

CSIR's One Day as a Scientist (ODAS) from 21-25 July 2025

Unlocking the World of Metrology



In an inspiring effort to foster scientific temperament among school students, CSIR-National Physical Laboratory (CSIR-NPL), successfully organised “One Day as a Scientist”. The week-long event was a part of CSIR Jigyasa initiative, drawing inspiration from the visionary call made by Hon’ble Prime Minister Shri Narendra Modi in the 119th episode of Mann Ki Baat, where he urged students to “spend a day as a scientist.”

The programme opened a rare window into the world of scientific research for

over 300 students from schools across Delhi and neighbouring NCR regions. Daily proceedings began with an engaging scientist-student interaction, acquainting students with the research domains and scientific endeavours of CSIR-NPL. Throughout the day, participants were given an immersive experience that allowed them to walk in the footsteps of scientists, engage with cutting-edge technologies, and explore the transformative power of science. From precision metrology and timekeeping to

nanotechnology, materials science, and environmental studies, the students had the opportunity to witness first-hand the role of science in everyday life and national development.

The inaugural session featured an encouraging address by Prof. Venu Gopal Achanta, Director of CSIR-NPL, who emphasised the importance of early engagement with scientific environments. He urged students to remain curious, ask questions, and cultivate a spirit of innovation. “A questioning mind is the first step toward becoming a scientist,” he noted during his interaction with the enthusiastic young attendees. The participants were deeply inspired by the rare opportunity to engage in one-on-one interaction with Prof. Achanta.

A landmark moment during the week was the celebratory event of the CSIR-ODAS, held on July 24, which was graced by Dr Jitendra Singh, Hon’ble Union Minister for Science & Technology and

Vice President, CSIR. The ODAS 2025 programme was more than just a laboratory tour — it was a carefully curated educational experience that combined live demonstrations, motivational sessions on “Science for Nation Building,” and interactions with scientists. Students returned with widened horizons and a deeper appreciation for how science underpins modern life.

Teachers and parents accompanying the students were deeply appreciative of the initiative, acknowledging its value in connecting textbook knowledge with practical application. Many described it as a life-changing experience for the students, one that has the potential to ignite lifelong interest in science and research.

As the curtains draw on this enriching week, the seeds of scientific curiosity sown here are bound to bear fruit in the years to come.

Hands-on in Plant Science



CSIR-National Botanical Research Institute (NBRI), Lucknow, celebrated “One Day as a Scientist” week, which attracted the participation of 304 students,

comprising 292 participants through online registration and 12 *via* offline channels, showcasing a diverse range of academic backgrounds.



Each day commenced with an overview of the Scientific Exposition Centre and Herbarium Gallery, providing students with insights into the institute's historical contributions to botanical research and biodiversity. A standout moment on the second day featured motivating talks by Dr Ajit Kumar Shasnay, Director of CSIR-NBRI, and Shri Akhilesh Shukla, Sah-Prant Pramukh. They encouraged students to remain inquisitive and to explore the advancements in science.

The participants were divided into smaller groups, rotating through six major scientific divisions and specialised laboratories within CSIR-NBRI. Additional interactive modules featured Fragrance Research, Scientific Exposition, and Dry Flower Technology. Students had the opportunity to engage with several scientists and research scholars from the laboratory to gain valuable insights into advanced research projects presently going

on and the achievements of the past.

The programme included hands-on practical experiments, ranging from DNA isolation and electrophoresis to microbial staining, pharmacological assays, chlorophyll assessment, air quality monitoring, herbarium preparation, fungal and bacterial staining, plant sample collection and identification, essential oil extraction, and several others. These activities provided participants with a comprehensive understanding of the scientific inquiry process, from hypothesis formulation to experimentation and data analysis.

A notable part of the ODAS programme was the introduction of interactive learning kits, including the Brain Cap and Leaf Cube, purchased from the Indrani Balan Science Activity Centre at IISER Pune. These kits significantly enhanced the learning experience and received positive feedback from

participants for our “Lab@Bench” concept of learning. Students also engaged in DIY experiments from dry flowers for making value-added products, popular science discussions on cinema and science history, and entertaining science-related activities such as foldscope, designed to make learning both effective and

enjoyable. The combination of structured academic exposure and creative engagement ensured that every participant departed with a valuable and memorable learning experience.

The successful implementation of ODAS at CSIR-NBRI was made possible by a committed team of the institute.



Exploring Cutting-Edge Instrumentation

The “One Day as a Scientist” outreach programme organised by the Jigyasa team at CSIR-CSIO, Chandigarh, emerged as a vibrant platform to spark scientific curiosity amongst school children. The programme was attended by 385 students and 15 faculty members. With a blend of hands-on experiments, lab tours, inspiring talks, and creative

challenges, the five-day event brought science alive in engaging and meaningful ways.

