

In the News

CSIR Indigenously Develops “Paracetamol” Announced by the Hon’ble Minister Dr Jitendra Singh

“This innovation aims to make India self-reliant in paracetamol manufacturing, reducing dependence on imported ingredients” – Dr Jitendra Singh.



Addressing the 40th Foundation Day of the Department of Scientific and Industrial Research at Dr Ambedkar International Centre on 4 January 2025, Union Minister Dr Jitendra Singh, Minister of State (Independent Charge) for Science and Technology, Earth Sciences (Independent

Charge), MoS, PMO, DoPT Personnel, Public Grievances and Pensions, Atomic Energy, Space, announced the indigenously developed drug “Paracetamol”, commonly used in pain, fever, etc, by CSIR which is affiliated to the Ministry of Science & Technology, Govt of India.

Dr Jitendra Singh remembered the birth of CSIR, which is a much older organisation aimed at India's scientific and industrial progress through research.

The Minister elaborated that CSIR has developed indigenous technology to produce paracetamol, a widely used pain reliever and fever reducer. He added that this innovation aims to make India self-reliant in paracetamol manufacturing, reducing dependence on imported ingredients. Karnataka-based Satya Deeptha Pharmaceuticals Ltd will utilise this breakthrough to produce affordable paracetamol domestically. Currently, India imports the key raw materials for paracetamol from various countries. Thus, the CSIR initiative not only addresses this dependency but also aligns with Prime Minister Narendra Modi's "Atmanirbhar Bharat" (Self-reliant India) vision.

Dr Jitendra Singh, in his address, traced back the history of DSIR and its contribution for the past decade and recalled its mandate to focus on synergising collaboration with industry partners to scale up innovation and foster technological growth. He also remembered the birth of CSIR, which is a much older organisation aimed at India's scientific and industrial progress through research.

Dr Jitendra Singh also congratulated the DSIR team on their 40th Foundation Day.

The DSIR Foundation Day marked 16 more technology transfers: nine from CSIR-CSIO Chennai Centre and six from CSIR-CEERI, Pilani, the technology transfer between CSIR and MSME units registered under LAGHU UDYOG BHARATI under the

campaign 100 days 100 technology programme. LAGHU UDYOG BHARATI is a registered all-India organisation of MSME in India since 1994, with more than 60,000 registered members. So far, 57 CSIR technologies have been transferred under this campaign, and 16 more were transferred. The technologies transferred by CSIO are in the area of design and development of scientific and industrial instruments with IoT-enabled technologies, while transfers by CEERI are in the area of healthcare and societal implications. One MoU is signed between CSIO and ELCIA, Bengaluru, towards mutual collaboration in the development of sensors.

Dr Jitendra Singh highlighted the achievements of CSIR and praised its efforts. It enumerated the development of 108 petal Lotus, hydrogen bus, Biofuels, and the success of the Aroma Mission, i.e. Lavender cultivation, which got featured in Republic Day Tableau and lauded by the Prime Minister himself. And recent progress on indigenously developed paracetamol.

According to Dr Jitendra Singh, all the arms of Government should work in synergy and called for a whole-of-government and whole-of-science approach. He recalled the initiatives One Week One Theme (OWOT) and One Week One Lab (OWOL) of CSIR, which were the brainchild of the Science and Technology Minister. He also mentioned that PM Modi believes in Women-led development, and thus, women scientists and startups are being

all necessary help by the government, he said.

Towards the conclusion of his speech, Dr Singh emphasised that it is high time for us to look beyond government resources for innovation, and we should start exploring non-government funds along with Knowledge partnership and resource sharing. He underlined that Anusandhan NRF is a step in the same direction, where 60% of the funds will be raised by non-government sectors. He reaffirmed to the scientific community that 2025 will also be a power-packed year for science and technology, with innumerable ventures coming up.

Dr N Kalaiselvi, Secretary DSIR, DG-CSIR, in her remarks, recalled the signing of the Guwahati science declaration by the members,

which aimed at becoming a global economic hub in 2047.

Prof. AK Sood, Principal Scientific Advisor to the government of India, emphasised making our country a product-based economy, and a good part of our country should come from tech-related products. He also gave us an example of the USA, where 9% of their economic growth is based on the tech sector. He also attributed that we have to become a product economy from a service economy, and this product economy should be based on our own design. Senior Scientists from DSIR and industry leaders, MSME's were present in large numbers during the celebration.

