeevani variety, with the assistance of CSIR-CIMAP.

CIM-Sanjeevani is the result of extensive breeding work over the last 12 years. According to the Journal, it was created through poly cross progenesis between two existing varieties, Jeevan Raksha and CIM Arogya.

"The company would cultivate artemisia on a contract basis with farmers." The corporation will purchase farmers' vegetables at fixed prices, resulting in higher profits for farmers," said Shrenik Modi, director of M/s Sattva Veda Natures Global Private Limited Chennai.

The contract was signed by Naresh Kumar, administrative officer of CSIR-CIMAP, and Shrenik Modi, director of Sattva Ved Natures Global Pvt Ltd. The MoU was then exchanged between Prabodh Kumar Trivedi, director of CSIR-CIMAP, Lucknow, and Shrenik Modi, director of M/s Sattva Ved Natures Global Pvt Ltd, Chennai.

Published in:
Krishijagran

CRSI Bronze medal to Dr Swapnali Hazarika of Jorhat, Assam

CSIR-NEIST

14th July, 2022

JORHAT: Dr Swapnali Hazarika, Principal Scientist, and Group Leader of the Chemical Engineering Group of CSIR-North East Institute of Science And Technology (CSIR-NEIST), Jorhat, Assam has been selected for the prestigious Chemical Research Society of India (CRSI) bronze medal 2023 for her significant contribution in the field of Chemical Sciences.

The award was announced in the 29th CRSI National Symposium in Chemistry (CRSI-NSC-29) held in Indian Institute of Science Education and Research Mohali from July 7-9 under the auspices of the Chemical Research Society of India (CRSI). Her area of research interest includes Membrane Science & Technology: Design and Development of membrane for different applications

The Chemical Research Society of India (CRSI) was established in 1999 as part of the 50th anniversary celebrations of the country's independence. Currently, CRSI represents more than 3000 lifetime members, who participate in the study, practice, teaching and promotion of Chemistry. The main objectives of the CRSI are to recognize, promote and foster talent in Chemistry and Chemical Sciences and to improve the quality of Chemical Education at all levels, stated a press release.

Published in:

Sentinel Assam

IISc develops new mechanism to inactivate SARS-CoV-2

CSIR-IMTECH

13th July, 2022

Scientists at the Indian Institute of Science (IISc), Bengaluru in collaboration with researchers from the CSIR-Institute of Microbial Technology, have reported the design of a new class of synthetic peptides that can not only block the entry of SARS-CoV-2 virus entry into cells but also clump the virions (virus particles) together, reducing their ability to infect. This binding was further characterised extensively by cryo-electron microscopy (cryo-EM) and other biophysical methods.

The research was supported under the COVID-19 IRPHA call of SERB Science and Engineering Research Board (SERB), a statutory body of the Department of Science and Technology (DST).

The team tested the peptide for toxicity in mammalian cells in the lab and found it to be safe. When hamsters were dosed with the peptide and subsequently exposed to a high dose of SARS-CoV-2, they showed decreased viral load as well as much less cell damage in the lungs compared to hamsters exposed only to the virus, demonstrating the promise of this class of peptides as antivirals.

The researchers believe that with minor modifications and peptide engineering, this lab-made mini protein could inhibit other protein-protein interactions as well.

