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The Innovation Engine of India

NEWS BULLETIN
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Compiled by Science Communication and Dissemination Directorate (SCDD), CSIR, Anusandhan Bhawan, New Delhi

Council of Scienific & Industrial Research (CSIR)- National Institute of Science Communication and Policy Research (NIScPR) organizes a national workshop to celebrate World Intellectual Property Day

CSIR-NIScPR

25th April , 2024

The Council of Scientific & Industrial Research - National Institute of Science Communication and Policy Research (CSIR-NIScPR) organized a national workshop and celebrated World Intellectual Property Day. The theme of the workshop was "IP and SDGs: Innovating for a Shared Future." The event, held at the seminar hall of CSIR-NIScPR S.V. Marg campus, New Delhi, was attended by over 250 school students and featured presentations from five outstanding innovators who were also felicitated for their contributions to technology and entrepreneurship.

Coordinator of the workshop Dr. Kanika Malik (Senior Principal Scientist at CSIR-NISCPR), provided an insightful introduction to Intellectual Property Rights, emphasizing the importance of protecting innovations for national development. She explained how school students can venture into this field and take it as a career option.

In her address, Ranjana Aggarwal, Director, CSIR-NIScPR said, “Historically, India was often referred to as the “Golden Bird,” a testament to its advanced state and significant global economic contribution, which once stood at 30%. As we mark 75 years of independence, our GDP contribution has adjusted to 9%. Looking ahead to 2047, our ambition is to elevate this figure to 20%. This goal underscores the importance of fostering domestic technological innovation and nurturing indigenous knowledge systems.

The Council of Scientific & Industrial Research (CSIR) has been instrumental in safeguarding

our nation's intellectual heritage, exemplified by its successful challenge against the patenting of turmeric and basmati rice in the United States. This victory reclaimed crucial patents for India. It is imperative that we continue to protect our intellectual property vigorously. The Journal of Intellectual Property Rights, published by CSIR's National Institute of Science Communication and Policy Research (NIScPR), is a significant step in this direction, serving as a beacon for intellectual property awareness and education."

The workshop was graced by the presence of Prof. Unnat Pandit, Controller general of Patents Designs and Trademark (CGPDTM), as the Chief Guest. His keynote address highlighted the critical role of intellectual property in achieving the Sustainable Development Goals (SDGs) and fostering a culture of innovation. Prof. Pandit said, "Over the past decade, India has made remarkable strides in scientific achievements, a testament to the innate innovative spirit and research acumen of our nation's thinkers, who are adept at addressing grassroots challenges.

He further added, "Since the National IP Awareness Mission has been initiated to foster awareness. In just one year, we have received 90,300 patents." The highlight of the workshop was the inspiring stories shared by young innovators and entrepreneurs. These visionary individuals have not only made significant strides in their respective fields but have also demonstrated how creativity and innovation can lead to a sustainable future.

The participation of school students was particularly noteworthy, as they engaged with the innovators, learning about the real-world applications of intellectual property and its significance in driving progress..

The CSIR-National Institute of Science Communication and Policy Research (NIScPR) is a constituent laboratory under the Council of Scientific & Industrial Research, Ministry of Science and Technology, Government of India. It is dedicated to science communication, policy research, and the promotion of scientific awareness among the public.

Published in:

Pib

KABIL inks MoU with CSIR-NGRI for Advancing Geophysical Investigations in Critical and Strategic Minerals Sector

CSIR-NGRI

24th April , 2024

Khanij Bidesh India Limited (KABIL) signed a Memorandum of Understanding (MoU) with the Council of Scientific and Industrial Research - National Geophysical Research Institute (CSIR-NGRI) to foster a long-term collaboration in the field of geophysical investigations to bolster its ongoing projects and activities in critical and strategic minerals. The MoU was signed by Shri Sadashiv Samantaray, Director (Commercial), NALCO & CEO, KABIL and Dr. Prakash Kumar, Director, CSIR-NGRI, in the presence of Shri Sridhar Patra, CMD, NALCO & Chairman, KABIL, at NALCO Corporate Office in Bhubaneswar. This collaboration will focus on Geophysical, Geochemical and Geological surveys, data analysis, interpretation and modelling, scientific knowledge sharing, technical support and advisory services.