The programme was inaugurated by Prof. Anil Kumar Tripathi, Director, IISER Mohali, who underlined the critical importance of nurturing a scientific temper among young minds. The first day featured a diverse set of activities, including



a talk on “The Science Behind Sleep” by Dr Kawalpreet Kaur, CSIR JIGYASA virtual lab by Dr Neerja Garg, a robotics cart simulation by the IEEE student chapter, and an exciting DIY forensic challenge, wherein students learned about testing of metals and paper chromatography. Visits to the mechanical, electronics, electrical, biomedical, IoT and robotics laboratories allowed students to witness real-time research and instrumentation in action.

Day two delved into energy and personal development. Students gained insight into cutting-edge topics like Energy Storage Systems and Green Hydrogen through sessions led by Dr Pooja Devi.

A motivational talk on positive self-talk and self-improvement by Dr Dhairya Singh Arya complemented the scientific agenda. Students participated in experiments such as coin cell assembly and chemical chameleon reactions, and explored career guidance tools through the Compass portal, co-hosted by the WIE and IEEE student groups. The visit to the 3D metal printing facility, materials and electronics

laboratories spiked the energy of students. The third day continued with an inspirational talk by Dr Inderpal Singh, who discussed the life of a scientist in India, followed by an interactive session on neuroscience. Students enthusiastically participated in hands-on experiments like elephant toothpaste and vanishing water, and engaged in educational crossword puzzles focused on scientific innovations.

These sessions, along with exposure to the drone lab, aircraft lightning systems, and mechatronics/automation lab at ISTC, made science both fun and intellectually stimulating. On day four, the focus shifted to optics and physics, with engaging talks by Dr Inderpreet Kaur and Dr Neha Khatri on optical science and the theory of relativity. Students visited the Optics, Instrumentation, and Electronics Labs, conducting experiments to see science in practice. A key moment was the virtual address by Hon’ble Minister Dr Jitendra Singh (S&T, Govt of India), who encouraged students to take up careers in science and innovation.

The final day showcased emerging technologies with Dr Aparna Akula's session on Intelligent Sensing Systems, followed by another stimulating discussion with Dr Kawalpreet Kaur. Students explored forensic science through paper chromatography and participated in a mock crime-solving activity, applying their learnings creatively. Visits to the applied materials

and instrumentation lab, water treatment plant, solid waste composting sites, and other advanced labs provided a well-rounded experience of the research ecosystem in the institute.

The ODAS programme at CSIO was a celebration of curiosity, creativity, and collaboration, reaffirming CSIR-CSIO's dedication to fostering a new generation of scientists and innovators.

Unlocking the Science of Petroleum



The week-long “One Day as a Scientist” at CSIR-Indian Institute of Petroleum (CSIR-IIP), Dehradun, engaged approximately 500 students from Classes 8th to 10th from different schools (Government & Private) of Uttarakhand and Uttar Pradesh. The students visited the research labs and got a real feeling of ongoing research activities, and also directly interacted with scientists at the CSIR-IIP.

The students got the opportunity to interact with Dr Harender Singh Bisht, Director, CSIR-IIP. Dr Bisht has motivated the students for science and also made them aware of the environment &

energy scenario of the nation as well as the world. Dr Aarti, coordinator of CSIR-IIP Jigyasa 2.0, described the institute's achievements in energy, environmental issues, and sustainable development. Dr Kamal Kumar, co-coordinator of CSIR-IIP Jigyasa 2.0, provided an overview of the JIGYASA programme, describing its goals and how it seeks to connect school students with scientists and research organisations.

During the programme, scientists from CSIR-IIP have interacted with the students and given insight about the advanced process and technology developed, as well as their futuristic aspects. They also urge that every technological innovation begins with fundamental chemistry, encouraging students to think creatively and approach things from fresh perspectives.

The students visited the different plants and research laboratories, viz. FT-IR, GC, XRD, TGA, Glass Blowing Laboratory, Room Temperature Bio-Diesel pilot plant.

During the interactive question-and-answer sessions, students shared their ideas, asked insightful questions, and spoke about their future goals. The scientists inspired them to view science not just as an academic subject, but as a powerful tool for positive societal impact. Many students showed special interest in the clean fuel innovations and waste-to-energy solutions being developed at CSIR-IIP.

The team at the institute played a crucial role in the successful execution of the programme, putting in dedicated and



commendable efforts to ensure its smooth coordination and impactful delivery.

Exploring Science, Technology and Innovation

CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, successfully organised a week-long programme of “One Day as a Scientist”. This unique programme was designed to ignite scientific curiosity, innovation, and awareness among students of Classes 8 to 10 by providing them with a real-time experience of scientific work culture, cutting-edge technologies, and direct interaction with scientists.