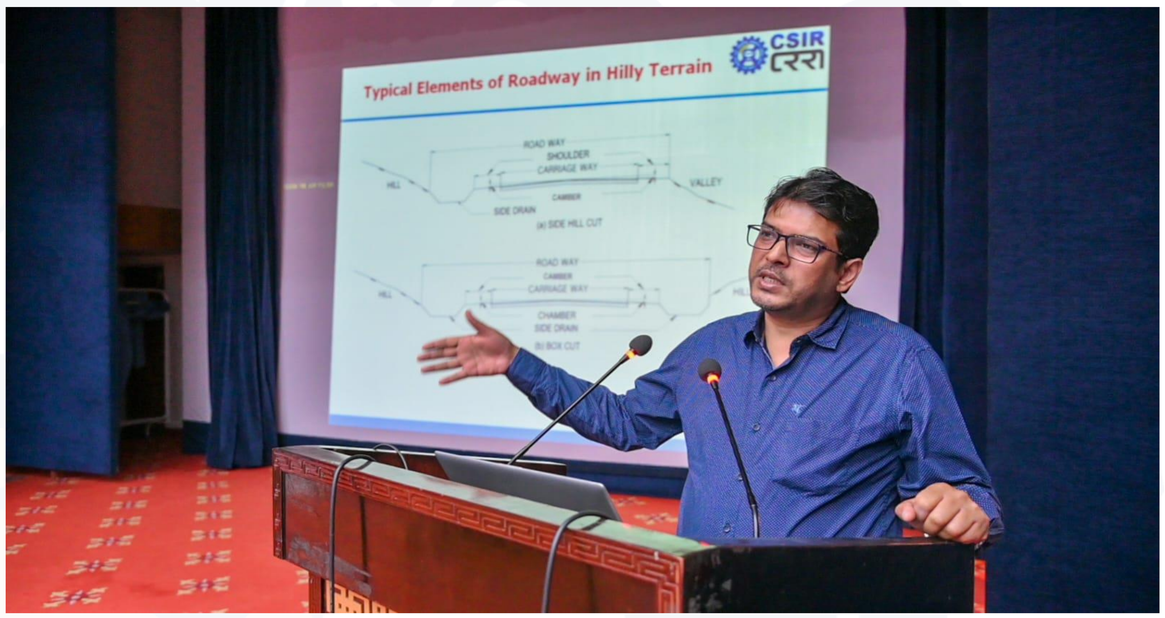
Published in:
Biospectrumindia

2-day workshop on advanced technologies, plastic waste use in road construction begins in Kargil

CSIR-CRRI

13th July, 2022

Kargil, July 11, 2022: Rural Development and Panchayat Raj Department (RD&PRD) UT Ladakh in collaboration with CSIR-CRRI today started a training program on Customized Capacity Building on advance technologies, use of waste plastic in road construction and road safety measures in Ladakh.



The workshop was inaugurated today at Auditorium Hall Kargil in presence of Executive Councilor for RD&PRD in LAHDC Kargil Er Phunsok Tashi. At the inaugural ceremony of the two-day workshop, EC Tashi said the workshop is aimed to adopt and learn modern technologies in the management of plastic for construction works. He expressed optimism that after the workshop, the engineers from Kargil will get a better idea of usage and implementation of technology in making sustainable and eco-friendly roads.

Tashi extended gratitude to the UT Administration for conducting the workshop and said that despite the limited working season and shortage of human resource, REW and other concerned Engineering sectors have extended their support to go par with Leh district in execution of developmental activities. The EC acknowledged the contribution of former Ex-en REW in the execution of developmental works in rural Kargil and said similar efforts are expected from the new officer.

Tashi further welcomed the trainer and guests from CSIR and hoped that the workshop will prove fruitful on the said theme. District Panchayat Officer Padma Angmo welcomed the dignitaries, guests and trainers.

She hoped that trainers will give expertise to concerned engineers of Kargil and the later will fully apply the different modules of the workshop taught by the trainers which will help in the management of plastic in road construction.

Principal Scientist and HOD Central Road Research Institute Dr Ambica Behl gave the inaugural presentation of technical sessions briefing with an introduction about CSIR-CRRI and schedule of the two-day workshop.

The first day of the event was followed by Dr Ambika Bhel principal scientist/ HOD, Principal Scientist Dr Abhishek Mittal, Principal Scientist Gaagandep Singh, Scientist Rajiv Kumar, Senior Scientist Dr G Bharath.

The training workshop will cover subjects like usage of plastic waste, usage of locally available material, cold mix technology for faster road construction, testing technologies, design and construction of flexible pavements, road safety, recycling of bituminous pavements and maintenance rehabilitation technologies etc.

Pertinently, CRRI, New Delhi is a specialized laboratory of the Council of Scientific & Industrial Research (CSIR) engaged in carrying out research and development projects on design, construction, and maintenance of roads and runways, traffic and transportation planning of cities, management of roads, utilization of industrial waste in road construction, ground improvements environmental pollution, road traffic safety and allied activities.

Superintending Engineering R&B Division Nisar Ahmed Bagh, Executive Engineers of Rural Engineering Wing, PWD, Kargil Development Authority, Exen BRO besides concerned Engineers of various Engineering Divisions were present during the event.