Adapted from PIB

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Hon'ble Minister Dr Jitendra Singh Inaugurates CSIR HealthCare Theme Conclave

Hon'ble S&T Minister Dr Jitendra Singh, Vice President of CSIR and Chief Guest of the function, inaugurated the CSIR HealthCare Theme Conclave at Sher-e-Kashmir International Convention Centre (SKICC), Srinagar, on 16 November 2024.

The conclave was organised under the One Week One Theme (OWOT) campaign of CSIR, with the prime focus on fostering innovation and a startup ecosystem in the Healthcare Sector. During his inaugural address, Dr Jitendra Singh mentioned how the country

has come a long way from only a few hundred startups in 2014 to several thousand now, with many success stories. He said that some of these companies with humble beginnings now provide employment to hundreds of people and sell their products and services not only in India but abroad as well.

Dr Jitendra Singh emphasised the rapid growth of the startup ecosystem in Jammu & Kashmir, which has expanded from 30 to over 350 startups in the past five years. He mentioned India's

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rise in the Global Innovation Index from 81 to 40, recognising the youth's potential, unlocked through policies introduced under Prime Minister Narendra Modi's leadership since 2014. He said that there is a greater need to support deep-tech startups in the healthcare sector to become Atma Nirbhar and achieve the target of Viksit Bharat 2047. Towards this end, the Modi Government 3.0 has brought the BioE3 policy and allocated ₹ 1,000 crores for startups and ₹ 2,600 cr for industrial hubs.

Mr Satish Sharma, Cabinet Minister, J&K Govt Minister for Food, Civil Supplies & Consumer Affairs, Transport, Science & Technology, Information Technology, Youth Services & Sports and ARI & Trainings Departments, the Guest of Honour at the Inaugural function, said that his government of the UT of Jammu and Kashmir is committed to providing all the support to youth who wish to set up their own companies, as this will also provide

much-needed employment opportunities in the UT.

Dr N Kalaiselvi, Director General, CSIR & Secretary DSIR, conveyed in her message that the One Week One Theme (OWOT) Campaign was the brainchild of Dr Jitendra Singh, aimed at creating awareness about the scientific and technological progress made by CSIR Labs, for improving engagement among stakeholders such as MSMEs, startups, scientists and researchers to foster collaboration and provide new avenues employment.

Mr GN Singh, Advisor to Chief Minister, UP, & Ex Drug Controller General, during his address, mentioned his long association with CSIR-IIIM, Jammu, and how he has seen various facets of drug discovery research progressing at the institute. He appreciated the efforts of the Government, through its various agencies, including CSIR, in supporting the startup ecosystem in the country and generating employment opportunities.

Dr Vinay K Nandicoori, Director, CSIR-CCMB, talked about various contributions that different CSIR laboratories are making in the healthcare sector, which include new drugs, diagnostics, and surveillance for antibiotic resistance. He also talked about CSIR's contribution during the COVID-19 pandemic.

Dr Zabeer Ahmed, Director CSIR-IIIM, earlier in his welcome address, informed the audience about various sessions in the conclave, including the exhibition of technological innovations and products by 36 startups and eight CSIR labs, in the HealthCare sector, which include new drugs under development for cancer and infectious diseases, products targeted at women health, natural cosmetics, as well as functional foods, biofertilisers and biopesticides. He also mentioned the research contributions of CSIR-IIIM in discovering drugs for cancer, diabetes mellitus, rheumatoid arthritis, and liver diseases, among others. He also highlighted a societal initiative –

the “CSIR Aroma Mission” which is prospering under the mentorship of Dr Jitendra Singh.

Earlier, in special lectures, Dr D Srinivasa Reddy, Director, CSIR-IICT, talked about CSIR's work on discovering new drugs from natural products as well as developing new and simpler chemical synthesis routes and their out licencing to companies for the production of generics and self-reliance in this area.

Dr Vibha Tandon, Director of CSIR-IICB, talked about various challenges associated with antibiotic resistance, including its global burden and the molecules currently in the clinical pipeline, including those that are under development at various CSIR institutes.

Many startups participated in the event. The first day of the conclave saw significant participation from academicians, scientists, technocrats, startups, industrialists, research scholars, members of civil society and more than 300 students from various universities, colleges, and schools.