Shri Sridhar Patra, CMD, NALCO & Chairman, KABIL, said that this collaboration will pave the way for driving innovation and actionable insights towards the ongoing KABIL projects.

KABIL is a Joint Venture company of three public sector undertakings - National Aluminium Company Limited (NALCO), Hindustan Copper Limited (HCL) and Mineral Exploration and Consultancy Limited (MECL), under the aegis of Ministry of Mines, Government of India.

Published in:

Pib

Srinath University Students Explore CSIR-NML Burmines for Educational Insight

CSIR-NML

24th April , 2024

The educational visit provided the students with a comprehensive overview of various specialized fields including Recycling of Waste, Krupp Lab, Non Destructive Testing, and the History of Metallurgical Testing. NML scientists such as Dr. K Sahu, Head of Forge and Foundry, Dr. Animesh Jaina, a senior scientist, and Dr. S Shiva Prasad, Head of HRG, were present to guide the students. They imparted valuable information that could significantly influence the students' future academic and professional endeavors.

Faculty members from Srinath University, including Head of the Diploma and Engineering Department Shashikant Singh, Assistant Professor Abhishek Kumar, and several other professors, accompanied the students.

Shashikant Singh emphasized the importance of such visits, stating they provide students firsthand exposure to industry practices and enhance their understanding beyond the classroom setting.

This initiative by Srinath University and CSIR-NML Burmines underscores the value of practical learning experiences in engineering education, preparing students for future challenges in the field.

Published in:

Townpost

India's biggest Climate Clock activated at CSIR Hq to celebrate Earth Day

CSIR

23rd April , 2024

Council of Scientific &Industrial Research (CSIR), as a part of the Earth Day Celebrations, installed and activated India's biggest Climate Clock on the CSIR Headquarters Building in Rafi Marg, New Delhi today. The event signifies CSIR's aim to spread awareness about climate change and its ill effects. Speaking on the occasion, Prof Chetan Singh Solanki of IIT, Bombay and Founder, Energy Swaraj Foundation said that there is an urgent need for every citizen of the country to be energy literate. He said every citizen must take steps to avoid or minimise energy usage as much as possible.

Dr Shailesh Nayak, Former Secretary, Ministry of Earth Science and Director, National Institute of Advanced Studies, delivered the CSIR AMRIT Lecture on "Unravelling the Secrets of Triggered Earthquakes: The Lighthouse Project of Scientific Drilling in Koyna". The CSIR Accelerating Modern Research, Innovations and Technologies (AMRIT) Lecture Series aims to learn from the ideas and thoughts of India's foremost S&T leaders that can help pave the way for actions by R&D organisations in general and CSIR in particular.

Addressing the gathering, Dr N Kalaiselvi, DG-CSIR, said that Earth Day is a reminder for us to protect the environment. She informed that under the CSIR-Energy Swaraj Foundation MoU, a large number of scientists and staff in CSIR has undergone the Energy Literacy Training. Climate clocks provided by the Foundation have been installed in most CSIR labs.

Published in:

Pib

CSIR-NEIST organizes Yusuf Hamied Residential Chemistry camp for school students in Jorhat

CSIR-NEIST 23rd April , 2024

CSIR-NEIST along with Royal Chemistry India Foundation (RCIF), India, is organizing the Yusuf Hamied Residential Chemistry Camp for Grade IX school students under Dr Yusuf Hamied's Inspirational Science Programme at the CSIR- North East Institute of Science and Technology which started from Tuesday and it will continue up to April 25. A total of 76 class IX students from government or government-aided schools in and around Jorhat participated in this three-day residential chemistry camp.

