

CSIR IN MEDIA



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Union minister applauds startup founders at CSIR's bldg inauguration

CSIR-URDIP, NCL

20th August, 2022



Union minister of state for science and technology Dr Jitendra Singh on Saturday inaugurated Council of Scientific and Industrial Research's (CSIR) new building complex in the city and interacted with startup founders.

The new institutional building of Council of Scientific and Industrial Research- Unit for Research and Development of Information Products (CSIR-URDIP) is located on National Chemical Laboratory (NCL) campus and the inauguration was marked by a mini-exhibition with 30 startup founders working on health, energy, environment, digitalisation and automation.

Singh said that he is happy to see over the past two decades, CSIR-URDIP has developed frontline capabilities in patinformatics, chem bioinformatics (inputs to drug discovery – information products), phytoinformatics, toxinformatics and development of web-based applications, portals, subject-specific databases, institutional repositories to support open access and open innovation, providing value-added information services to stakeholders, and bringing incommensurable value addition to CSIR knowledge base.

The startups on display included innovations like first smokeless sanitary pad disposal and recycling system as well as dual powered (grid+mechanical) bi-phasic defibrillator. The minister asked the founders to approach the department of science and technology for liberal funding to scale up such global innovations. He also appealed to industries to partner with such success stories to make India startup ecosystem more vibrant and result-oriented.

Singh also lauded the companies for developing India's first Central Drugs Standard Control Organisation (CDSCO) approved circulating tumour cell diagnostic solution, India's first and only bio-active glass-based synthetic bone-graft substitute dental products, next-generation bionic arms, customisable intra-ocular lenses for improving vision post-cataract surgery and next-generation sodium ion battery technologies.

Taking interest on agri startups, Singh interacted with owners of India's first and largest compressed biogas plant converting organic food waste to compressed bio gas and also with firms for indigenously developing sensor technology that makes irrigation management smarter, reliable, and efficient resulting in "more yield per field", and next-generation agro biological to make crops climate resilient and resistant to insects and diseases.

Vardhman Auto Recycling starts ELV research with CSIR-NML Jamshedpur

CSIR-NML

20th August, 2022

Jamshedpur, Aug 20: CSIR-National Metallurgical Laboratory, Jamshedpur signed an MOU with Vardhman Auto Recycling, New Delhi, to conduct joint sponsored and collaborative research in the recycling of End-of-Life Vehicles (ELV), WEEE, and associated wastes, to extract high pure critical metals.



The discussion stressed the extraction of critical and strategic metals like Magnesium, Cobalt, Lithium, Nickel, Vanadium, and Rare Earths, to name a few, from various resources in presence of Dr. Sanjay Kumar, Dr. Jaganath Pal, Dr. R.K.Rath, Dr. Abhilash, Dr. Pratima Meshram, Dr. Navneet Singh Randhawa, Krishna Kumar, Dr. Beena Kumari.

The MoU was signed by Nikeeta Jain, Director, Vardhman Auto Recycling, New Delhi, and Dr. S.K.Pal, Head, Research Planning and Business Development Division, CSIR-NML, in the presence of Dr. Indranil Chatteraj, Director (CSIR-NML), and Naresh Jain, Managing Director (Vardhman Auto Recycling), among others.

The mineral processing, pyro-metallurgical, and hydro-metallurgical facilities were hugely appreciated by the team from Vardhman Auto Recycling, New Delhi, who wishes to utilize them for significant developments aligned to Swach and Sashakt Bharat.

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IICT to be involved in anti-virus mission & public, private partnerships for developing APIs

CSIR-IICT, IIM, CDRI, NCL, CCMB

19th August, 2022

The Indian Institute of Chemical Technology (IICT)'s 10th director D. Srinivasa Reddy's career reads like a fairy tale.



The Shanti Swarup Bhatnagar award winner hails from Shobhanadripuram village in Nalgonda district, studied in a Telugu medium school till his graduation, did his post-graduation from Osmania University and

Ph.D. from University of Hyderabad (UoH) under the tutelage of eminent academic-scientist Prof. Goverdhan Mehta.

He is currently holding the additional charge of CSIR-Indian Institute of Integrative Medicine (Jammu) and CSIR-Drug Research Institute (Lucknow). In this interview, Dr. Reddy talks about his life and plans for the premier chemical research institute.

a) You have been a project assistant here and have returned as the director!