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CSIR-CIMFR Achieves Milestone with First Trial Blast of Dozer Push Mining Method in India

In a groundbreaking achievement for the mining industry, the CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR), Dhanbad, has successfully conducted the first trial blast for the Dozer Push Mining Method, integrating advanced digital technologies,

for the first time in India. This innovative approach developed by CSIR-CIMFR, aims to enhance safety and operational efficiency in mining processes. The trial was conducted at the PEKB (Parsa East and Kanta Basan) Coal Mine operated by M/s Adani Enterprises



Limited in the Udaipur block of Ambikapur, Chhattisgarh.

The successful trial was conducted by Adani Natural Resources, one of India's leading private mining companies. The innovative method is expected to revolutionise mining operations with a focus on streamlining processes and improving safety protocols. The development is a result of a sponsored project being undertaken by the Dhanbad-based CSIR-CIMFR on a Scientific Study for Designing Deep Hole Cast Blasting at PEKB Opencast Coal Mine. The primary objective of the project was to develop a method that not only optimises the mining process but also ensures that vibration and fly rock are controlled within safe limits. After two years of extensive deliberations, technical evaluations, and adaptations to local mining conditions, the project has successfully tailored the Dozer Push Mining Method for Indian coal mines.

The developed Dozer Push Mining introduces a paradigm shift by utilising unmanned, automated machinery for mining operations. The trial involved drilling 108 holes using an automated drill machine (man-less), followed by cast/throw blasting using 60 tons of bulk emulsion explosives. Further, the

blasted material will be pushed in a decoaled area using a specially designed, large-sized automated dozer machine.

The dozer push mining method offers a viable alternative to the conventional truck-shovel mining technique or shovel-dumper and dragline methods, with its distinct advantages such as improved efficiency by enabling faster coal recovery, reducing delays caused by adverse weather conditions such as the monsoon season and highly cost-effective, with an estimated 7-10% reduction in operational costs compared to conventional methods. Additionally, it enhances productivity by improving the utilisation of dragline machines and reducing unit costs. Moreover, the unmanned operation of the Dozer Push Mining method greatly enhances worker safety, minimising the risks associated with manual labour and traditional mining techniques.

The first trial was conducted under the leadership of Prof. Arvind Kumar Mishra, Director, CSIR-CIMFR, and the S&T team of CSIR-CIMFR comprising Dr Murari P Roy, Dr Vivek K Himanshu, Mr RS Yadav, Mr Suraj Kumar, and Dr Ashish K Vishwakarma. The first trial demonstrated successful drilling and charging operations,

This innovative approach developed by CSIR-CIMFR, aims to enhance safety and operational efficiency in mining processes.

precise detonation with minimal environmental impact, and effective material movement using automated machinery. The second phase will involve conducting 8–10 additional trial blasts to refine the blast design further. The final recommendations will focus on optimising the method for widespread implementation.

The successful implementation of the Dozer Push Mining Method marks a significant advancement

for the Indian mining industry. It underscores the potential for adopting cutting-edge technologies to enhance safety, efficiency, and cost-effectiveness in mining operations. This breakthrough is poised to revolutionise mining practices, making them more efficient, cost-effective, and safer, ultimately setting a new benchmark in the industry.

Adapted from PIB

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Workshops/Seminars/Conferences

International Conference on Communication and Dissemination of Traditional Knowledge (CDTK-2024)



The release of the Souvenir & Abstract book by the Dignitaries

CSIR-National Institute of Science Communication and Policy Research (NIScPR), New Delhi, and Gurugram University jointly hosted the International Conference on Communication and Dissemination of Traditional Knowledge (CDTK-2024) at Gurugram University, Gurugram on 13-14 November 2024. The

conference was inaugurated on 13 November 2024.

During the inaugural of the conference, Prof. Dinesh Kumar, Vice Chancellor of Gurugram University, delivered the welcome address, setting the stage for the conference, conveyed his excitement regarding the discussions and deliberations

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, informed that NIScPR has disseminated socially engaging SVASTIK stories in 17 Indian languages via social media.



**Prof. Dinesh Kumar, VC,
Gurugram University**

focused on Indian cultural legacies and their adaptation to the requirements of the modern world.