The camp will enable the students to enjoy Chemistry and motivate them to develop both awareness and a long-term interest in the subject through an action-packed programme which includes hands-on practical activities in institute's laboratories, exciting chemical demonstrations, a chance to meet like-minded students. The students will have the experience of life staying in hostels of National Research laboratory, and also, more importantly, the camp activities are delivered in the local language in addition to English.

The programme began with a welcome speech by Dr Jatin Kalita, Senior Principal Scientist, CSIR-NEIST and Coordinator of the programme, where he elaborated about the various ongoing research works of CSIR-NEIST and emphasized taking science as a career for making India self reliant and a developed nation. Melissa Mendonza, Programme Executive, Royal Society of Chemistry, Bengaluru briefed about the programme and emphasized that it was a unique and a once in a lifetime opportunity for the students to be participating in a chemistry camp on the prestigious CSIR-NEIST Jorhat.

Dr Virendra M Tiwari, Director, CSIR-NEIST in his inaugural address emphasized that learning science in vernacular language is always better and informed that majority of Nobel Prize Winner in the world studied in their own mother languages. Dr Tiwari highlighted that this particular programme will certainly help the students in demystifying science to develop

both awareness and interest in science subjects. He also informed that besides this Yusuf Hamied residential Chemistry Camp, CSIR-NEIST is regularly organizing students-scientists connect programmes, science motivation programmes and many other inspirational programmes for students, stated a press release.

Published in:
Sentinelassam

CSIR-NAL hands over final set of engine bay door parts for Tejas Mk1A to HAL

CSIR-NAL

23rd April , 2024

CSIR-National Aerospace Laboratories (NAL) on Monday handed over the third and final set of engine bay door (EBD) parts for the Tejas Mk1A, to Hindustan Aeronautics Limited (HAL).

HAL had entered a Transfer of Technology (ToT) agreement with CSIR-NAL in November 2023, to manufacture Bismaleimide (BMI) EBD for the series production of Light Combat Aircraft Tejas Mk1A.

As part of the agreement, HAL can directly produce these high temperature-resistant composite parts for the multi-role fighter aircraft.

The manufacturing technology involves the use of carbon-BMI prepreg (composite materials impregnated with resins) for the EBD to withstand a temperature of about 200 degrees Celsius.

The required moulds and tools were refurbished and qualified by CSIR-NAL, along with HAL.

The first two sets of EBD parts were supplied in November 2023 and February 2024.

During their fabrication, an HAL team was stationed at CSIR-NAL and imparted hands-on training on tooling development and manufacturing of the carbon BMI composites.

CSIR-NAL's Advanced Composites Division has developed composite structures using cost-effective manufacturing technologies.

It has led to the development of composite parts for LCA-Tejas including the fin and rudder, wing spars, and wing fuselage fairings.

The laboratory said that its technologies have resulted in more than 20 per cent cost savings and 25 per cent weight reduction in the aircraft's parts.

CSIR-NAL Director Abhay Pashilkar handed over the third set of EBD parts to Anbuvelan, CEO Helicopter Complex, HAL.

On March 28, Tejas Mk1A completed its maiden flight; the aircraft was installed with the first set of the Carbon-BMI EBD assembly.

Published in:
Deccanherald

New shoe sizing system proposed for Indians: What is 'Bha' and the need for it?

CSIR-CLRI

23rd April , 2024

A pan-India survey on the feet sizes of Indians was recently carried out as part of a larger project for developing an Indian sizing system for footwear. Proposed to be named 'Bha' (भ) to represent Bharat, it could form the basis for manufacturing footwear in India. Upon its implementation, Bha will replace the existing UK/European and the US sizing systems.

What did the survey find?

Initially, the hypothesis was that at least five footwear sizing systems would be required for Indians to be inclusive of various ethnicities. Prior to the survey, it was thought that people from northeast India, on average, had smaller feet sizes compared to the rest of India.