A: My father was a farmer and I never thought of becoming a scientist. I came to Hyderabad for my Intermediate in Mahabub College and B.Sc (BZC) in S.P. College when I used to distribute newspapers, give home tuitions and worked in a timber depot loading logs to earn money. With a lot of difficulty I joined as a project associate in IICT. Later, I cleared my CSIR-NET exam and joined Prof. Mehta. From then on, it has been growing upwards though hard work and perseverance.

b) How did your switch from private sector to research in public labs happen?

A: After my post-doctoral studies in United States and seriously considering settling there, I was offered a job with Dr. Reddy's Labs. Later, I moved to Advinus Therapeutics (Pune) after which I joined CSIR-National Chemical Laboratory (Pune) as I wanted to pursue my passion for organic chemistry research, taking a huge pay cut. My wife, Vidya Ramdas, has been my co-researcher from UoH days and she continues to work in the pharma field. We have done some great work at NCL and I continue to have my lab with six research students. Soon, I will have a lab here and take in student researchers.

c) What are the areas of research you have been working on?

A: We developed the 'Silicon-switch' approach for developing drug strategies for diseases affecting the central nervous system as most patents do not claim silicon derivatives. This has huge potential in discovering drugs in a short time. Our group has identified a few novel compounds that can protect from vector spreading diseases like dengue or zika virus and also kill the mosquitoes. We have filed a patent and talks are on with a private firm to develop this further for daily use. We have collaborated with different labs including CSIR-CCMB to authenticate the anti-cancer drug for use in Sickle Cell Anaemia.

d) What will be the areas of focus here in IICT?

A: We will be actively involved in the 'Anti-Virus Mission' in association with other CSIR labs studying available molecules and re-purposing of existing anti-viral drugs to deal with SARS-COVID, Monkey Pox and several other viruses. We will soon have a BSL-3 facility here. We are actively assisting pharma and vaccine companies in their research. Our aim is to make the country self-reliant in APIs – active pharmaceutical ingredients, KSMs- key starting materials and others with public, private partnerships. I am still trying to understand the various projects here.

Indian scientists have developed a portable disinfection device based on electrostatic technology.

CSIR-CSIO

18th August, 2022

Scientists from the Central Scientific Instruments Organization (CSIR-CSIO), a Chandigarh-based constituent laboratory of the Council of Scientific and Industrial Research (CSIR), have developed a new portable disinfection device. The device effectively prevents the spread of pathogenic microorganisms, including the coronavirus, say the researchers.



It is a handheld device based on electrostatic technology, which works on two fronts. First, when spraying disinfectant liquids, the device emits electrically charged droplets capable of killing viruses in the air. Secondly, charged droplets from the device can reach hidden areas of any target that may contain viruses.

The device has been designed and developed by a team of researchers led by Dr. Manoj Kumar Patel. Researchers say the technology is easy-to-use and can be used by shopkeepers, households, and small businesses. CSIR-CSIO has transferred this technology to Nagpur-based M/s Rite Water Solutions (I) Pvt Ltd for commercialization and mass production.

CSIR-CSIO Director, Professor S. Anantha Ramakrishna, said that “keeping in mind the user demand for ease of use of pathogenic disinfection equipment, CSIR-CSIO has developed this advanced and portable electrostatic device, which is designed to make public places free from infection with pathogenic microorganisms.” The Technology Transfer Agreement has been signed by Abhijit Gan, Director M/s Rite Water Solutions, and Senior Principal Scientist and

Head, Business Development & Project Management, CSIR-CSIO, Dr. A.K. Shukla. The technology transfer program between the two sides was conducted online. On this occasion, Prof. Ananth Ramakrishna and other departmental heads of the institute were present.

Dr Patel explained that “this innovative technology of electrostatic spraying has been developed to ensure disinfection and hygiene in public places, especially in hospitals, poultry, trains, buses, airports and airplanes, classrooms, hotels, and offices.” The device is effective in contributing to a healthy lifestyle and healthcare and is directly linked to the ‘Swasth Bharat Mission’ of the Government of India, he added.

SSVM students visit NML Jamshedpur under CSIR Jigyasa programme

CSIR-NML

18th August, 2022

CSIR-National Metallurgical Laboratory, Jamshedpur organized welcomed a group of 40 students and four teachers of Saraswati Shishu Vidya Mandir (SSVM), Chandil, on their one-day excursion here on Thursday. The event was organized as a part of CSIR Jigyasa programme for the students to gain hands-on experience of CSIR laboratory research and inculcate scientific temper in students.