**Prof. Ranjana Aggarwal, Director,
CSIR-NIScPR**

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, New Delhi, in her address, provided an overview of SVASTIK (Scientifically Validated Traditional Knowledge), highlighting its significance in promoting scientifically validated Indian traditional knowledge. SVASTIK, a national initiative, is coordinated by CSIR-NIScPR. The initiative was launched to communicate scientifically validated traditional knowledge of India to society. Prof. Aggarwal added that NIScPR has disseminated socially engaging

SVASTIK stories in 17 Indian languages *via* social media. Moreover, the two SVASTIK publications provide authenticated stories on traditional knowledge, inspiring young students to explore science.



Dr Shekhar C Mande, Former DG CSIR

The keynote lecture was delivered by Dr Shekhar C Mande, Distinguished Professor, Savitribai Phule Pune University and Former Director General CSIR & Secretary DSIR, Government of India. Dr Mande emphasised the critical role of combining traditional knowledge with modern scientific approaches, citing instances where the international community has acknowledged the achievements of Indian scholars. CSIR-NIScPR has empowered traditional knowledge, giving it a global voice. Notably, William Dalrymple's new book, *The Golden Road*, highlights India's rich scientific heritage. Our ancient civilisation excelled in metallurgy, mathematics, and medicine, demonstrating profound scientific principles deeply rooted in Indian culture. SVASTIK's endeavour to promote awareness of Indian traditions in science is truly commendable.



Prof. KK Aggarwal, President, South Asian University, New Delhi

Prof. KK Aggarwal, President, South Asian University, New Delhi (India), addressed the gathering as the Chief Guest, emphasising the need for interdisciplinary research and collaboration where traditional knowledge is applied effectively and requires validation immediately from the modern world, which SVASTIK facilitates. He further added that our goal should be to share this knowledge with the world rather than disowning our heritage.

The inaugural session of the International Conference (CDTK-2024) also witnessed the release of the Souvenir & Abstract book and two digital flipbooks, *Treasure of Indian Traditions: A Journey through Scientifically Validated Indian Traditional Knowledge* in Hindi and Punjabi languages.

The first day of the conference also featured diverse sessions, including discussions on integrating traditional pedagogies into modern education, ethics in traditional knowledge research, and the science behind traditional agriculture and cuisine. Additional sessions

explored sustainable traditional architecture, integrating ancient sciences into modern disciplines, and effective communication of traditional knowledge through the “Paramparik Gyan Sanchar: SVASTIK workshop”.

The second day has featured remaining compelling sessions that delve deep into the realms of traditional knowledge research and communication. The Arogya Vidya session was chaired by Prof. Bhushan Patwardhan, National Research Professor-AYUSH, SBPPU, Pune, who urged healthcare professionals to prioritise patient welfare above personal egos and adopt the best practices for humanity’s benefit. Dr Rabinarayan Acharya DG, CCRAS, New Delhi, stressed the need for an inclusive, evidence-based healthcare framework. He further discussed integrating AYUSH systems and cross-referrals in tertiary healthcare. Dr N Zaheer Ahmed, DG, CCRUM, New Delhi, highlighted the importance of research in drug quality and traditional remedies.

Dr NJ Muthukumar DG, CCRS, Chennai, emphasised the revival of Siddha practices, and CCRS introduced digital tools to enhance healthcare communication. The session on “Jal, Paristhitiki Evam Paryavaran” was chaired by Dr Virendra M Tiwari, Director, CSIR-NEIST, and featured Prof. Saroj K Barik, Professor, NEHU Shillong, who discussed Traditional Ecological Knowledge and its applications in biodiversity, forest conservation, and sustainable practices using

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*Prof. Sharad Jain,
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examples from Northeast India. He emphasised sustainable bamboo management by referencing “Asha Van” and the significance of sacred groves.

Prof. Sharad Jain, Former Director, National Institute of Hydrology, Roorkee, explored ancient India's advancements in hydrology, tracing knowledge to the Indus Valley Civilisation and referencing texts like the Rig Veda and Arthashastra. He highlighted historical water management structures and techniques, showcasing India's rich hydrologic heritage and its connection to civilisation and sustainability. The session on “Reviving Ancient Healing Traditions and Integration into Modern Healthcare: Yoga, Homeopathy & Sowa Rigpa” was chaired by Dr A Raghu, Deputy Director General of Health Services at the Ministry of Health and Family Welfare, with Dr Yogita Munjal, Director, Directorate of AYUSH, as co-chair.