A survey was conducted between December 2021 and March 2022, covering 1,01,880 people across 79 locations in five geographical zones. 3D foot scanning machines were deployed for understanding the size, dimensions and structure of an average Indian foot. It found that the growth of the foot size of an average Indian woman peaked at the age of 11 years whereas that of an Indian man peaked at about 15 or 16 years.

Overall, Indians' feet were found to be wider than that of Europeans or Americans. Due to the narrow footwear available under the UK/European/US sizing systems, Indians have been wearing footwear which are a size bigger than required.

Many Indians were found to be wearing extra-long, ill-fitted and tight footwear. In the case of high-heeled women's footwear, wearing a bigger size was both inconvenient and a cause for potential injuries. For men, shoelaces were tightened much more than ideal to ensure the shoes were not loose fitting. This affected the normal flow of blood for the wearer. By wearing footwear not designed according to their feet's specifications, Indians have been vulnerable to injuries, shoe bites and compromised foot health – especially among elderly women and

diabetics. A statistical analysis of the massive data obtained from the survey concluded that a single shoe sizing system could be devised.

Why was the need for an Indian shoe sizing system felt?
The British introduced UK sizes in India before Indian independence. According to it, an average Indian woman wears footwear sizes between 4 and 6, and the average man between 5 and 11.

Since there existed no data on the feet structure, size, dimensions of Indians, developing an Indian system had been difficult and was never undertaken.

With an Indian user now owning an average of 1.5 footwears each and India being the world's most populated country, it is one of the world's biggest markets and manufacturers of shoes. Industry stakeholders also said that an estimated 50 per cent of the footwear ordered online were rejected by customers. With Bha, both the users and the footwear manufacturers could benefit.

What are the survey's recommendations?
Bha proposes eight footwear sizes: I – infants (0 to 1 year), II – babies (1 to 3 years), III – small children (4 to 6 years), IV – children (7 to 11 years), V – girls (12 to 13 years), VI – boys (12 to 14 years), VII – Women (14 years and above) and VIII – Men (15 years and above).

For commercial purposes, initially manufacturing of footwears ranging in sizes III – VIII would be sufficient. Footwear manufactured as per Bha could give nearly 85 per cent of the country's population the right fitting and better comfort.