The inaugural programme commenced at 10 am. A welcome address was delivered by Dr. Mita Tarafder, Chief Scientist and Head, KRIT Division, CSIR-NML. In her address, Dr. Tarafder welcomed all participants and other attendees and briefly talked about CSIR Jigyasa Virtual Lab and its objectives. She gave an idea about the organizational structure of the laboratory and the school centric events that CSIR-NML organize as parts of the Jigyasa Virtual Lab programme. She concluded her speech with a request to the teachers to understand young minds and inculcate innovative mind-set in students. This was followed by a brief demonstration of CSIR Jigyasa portal by Dr. Aniket Dutt. He demonstrated the Jigyasa web portal and its use. The Jigyasa team coordinated various programmes for school students on science outreach. The students visited the Engineering workshop facility, Analytical and Applied Chemistry division, KRIT division and interacted with scientists and research scholars of CSIR-NML. Students had hands-on experience in 3-D Printing, CNC programming. Towards the end of the programme a feedback session was held for the students.

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सीएसआईआर-आईएमएमटी ने मनाया स्वतंत्रता दिवस

भुवनेश्वर। स्वतंत्रता दिवस के 76 वर्ष के अवसर पर सीएसआईआर-आईएमएमटी, भुवनेश्वर में आजादी का अमृत उत्सव मनाया गया। इस अवसर पर स्वतंत्रता सेनानियों को श्रद्धांजलि दी गई है। सीएसआईआर-आईएमएमटी के प्रभारी निदेशक डॉ. भाग्यधर भोई ने ध्वजारोहण किया। उपस्थित सभी सदस्यों ने राष्ट्रगान गाया। इस कार्यक्रम में 400 से अधिक आईएमएमटी सदस्यों, कर्मचारियों, छात्रों, कॉलोनी के सदस्यों और अन्य मेहमानों ने भाग लिया। इस अवसर पर आईएमएमटी के प्रभारी निदेशक डॉ. भाग्यधर भोई ने कहा कि हम भाग्यशाली हैं कि हमने एक स्वतंत्र राष्ट्र में जन्म लिया है। एक शक्तिशाली ब्रिटिश संगठन से लड़ने के बाद भारत को उसकी स्वतंत्रता देना वास्तव में एक कठिन कार्य था। उन कठिन और संघर्षपूर्ण समय को याद करते हुए हम स्वतंत्रता दिवस

मनाते हैं और उन शहीद जवानों को श्रद्धांजलि अर्पित करते हैं। इस अवसर पर विभिन्न सांस्कृतिक कार्यक्रमों का आयोजन किया गया। इसमें आरआर नोडल स्कूल के छात्र-छात्राओं और कॉलोनी के बच्चों ने भाग लिया। अंत में भोजन वितरण कर कार्यक्रम का समापन किया गया। इस अवसर पर यह घोषणा किया गया कि स्पोर्ट्स प्रमोशन बोर्ड द्वारा आयोजित सीएसआईआर-सीआईएमएफआर क्रिकेट टूर्नामेंट में अच्छा प्रदर्शन करते हुए आईएमएमटी टीम जल्द ही फाइनल मैच के लिए खेलने जा रही है और यह भी घोषणा की गई कि एसएस भटनागर फुटबॉल जोनल लेट बॉल टूर्नामेंट 1 से 3 सितंबर तक सीएसआईआर-आईएमएमटी भुवनेश्वर परिसर में आयोजित किया जाएगा। इस अवसर पर टीम के सभी सदस्यों को सम्मानित किया गया।

INDIA AT 75 | HIGH POINTS IN SCIENCE, TECHNOLOGY AND INNOVATION

CSIR-NPL, CLRI, CMERI

16th August, 2022

The Scientific and Industrial Research Council has effectively carried out its mission since independence

Looking back on 75 years of independence, I am proud of our country's socio-economic development. Long-term colonial rule robbed India of much of its wealth and, more importantly, the skills needed to sustain economic growth. In 1947, it started as a poor country with a GDP of only 270,000 rupees and a grain production of only 50 million tons. Educating the people, feeding the population, enforcing democracy, promoting industry and trade, and national security remained difficult. It is against this background that the Council for Scientific and Industrial Research (CSIR), founded in 1942, has been charged with developing an ecosystem of science, technology and innovation.

The CSIR's immediate priority was to establish a number of national laboratories under its umbrella and promote similar organizations independently. With support from government and industry, CSIR procured resources through crowdsourcing and started five independent laboratories. Similarly, in collaboration with Sir Drabji Tata Trust and the Government of Bombay, the Government of India (through CSIR) initiated the Tata Fundamental Institute, which provided substantial financial support in the early years.