Dr A Raghu addressed the efforts of the Indian government in disseminating traditional knowledge across various sectors, highlighting the commitment to share this wisdom with the international community. Dr Sunil S Ramteke, Deputy Director General, CCRH, New Delhi, discussed the operational principles of homeopathy, illustrating them with examples of various plants and their medicinal benefits. Dr IN Acharya, from the Morarji Desai National Institute of Yoga in New Delhi, emphasised the therapeutic effects of pranayama in managing contemporary stress.

Furthermore, Dr Padma Gurmet, Director of the National Institute of Sowa Rigpa in Leh, underscored the importance of Sowa Rigpa in the Himalayan region, particularly its ties to Indian Buddhism. Prof. Vibha Tripathi, Former Head & Emeritus Professor, BHU, Varanasi, opened the panel discussion on Scientific Validation of Traditional Knowledge: Challenges and the Way Forward. The panellist, Prof. (Dr) Rama Jayasundar, Prof. & Head, NMR Division, AIIMS, New Delhi, highlighted three major objectives of research that are validation for providing the evidence(s), use of information from traditional knowledge in modern science like drug discovery, and research to improve the healthcare system. Dr Rabindra N Padariya, Joint Director (Extension), IARI, New Delhi, highlighted the authentication of traditional agricultural knowledge that requires interdisciplinary collaboration, community-based validation, digitalisation, scientific incentives, NGO partnerships and University-level research. About 400 delegates engaged in both poster and oral presentations, demonstrating their research efforts.

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, opened the valedictory session by warmly welcoming everyone and expressing gratitude for their contribution to the success of the event. She extended a special welcome to the Chief Guest, Prof. Anil Joshi, HESCO, Dehradun, who graciously attended at short notice.

Prof. Dinesh Kumar, Vice Chancellor of Gurugram University, offered his congratulations to the entire team for their collective efforts in making the conference a success. He highlighted the urgency of sustainability, expressing concern that material possessions cannot shield us from environmental degradation unless we commit to sustainable practices.

The Chief Guest of the session Padma Bhushan Prof. Anil P Joshi addressed the audience, stressing the importance of remembering and preserving Indian traditions. He urged attendees to be mindful of their cultural heritage while navigating the influences of the Western world. Prof. Vibha

Tripathi emphasised harmonising traditional knowledge with contemporary science for a better future.

Dr Charu Lata summarised the deliberations of the conference. Dr Dhirender Kaushik, Professor at Gurugram University, expressed his heartfelt thanks to all the dignitaries and delegates for their invaluable contributions to the conference. He emphasised the collaborative efforts that led to the event's success and encouraged continued engagement in future initiatives. This valedictory session reflected the conference's achievements and reinforced the importance of sustainability and tradition in India.

CSIR-CEERI Organises the National Conference on Emerging Trends on “Vacuum Electron Devices and Applications (VEDA)” 2024

The National Conference on Emerging Trends on “Vacuum Electron Devices and Applications (VEDA)”, is an annual event held across the country. This year, the conference (VEDA-2024) was organised at CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani, from 18-20 November 2024.

In this event about 125 participants from different R&D, academic institutions and industries participated. About 100 abstracts in the area of Vacuum Electron Devices (VEDs) were received, depicting their design,

development, use and production, which essentially bridges the gap among the VED fraternity through a series of discussions and exchanging views. Beyond these papers, there were several invited/plenary talks in the area of RF and VEDs from eminent personalities from different institutions (R&D, academic, industry) across the country. The sponsors showcased their products in exhibition stalls, which were vital for setting up laboratories in these areas.

The event started its opening with tutorial sessions on 18 November 2024, with a series

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The conference provided a common platform to share/exchange views among the designers, users, industry partners and learners in this strategic area and marked a grand success.



of eight invited lectures from various eminent speakers of elite institutes in the diverse field of vacuum microwave devices and microwave engineering. The gatherings were of the students, researchers, scientists, academicians and industries from different parts of the country. It was the common platform to share/exchange views among the designers, users, industry partners and learners in this strategic area and marked a grand success.

Following the tutorial talks of the first day, 19 November 2024, marked the grand inaugural of VEDA-2024 with Dr P Hanumanth Rao, Director General, SAMEER, Mumbai, as the Chief Guest and President of VEDA Society, Dr SK Datta, Outstanding Scientist and Centre Head, DRDO-MTRDC as the Guest-of-Honour.