Published in:
Take One Digital Network

AI to help TSRTC buses avoid accidents

CSIR-IGIB

12th July, 2022

A multi-stakeholder project with predictive power of Artificial Intelligence (AI) at its core to curb road accidents involving Telangana State Road Transport Corporation (TSRTC) fleet is all set to gain momentum. It will be extended to 200 buses following satisfactory first phase that covered 14 buses, a senior official of TSRTC told the formal launch of project iRASTE by Industries and IT Minister K.T. Rama Rao, at the IIIT-Hyderabad on Tuesday.

iRASTE, which is about shaping Intelligent Solutions for Road Safety through Technology and Engineering, seeks to prevent accidents through a mechanism of alerts to drivers generated by deploying AI and Advanced Driver Assistance Systems. INAI, which is an applied AI research centre, at IIIT-H, tech giant Intel, Uber and TSRTC are part of the project.

The outcome will be of significance considering the lives saved. TSRTC Executive Director (Engineering) C. Vinod Kumar said the Corporation's spend by way of annual compensation to accident victims is ₹ 50 crore.

The plan is to bring in more buses plying on national and State highways under the project. Key persons associated with the project implementation said feed from the road-facing cameras installed in the buses helps send alerts to drivers about potential accidents besides generating data about black and grey spots on highways that in turn can be addressed with engineering fixes.

Some buses also get driver-facing cameras that help keep a tab on the driver, including whether he is showing signs of drowsiness or using mobile phones while driving.

Bodhyaan, a car data capture platform set up at IIIT-H with sensors – cameras, LIDARs, night-vision cameras and Radars; and MicroLabs, set up in collaboration with CSIR-IGIB to provide genomic surveillance for communicable diseases to point of care, were also launched by the Minister.

IIIT-H said Bodhyaan 1.0 is equipped with six cameras for a full surround view, a Lidar sensor and high compute for data capture and processing. The platform can be used by researchers, academics and start-ups in the country to test algorithms or methods in vehicle navigation, data collection or anything related to Indian roads and research.

Mr. Rao said the State is at the forefront of encouraging innovation in emerging technologies and was also part of a few initiatives, including Saagu Baagu project for the farmers. Appreciating the three projects, the Minister said the need of the hour is to evolve technology solutions that address local challenges. “We need solutions like IRASTE... because our challenges are different,” he said.

He assured IIIT-H Director P.J. Narayanan of State government support for the Institute’s Centre for Quantum Science and Computing. Intel India Country Head Nivruti Rai said INAI, which is a result of a collaborative effort between Intel India, Telangana government and IIIT-H, and launched two years ago, has been driving critical projects to identify and solve population-scale challenges in healthcare and smart mobility.

Published in:
The Hindu

CRSI honour for 3 IICT scientists

CSIR-IICT

12th July, 2022

Hyderabad: Senior scientists from Hyderabad-based Indian Institute of Chemical Technology (IICT) have bagged three-major recognitions from Chemical Research Society of India (CRSI). Senior Principal Scientists, Dr Prathama S Mainkar and Dr Debendra K Mohapatra, who are involved in technology development, have been selected for CRSI bronze medals 2023 while IICT Director, Dr D Sreenivas Reddy has been selected for the prestigious Darshan Ranganathan Memorial Lecture of CRSI, a press release said.

The awards were announced during the 29th CRSI National Symposium in Chemistry and CRSI-ACS Symposium Series in Chemistry, held recently at Indian Institute of Science Education and Research (IISER), Mohali under the aegis of CRSI in collaboration with American Chemical Society (ACS).

Dr Prathama's research interest is in the field of medicinal chemistry, synthetic organic chemistry and drug discovery while Dr Debendra K. Mohapatra's research interest is in the area of organic chemistry with a special emphasis on the asymmetric total synthesis of complex natural products of medicinal importance.

Dr. Sreenivas Reddy has wide experience in pharma industry as well as in CSIR laboratories with research focus on application oriented organic synthesis towards human wellbeing with a combination of organic and medicinal chemistry, the press release added.

Published in:

Telangana Today

Two chemical scientists from Pune win bronze medals for their contributions to research in chemistry

CSIR-NCL

12th July, 2022

Two city-based scientists have been awarded a bronze medal by the Chemical Research Society of India (CRSI) for their contributions to research in chemistry.