Among the first examples of finding solutions based on science and technology was the harmonization of different existing calendar systems. A committee chaired by Meghnad Saha was established to address this issue. The Commission's report was published by CSIR in 1955, after which it became accepted as the national calendar and is now one of the elements of national identity. Another early example of independence was dealing with the challenges of conducting democratic elections. This meant preventing fraud, including double voting by

the same person. CSIR's National Physical Laboratory has developed an indelible ink composed of silver nitrate to address this concern. Indelible ink is still used today and exported to many countries, and undoubtedly remains one of CSIR's prized gifts to the nation.

Leather story

At the time of independence, India did not have well-established industries in many sectors. The informal labor sector was also very disorganized, with no skills developed for specific industry segments. Therefore, CSIR's main task was to support the development of local industry by making available the latest technology and training the necessary manpower. A prominent example of CSIR's contribution in this context is the development of the leather industry. The manufacture of finished leather goods remained elusive due to the lack of a well-established leather industry and associated technology, which at the time of independence employed fewer than 25,000 people. In the 1970s, the government banned the export of rawhide and imposed a 25% export tax on semi-finished leather products. These decisions were a turning point as far as the development of the Indian leather industry is concerned.

Today, more than 50 years later, the leather industry has a workforce of over 4.5 million people, mostly women, and a thriving market for Indian leather goods around the world. Indian exports in this sector make him nearly \$6 billion. CSIR's footprint in this area has been transformative. First, when the CSIR-Central Leather Research Institute (CLRI) was established in 1948, it developed the technology for finished leather products, including the first domestic production of leather chemical products, enabling the transition from semi-finished leather to finished leather. In addition, CSIR-CLRI regularly trained the next generation of talents in the leather industry. As a result, more than 40% of his employees employed in the leather industry are directly or indirectly trained in his CSIR-CLRI. Human resource development across all sectors, with a focus on science, technology and innovation, is a hallmark of CSIR.

Technology success

The Green Revolution is one of the crowning glories of science, technology and innovation. Likewise, the emergence of the generic drug industry in India has an interesting history.

During the Green Revolution, CSIR's footprint could be seen in the development of pesticides and the mechanization of agriculture. Bengal Chemicals and Pharmaceuticals Ltd. was founded by Acharya Prafulla Chandra Ray long before independence, but the chemical industry needed the impetus it needed to mature. After independence, two of his public companies were founded, Hindustan Insecticides Ltd. and Hindustan Organic Chemicals Ltd., based on the technology developed in CSIR's laboratories, the former producing pesticides. Similarly, the production of anti-HIV drugs by processes developed at the CSIR Institute provided the impetus necessary for the growth of generic drug companies. They certainly represent an excellent example of the interaction between academia and industry from the early days of independence.

Agricultural mechanization was achieved through the proprietary development of the Swaraj tractor at the CSIR-Central Mechanical Engineering Research Institute (CMERI) and in 1970 Punjab Tractors Ltd. was founded. In particular, CSIR-CMERI's technical team presents his one of the first successful models of spin-off companies from the domestic academia.

Road to independence

Significant impacts of CSIR can also be seen in the food and nutrition industry, the aerospace sector, the health and biotechnology industry, the protection of India's traditional knowledge systems, and the promotion of crops to boost farmers' incomes. For example, in the 1950s, when it seemed impossible to solve the infant feeding problem, CSIR successfully developed a technology to convert buffalo milk into a powder and commercialized it with the help of Amul Industries. . Recent CSIR aroma missions have changed the lives of thousands of farmers across the country. Lavender cultivation in the Union Territory of Jammu and Kashmir is drawing global attention as India's 'Purple Revolution'. Thus, there are many examples of science, technology and innovation that have enabled India to take a decisive step towards

becoming an Atmanilva Nation. But true Atman Nirvata emerges only if we remain at the forefront of future technological developments. This is clearly a task for CSIR. We believe that Indian society has become increasingly prosperous due to science, technology and innovation driven development, but challenges to the future remain a threat. Reducing dependence on natural resources, making all industrial processes cyclical and leaving no trace of human activity, making technology greener, and providing ample opportunities for all who live in cities or villages, remains a priority in science and technology. Moreover, the ancient wisdom of integrating science and spirituality by deepening our understanding of nature together with our understanding of the human mind and spirit will be a desperate hope for the Indian science and technology community.

Dr. Shekhar Mande is the former Executive Director of the Council for Scientific and Industrial Research (CSIR).



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