During the inaugural session, Director, CSIR-CEERI, Dr PC Panchariya, in his welcome address, highlighted the achievements of CSIR-CEERI, in particular, in the area of vacuum microwave tubes. He also mentioned how the vacuum electron devices research and development were first started in CSIR-CEERI since its inception and is continuing after almost five decades. Convener of VEDA-2024, Dr SK Ghosh, Chief Scientist, CSIR-CEERI, gave an overview of the conference.

Following the address, the VEDA President, Dr SK Datta,



Dr Lalit Kumar, Ex-Director, MTRDC-DRDO, is delivering to the audience during the tutorial session at VEDA-2024

briefed about the VEDA Society of India and the various awards being conferred this year (2024) by the VEDA Society for excellence in the field of vacuum electron devices. The Chief Guest delivered his address to the gathering of scientific experts, academicians, industrial partners, and scholars detailing the strategic importance of different types of vacuum microwave devices, namely, magnetron, klystron, travelling-wave tube, gyrotron, etc, across the country. He also urged the design and development group to bridge the gap between the users and industry to become self-reliant in this area and to stop the import of these devices. He also mentioned that in this important sector, trained manpower is decreasing, and CSIR-CEERI has a great role in HR development.

After the inaugural addresses, the function was presided over by

the VEDA Society for the award ceremony for the year 2024, which happens annually during the VEDA event. There were three categories of awards distributed by the VEDA Society of India. The first category was the Lifetime Achievement Award for scientists who worked significantly in the field of VED. The award was conferred to Dr Lalit Kumar, Ex-Director, MTRDC-DRDO, and Er RK Gupta, Ex-Chief Scientist, CSIR-CEERI. Two Mid-carrier Awards were conferred to Dr Manapurna Mahto, Assistant Professor, NIT Patna and Sh. S Khanderkar, Scientist-F, MTRDC-DRDO, in the second category.

From this year onwards, another award has been introduced by the family of Padmabhusan Dr Amarjit Singh, the Founder Director, CSIR-CEERI as the 'Padmabhusan Dr Amarjit Singh Young Scientist Award' in the third category and the award



Dr P Hanumantha Rao, Director General, SAMEER, Mumbai and Dr PC Panchariya, Director, CSIR-CEERI, Pilani, inaugurating the industry exhibition at VEDA-2024

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was conferred to Dr Gaurav Singh Baghel, Asst Prof. NIT, Silchar.

The function was then followed by the industrial visit and exhibition of industrial partners. The exhibitors displayed and showcased their technologies and products for R&D use. The second day was concluded with invited/plenary talks from the scientific experts in the VED field. Invited speakers from different institutes, namely DRDO, BARS, NITs, IITs, Industries, etc. The invited talks were subject-specific and value-added to both designers and users. The plenary talks were dedicated to “Padmabhusan Dr Amarjit Singh, the Founding Director of CSIR-CEERI, and Dr SN Joshi, Former Chief Scientist of CSIR-CEERI”. In this session, the speakers were senior members of the VEDA Society and had a long association with these two personalities, and they shared their working experience, products, etc., with both of the commemorates.

On the third and concluding day of VEDA-2024, 20 November

2024, 13 technical sessions were organised to present about 90 technical papers on different topics in the area of vacuum electron devices, systems, applications, materials, etc. There were three parallel sessions in the pre-lunch session and two post-lunch parallel sessions. In these sessions, the scientific experts, research scholars, academicians and students shared their research work and state-of-the-art design and development concepts in these technical papers, followed by fruitful discussions among the VED fraternity in this niche domain.

During the valedictory session, past, present and future scenarios of vacuum microwave devices were discussed. Prof. BN Basu presided over the session. Several initiatives were also taken to sign MoUs among the different design, user, and production agencies. At last, the convener of VEDA-2024 conveyed his sincere thanks to every individual who made cohesive efforts to make this event a great success.

Three-day International Workshop on “Terahertz Technology for Industrial Applications”

CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani, organised a three-day International Workshop jointly with Goethe University, Frankfurt, Germany, on “Terahertz Technology for

Industrial Applications” from 3-5 October 2024. The workshop was mainly sponsored by the Indo-German Science and Technology Centre (IGSTC). The workshop commenced with the inaugural session on 3 October.



Prof. Chandrasekhar, Senior Emeritus Professor, BITS Pilani and former Director, CSIR-CEERI, was the Chief Guest at the inaugural session. Prof. Shriganesh Prabhu from Tata Institute of Fundamental Research, Mumbai; Prof. Hartmut Roskos from Goethe University, Frankfurt, Germany; and Mr Saqib Sheikh from DST-IGSTC, India, were the Guests of Honour.