The programme witnessed an overwhelming participation of 435 students from across Assam and the North-Eastern region, distributed over five days. Each day began with an inaugural and introductory session, welcoming the young minds to the vibrant scientific ecosystem of CSIR-NEIST. The aim was to create a bridge between school

education and scientific research by immersing students in the day-to-day workings of one of the country’s premier R&D institutes.

The core of the programme featured hands-on experiments, where students were divided into 11 different theme-based groups, each mentored by dedicated scientists and researchers of CSIR-NEIST. The activities included:

- DNA Extraction, giving insights into molecular biology
- Laser Engraving and CNC Technologies, offering exposure to precision tools
- Universal Testing Machine (UTM) demonstrations to explain material strength
- Glass Blowing, a fascinating combination of science and craftsmanship
- Programming and AI, introducing students to the future of technology



- Membrane Technology and Mechatronics, connecting environmental and robotic innovations
- Basic Chemistry & Biology Experiments, sparking lab-based curiosity
- LED Bulb Manufacturing, promoting the “Make in India” spirit

Post the experimental sessions, students were taken on guided lab visits to advanced instrumental facilities of CSIR–NEIST, such as Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), Nuclear Magnetic Resonance (NMR), X-ray Photoelectron Spectroscopy (XPS), HPLC, GC-MS, and more. These demonstrations were handled by trained instrument operators who explained the science, application, and significance of each sophisticated instrument

in research and industrial development.

The day culminated with the highly interactive “Face-to-Face with Scientist” sessions. Eminent scientists from various divisions engaged in vibrant discussions with students, answering their questions, motivating them to pursue careers in science, and sharing real-life experiences of research and innovation.

The programme turned out to be a grand success, bringing the essence of real-world science closer to young students. It not only strengthened scientific temper among the youth of the North-East region, but also supported the national mission of Scientific Social Responsibility (SSR). The initiative is a testimony to CSIR’s commitment to nurturing the scientific dreams of India’s future generation and empowering them with knowledge, confidence, and inspiration.

One Day as Scientist Programme of CSIR-Jigyasa at CSIR-CSMCRI

A total of 451 students participated in the “One Day as a Scientist” at CSIR-Central Salt and Marine Chemical Research (CSIR-CSMCRI), Bhavnagar. These students came from all over Gujarat state (Ahmadabad, Amreli, Anand, Bharuch, Bhavnagar, Devbhumi Dwarka, Jamnagar, Kachchh, Mahesana, Rajkot, Surat, Vadodara, and Valsad districts), and a few students also came from Rajasthan (Dungarpur). This programme was also participated in by a large number of students from the Bhavnagar rural areas.

The One Day As a Scientist programme was focused on laboratory visits, popular science lectures, hands-on experiments, discussion and interaction with scientists, fun activities, and a quiz. During this programme, popular science talks were focused on the core area of research activities of the institute (salt and marine chemicals, seaweed cultivation and utilisation, reverse osmosis, utilisation of sophisticated instruments (SEM and TEM), tissue culture, etc.).

School students had seen the general-purpose instruments as well as sophisticated instruments during a laboratory visit. Demonstration and use of different instruments, like analytical weighing balance, centrifuge, rotary evaporator, microscopy, spectrophotometer, pH meter, EC meter, gas adsorption



instrument, sonicator, fume hood, column chromatography, etc. During hands-on training and experiments, students learned the different reactions, like acid–base neutralisation, using natural indicators (turmeric powder and hibiscus flower), precipitation reaction (double displacement), complex formation reactions, reaction of acids with metals to evolve hydrogen, and chemical chameleon reaction to understand the redox changes.

Students got trained and aware of the purification process by adsorption techniques (adsorption of industrial dyes with activated charcoal). Furthermore, school students prepared the microscopic slides and took the observation with different microalgal species, slide preparation of hibiscus pollen grains, isolated the DNA extraction from banana pulp, fabricated the flat-sheet PVDF membrane by

Non-solvent Induced Phase Separation (NIPS), separated two immiscible liquids using a separating funnel, applying the principle of density and solubility differences.

Students also did the chemical chameleon experiment,

highlighting the colour changes of Potassium Permanganate (KMnO_4) at different oxidation states; the elephant toothpaste experiment, illustrating the reduction of KMnO_4 and the evolution of oxygen gas. Students got hands-on experience of streaking bacteria on agar plates, staining bacterial slides, and how to differentiate them based on their colour by using a microscope.

Demonstrations were also made for oxygen separation from air, separation of carbon dioxide and other flue gases, preparation of molecular sieves, and separation of gases using molecular sieves. Students are also seen in the in-house facilities of seaweed and micro-algae.