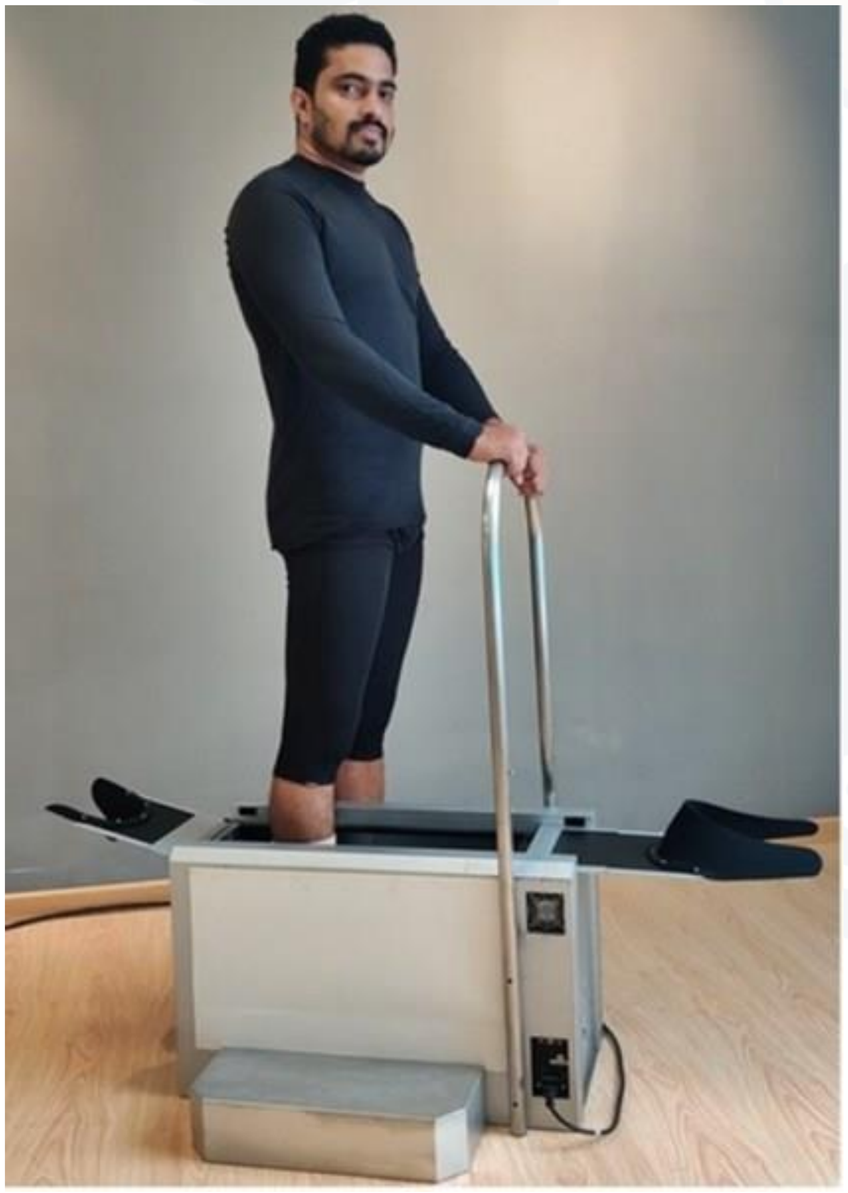
The biggest advantage of adopting Bha would be that footwear manufacturers would need to develop only eight sizes as against the present 10 sizes (English system) and seven sizes (European system). In addition, half-sizes would not be needed. The shoe last size will have an additional 5mm foot length. The Bha system will also be wider at its girth than the footwear

currently available commercially.

What is the current status of Bha?

The Chennai-based Council of Scientific and Industrial Research–Central Leather Research Institute (CSIR–CLRI) conducted the survey. It submitted its recommendations to the Department of Promotion of Industry and Internal Trade (DPIIT), which comes under the Union Ministry of Commerce. The DPIIT has forwarded them to the Bureau of Indian Standards (BIS), which is the Indian authority to implement this sizing system, for approval.

Since Bha will completely overhaul the existing sizing systems, the departments have suggested that footwear manufactured as per Bha size standards should be given to users for trial, testing and feedback. Bha is expected to be implemented sometime in 2025.



Published in:

Indianexpress

Council of Scientific & Industrial Research (CSIR) implements new in-house 'Accounts Manager Software' for financial management

CSIR

22nd April , 2024

CSIR has set an example for all other Central autonomous institutions in the country by successfully implementing its in-house developed 'Accounts Manager Software' for financial management. On 01 April 2024, CSIR generated its Annual accounts for the financial year 2023-24, well ahead of the General Financial Rules (GFR) deadline of 30 June. The Annual Accounts for the financial year 2023-24 have already been submitted to the Office of the CAG.

With an intuitive interface designed for ease of use, software users can effortlessly input, track, and manage financial data. Moreover, it generates comprehensive financial reports, balance sheets, income & expenditure statements, and other relevant analytics, empowering CSIR with actionable insights for informed decision-making. The software ensures data security through role-based access.

One of the most vital features of the CSIR software is its real-time monitoring capability, allowing users to monitor financial activities in real-time. This enables timely intervention and better decision-making.

The software helps to streamline and manage financial transactions, accounting, and reporting within CSIR with unparalleled efficiency. It facilitates the handling of financial data and ensures transparency and accuracy in every process. By standardizing financial practices, improving efficiency, and enabling better financial control across CSIR labs, this software has introduced a new era of financial management that handles a complex network of all its

employees, pensioners, family pensioners, and Project staff.