The Chief Guest, Prof. Chandrasekhar, described Terahertz Technology as one of the critical areas of electromagnetics and highlighted its importance by highlighting its immense possibilities in the fields of spectroscopy, medicine, etc. He also made the audience aware of the importance of organising such educational and research conferences regularly. The Guests of honour, Prof. Shriganesh Prabhu and Prof. Hartmut Roskos, also praised Dr Panchariya, Dr Niraj Kumar, and their team for organising this workshop on this important topic.

In their brief addresses, they emphasised the need for cooperation among reputed educational institutions and research organisations in research work. On this occasion, Mr Saqib Sheikh, while highlighting the background of R&D cooperation between India and Germany, said that this year is the golden jubilee year of cooperation between these two countries. Initially, Dr PC Panchariya formally welcomed the guests and made them aware of the major research areas of the institute. He said that through this workshop, strong scientific cooperation would be promoted between the two countries, leading to establishing coordination with the efforts being made at the global level in this important field.

Dr Anirban Bera, Chief Scientist and Chairman of the Organising Committee, gave information about the workshop and wished for its success.

The Chief Guest, Prof. Chandrasekhar, described Terahertz Technology as one of the critical areas of electromagnetics and highlighted its importance by highlighting its immense possibilities in the fields of spectroscopy, medicine, etc.

The workshop was organised with the objective of effectively exchanging knowledge among Indian and German scientists and strengthening joint research collaboration in this challenging technology in the future.



Release of the souvenir (abstract book) during the workshop

Dr Niraj Kumar, Principal Scientist and Indian Convener of this three-day international workshop gave detailed information about the technical sessions of the workshop.

During the inaugural session of the workshop, the guests also

released the souvenir (abstract book) of the workshop. All the guests appreciated the souvenir. After the inaugural session, the technical sessions were held.

During the workshop, a total of 29 lectures were delivered in three technical sessions including



Glimpse of Technical Session

a keynote lecture by the special guest and German coordinator, Prof. Hartmut Roskos, and several invited talks by other German and Indian scientists and learned experts on topics, such as terahertz imaging and medical applications of terahertz, its utility and importance in communications, spectroscopy, environmental monitoring, etc.

The workshop was organised with the objective of effectively exchanging knowledge among Indian and German scientists and strengthening joint research collaboration in this challenging technology in the future. Academicians, scientists, and researchers from several prestigious universities and research institutes from Germany and India participated in the workshop.

At the concluding session of this workshop, an MoU was signed between CSIR-CEERI and M/S ACST, GmbH, Germany, for joint research and development collaboration

between the countries. Also, an NDA was signed between CSIR-CEERI and M/S Toptica, Germany.

Dr PC Panchariya expressed his pleasure, mentioning that eminent scientists and academicians from both countries have come together on one platform through this workshop to discuss the industrial applications in this field. He also mentioned that the mutual scientific discussions provided insight to all the participants and research scholars about the research work being carried out in this field in both countries.

Finally, while proposing the vote of thanks, Dr Niraj Kumar said that this workshop would be a stepping stone for joint collaborative research in the area of Terahertz technology and will pave the way for progress in this field and its industrial applications, thereby giving a new direction to future scientific R&D in this area.

An MoU was signed between CSIR-CEERI and M/S ACST, GmbH, Germany, for joint research and development collaboration between the countries.

Events

CSIR Conducts Scientific Aptitude Assessment Exercise under the JIGYASA Programme

The Scientific Aptitude Assessment Exercise under CSIR's JIGYASA programme was conducted online on 20 December 2024. The students gathered in each of the 37 constituents' laboratories of CSIR and took part in the big scientific demonstration and experiment. The event was

unique because it was the first time these many students under the CSIR JIGYASA programme performed an experiment simultaneously.

The event was inaugurated by Dr Souvik Maiti, Director of the CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB),

“Education is not only attained by reading textbooks or giving exams; going beyond textbooks and regular curriculum is also important”, says Dr Souvik Maiti, Director of the CSIR-IGIB.



CSIR-JIGYASA Scientific Appitude Assessment Exercise

New Delhi. During his inaugural address, he welcomed all the online participants and thanked them for their presence. “Education is not only attained by reading textbooks or giving exams; going beyond textbooks and regular curriculum is also important”, Dr Maiti said. He praised the importance of such events in imparting practical skills to the students.