According to the announcement by CSIR-National Chemical Laboratory (NCL) and Indian Institute of Science Education and Research, Pune (IISER Pune) on their social media platform, Sakya Sen from CSIR-National Chemical Laboratory (NCL) and Sujit K Ghosh from the Indian Institute of Science Education and Research (IISER) were the two from the city among the 30 national-level awardees for 2023.

Constituted in 1999, the CRSI recognises contributions made by scientists at various levels in the field of Chemistry and presents gold, silver and bronze medals to them.

In 2022, two gold medals were presented to Professor Vishwakarma Singh from IIT Bombay and Professor Ramasesha from the Indian Institute of Science, Bengaluru.

Published in:
Hindustantimes

CSIR-CIMFR

हाइड्रोजन रखने के लिए प्लास्टिक का सिलेंडर बना रहा सिंफर

■ मुकेश सिंह

- प्रोजेक्ट पर भारत, स्वीडेन, तुर्की और इसराइल संयुक्त रूप से कर रहे काम
- तीन साल का प्रोजेक्ट, पहले साल में प्रिलिमनरी टेस्टिंग में कामयाबी

कार्बन फाइबर मटेरियल का सिलेंडर और वैज्ञानिक एमएस संतोष।

धनबाद। देश दुनिया में हाइड्रोजन इकोनॉमी पर जोर दिया जा रहा है। ईंधन के रूप में हाइड्रोजन का उपयोग शुरू हो गया है। वैज्ञानिकों की मानें तो भारत जैसे देश में हाइड्रोजन भविष्य का मुख्य ईंधन होगा। धनबाद स्थित सिंफर (सेंट्रल इंस्टीट्यूट ऑफ माइनिंग एंड फ्यूल रिसर्च) हाइड्रोजन फिलिंग के लिए के लिए थर्मोप्लास्टिक एवं कार्बन फाइबर मटेरियल (प्रोटो टाइप) सिलिंडर बना रहा है। अंतरराष्ट्रीय प्रोजेक्ट के तहत इस मुहिम में एक साथ चार देश भारत, स्वीडेन, इसराइल एवं तुर्की मिलकर काम कर रहे हैं। भारत में सीएसआईआर की दो प्रयोगशालाएं धनबाद स्थित सिंफर एवं भोपाल स्थिति एम्प्री लैब संयुक्त रूप से काम कर रहे हैं। प्रोजेक्ट को सिंफर के वैज्ञानिक डॉ एमएस संतोष हेड कर रहे हैं। हिन्दुस्तान से बातचीत में संतोष ने कहा कि इस तरह के सिलेंडर बनाने में सफल हुए तो हाइड्रोजन का वाहनों में ईंधन के रूप में उपयोग आसान हो जाएगा। औद्योगिक उपयोग में भी सुविधा होगी। फिलहाल मेटल के भारी सिलेंडर का उपयोग होता है, जिसके ट्रांसपोर्टेशन में परेशानी है।

तीन साल का प्रोजेक्ट

भारत में इसके लिए फंडिंग डिपार्टमेंट ऑफ साइंस एवं टेक्नोलॉजी की तरफ से की जा रही है। एक साल में सिलेंडर निर्माण का काम टीआरएल-5 लेवल (टेक्नोलॉजी रेडिनेस लेवल) तक पहुंच गया है। प्रारंभिक टेस्टिंग में भी सफलता मिली है। अब बड़े लेवल पर टेस्टिंग की तैयारी में वैज्ञानिक हैं। वैज्ञानिक एमएस संतोष ने कहा कि वर्तमान में 200 एमएल से पांच किलो तक का सिलेंडर बनाने पर काम कर रहे हैं। 200 एमएल के सिलेंडर की प्रारंभिक टेस्टिंग की गई है। दो किलो का सिलेंडर भी तैयार है। अगले चरण में पांच किलो तक के सिलेंडर पर काम किया जाएगा। बता दें यह प्राजेक्ट मिशन इनोवेशन के तहत कोल टू हाइड्रोजन एनर्जी फॉर सस्टेनबल डेवलपमेंट (सतत विकास के लिए हाइड्रोजन एनर्जी) के तहत किया जा रहा है। संतोष कहते हैं कि हाई प्रेशर सिलेंडर तैयार करना है ताकि हाइड्रोजन का सुरक्षित उपयोग किया जा सके।

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