The AMS software was developed by an in-house team of officers comprising Shri S.P. Singh, Sr. Dy. FA, Shri Arvind Khanna, FAO and Ms Akansha Trehan, Technical Officer. It has been implemented across CSIR Hqrs & its 37 National Labs spread all over the country under the mentorship of Dr N. Kalaiselvi, DG, CSIR/Secretary, DSIR and leadership of Shri Chetan Prakash Jain, Joint Secretary & Financial Adviser, CSIR/DSIR.

Published in:
Pib

Mobile water purification system that tackles emergency needs

CSIR-CSCMRI

21st April , 2024

In what has been pitched as a significant breakthrough, the Central Salt and Marine Chemicals Research Institute (CSMCRI) in Bhavnagar has developed an independent mobile water purification system. Mounted on a pickup van, the purification system can provide drinking water to people in the aftermath of natural disasters or other emergency situations, as per officials. It can filter water from natural sources — with high salinity — without requiring any external power source. Such units are expected to hit the market soon as CSMCRI, the premier research and development laboratory of the central government, has licensed the technology to a Nagpur-based firm for commercialisation.

At a ceremony organised at CSMCRI campus on Wednesday, officers of CSMCRI and the executives of Rite Water Solutions (India) Private Limited signed on an agreement with the private firm being licensed the technology. Rite Water, which provides water solution services to a number of government entities, plans to have 100 such mobile water filtration manufactured in one year, Kamalesh Prasad, head of business development department of CSMCRI, said.

Officials at the CSMCRI said that scientists of the laboratory started working on developing a compact and independent water purification system after Israeli Prime Minister Benjamin Netanyahu gifted India a seawater desalination and purification jeep in 2018. “We had the technology of a large mobile system, of the size of a conventional bus, for water purification since around 2010. However, being large in size, it had issues of manoeuvrability in calamity-hit areas. Therefore, our scientists were working on a compact model of the system. The industry interest in such a technology grew especially after Prime Minister Narendra Modi and Israeli Prime Minister oversaw demonstration of a seawater desalination and purification jeep in Israel and then Israel gifted one such jeep to India early in 2018,” Prasad told The Indian Express.

Prasad said that under the guidance of VK Shahi, coordinator of CSMCRI's membrane science and separation technology (MSST) division, Sanjay Patil, principal scientist of MSST division, and his team have developed the technology. Patil's team included technical officer Shaktisinh Raijada, technical assistant Govind Amliar and former technical officer Arvind Patel. "The plant purifies water by using the conventional reverse osmosis (RO) process with the help of the advanced thin film composite (TFC) membrane. However, it doesn't require any outer power source as the gearbox of the van has been manipulated in such a way that the engine of the van itself powers a generator to run the system," Kanti Bhoohsan Pandey, public relations officer of CSMCRI, said.

The van-mounted desalination unit has a total membrane area of 64 square metres can produce more than 2500 litre-per-hour (LPH) of potable water and up to 50,000 litres per day. A CSMCRI release said that an analysis found that for production of 1,000 liters of water, the system consumes around 1.47 litres of diesel at a price of Rs 135 (with diesel priced at Rs 92 per litre). So, the water production cost of potable water is about 10 paisa per liter, it further added.

The van also has a solar array on its roof to partially meet the demand of electricity of the RO system and scientists said that the system can work on grid power also if it is available. "The system can filter brackish water of around 3,000 TDS (total dissolved solids) and make it drinkable. It can also filter any river water and make it potable in situations of floods etc," Prasad said, adding, "The technology has been licensed to Rite Water on non-exclusive basis but includes a clause giving the private firm exclusivity for a limited period of three years, meaning CSMCRI will not deal with any other private agencies with respect to this technology for the next three years," Prasad said.

Published in:
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