Dr Beena Pillai, Chief Scientist, IGIB, introduced participants to the theme of the event. Citing the example of Dr Mitali Mukerji, a former Chief Scientist at the CSIR-IGIB with notable achievements in the field of human genomics and personalised medicine,

Dr Pillai talked about the importance of DNA, Genomics and Molecular Biology in agriculture, healthcare and other sectors.

Students who gathered to perform DNA isolation experiments were given isolation kits and were briefed about the protocol by Dr Arya Sidharthan. Later, she performed a practical demonstration of DNA isolation, after which around 550 students isolated DNA from their saliva.

Dr Geeta Vani Rayasam, Outstanding Scientist & Head, CSIR-Human Resource Development Group (HRDG) thanked Dr Souvik Maiti and the IGIB team for convening this event. In her address, she said

that CSIR plays an important role not only in the development of scientific technologies but also in human resource development in the country, which aims to inculcate scientific temper. She also added that CSIR is also playing an important role in effective science communication with the common people. Dr Rayasam also asked students to think critically, go beyond textbooks and be involved in extracurricular activities, which would also help policymakers to think about various engaging activities for students.

Dr Suman Ray, Principal Scientist, CSIR-NIScPR; Shri CB Singh, Chief Scientist CSIR-NIScPR; and Ms Pratibha convened the event in CSIR-NIScPR wherein the students of Kendriya Vidyalaya, Gole Market, accompanied by their teachers gathered in

SV Marg campus of the CSIR-NIScPR. Ms Pratibha provided the background knowledge and cleared the doubts of students regarding DNA isolation.

Almost all the students successfully isolated DNA from their saliva, and the happiness on their faces was a testimony to how excited and satisfied they were after performing this experiment. After the experiment, a questionnaire was also given to students to select the winner of the Scientific Aptitude Assessment Exercise.

Shri CB Singh and Dr Suman Ray distributed participation certificates to the participants. Shri CB Singh, in closing remarks, thanked all the participants of the event and praised the efforts of CSIR-IGIB, CSIR JIGYASA team and other volunteers for active participation.

CSIR-IHBT Organises Agri Nutribiotech (ANB)

CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, organised the Agri Nutribiotech (ANB) Theme under the “One Week, One Theme” Programme on 5 November 2024.

The event brought together 100 farmers, entrepreneurs, startups, and industrialists from HP, Mumbai, Delhi, Punjab and Ladakh, and 91 students with six teachers from PM SHRI Kendriya Vidyalaya Palampur and Neugal Public Sr. Sec. School, Bindraban, as part of the CSIR-JIGYASA Programme.

The programme was graced by distinguished guests, including Prof. Shashi Kumar Dhiman, Vice Chancellor, HPTU; Dr Zabeer Ahmed, Director, CSIR-IIIM Jammu; and Madam Netra Meti, IAS (SDM Palampur). Dr Sudesh Kumar Yadav, Director, CSIR-IHBT, addressed the gathering. Dr Prabodh Kumar Trivedi, Director, CSIR-CIMAP, Lucknow, and ANB Theme Director, delivered the presidential address. Dr Kannan Srinivasan, Director, CSIR-CSMCRI, Bhavnagar, joined the OWOT programme virtually.

Students successfully isolated DNA from their saliva, and the happiness on their faces was a testimony to how excited and satisfied they were after performing this experiment.

Events



The programme featured the release of new aromatic plant varieties. Farmers received seeds of valuable aromatic crops such as German Chamomile, Lavender, Rosemary, Palmarosa, Aromatic Marigold, and floriculture crops Lilium and gypsophila.

An exhibition highlighted advancements in agrotechnology, biotechnology, and environmental technologies. Transfer of technology for millet panjeeri to Tashvika Foods and dry flower artefacts to local self-help

groups was done. Seven new startups, along with mentors, participated in the event. The event also included interactions with industry partners, promoting income opportunities through aromatic and floriculture farming and sustainable agricultural practices.

This initiative was aimed at empowering local farmers with sustainable practices and promoting the cultivation of aromatic and floriculture crops for increased economic benefits.

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Please direct all Subscription-related queries to:

Sales & Distribution Officer, NIScPR; **E-mail:** sales@niscpr.res.in

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