Exploring Environmental Challenges And Sustainable Solutions

CSIR-National Engineering Research Institute (CSIR-NEERI), Jorhat, during its “One Day As a Scientist” programme, provided 590 students from Maharashtra, Telangana, Madhya Pradesh, and Chhattisgarh a unique opportunity to step into the role of a scientist for a day.

The programme included laboratory visits, interactive sessions with scientists, and hands-on experiments in water and soil analysis, chemistry, and physics. Students explored environmental challenges and sustainable solutions through

practical demonstrations and engaging activities. The initiative successfully ignited curiosity, critical thinking, and interest in science and technology among students, motivating them to consider careers in research and development.

The event witnessed the active involvement of students from rural and urban areas, including Zilla Parishad Schools, Jawahar Navodaya Vidyalayas, Kendriya Vidyalayas, Public and Private Schools, ensuring inclusive participation. Scientists and mentors at CSIR-NEERI guided students with live demonstrations,



further deepening their understanding of environmental issues.

The programme concluded with an interactive feedback

session, where students shared their experiences and expressed an enthusiasm for pursuing environmental science and engineering as a career path.

Hands-on with Technology

Celebrating “One Day as a Scientist”, CSIR-CEERI, Pilani, opened its doors to young minds from 17 schools across Rajasthan, welcoming 310 students over five days.

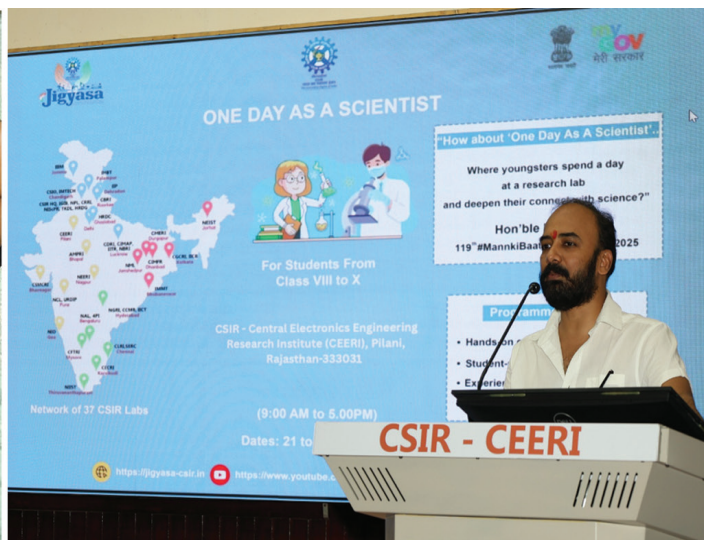
The students were provided with a glimpse into the life of a scientist at CSIR-CEERI, to expose them to the research in Electronics and allied technologies. The programme inspired the students towards careers in science, technology, and innovation, and promoted a curious temperament, scientific thinking, creativity, and societal relevance of research.

Congratulating the students, Dr PC Panchariya, Director, CSIR-CEERI, opined that this programme is an effective effort towards connecting the students to the real world of research and innovation. He said that we are proud that CSIR and CSIR-CEERI

are playing an active role in this national initiative and are doing a great job of inspiring future scientists. Jigyasa coordinator, Shri Pramod Tanwar, apprised the students about the background and utility of the programme, and inspired the students to uplift their scientific temper and wished them a bright future.

Each day, a group of 60–65 students followed this structured programme comprising welcome and inaugural sessions, sessions with scientists, lab visits, demos and do-it-yourself experiments.

A visit to the Technology legacy of CSIR-CEERI and the devices and system prototypes through vintage electronics, historical photographs, and working models enabled students to walk through the developmental phases of the Lab. The students visited various cutting-edge laboratories in



smaller batches to ensure better interaction and understanding.

Students and teachers expressed excitement and fascination, with many expressing a desire to pursue careers in science and research. They appreciated the exposure and said

it helped bridge classroom learning with real-world applications.

This event was a transformative experience for all the participants. We look forward to continuing such impactful programmes under Jigyasa and nurturing the next generation of Indian scientists.

Exploring Advanced Materials and Smart Processes

“One Day as a Scientist” week at CSIR-Advanced Materials and Processes Research Institute (CSIR-AMPRI), Bhopal, witnessed enthusiastic participation of 465 students from 43 schools, along with teachers across five days of interactive learning and scientific exploration.

The programme was designed to bridge classroom learning with real-world science, inspire innovation, and motivate students to pursue careers in science and technology. Information about the event was widely circulated through emails, websites, and social media platforms. Each day followed a

structured schedule comprising registrations, welcome sessions, lectures by scientists, interactive discussions, quizzes, debate and speech competitions, scientific puzzles, fun activities, laboratory visits, and valedictory ceremonies.

Day 1 began with a centralised virtual inaugural address by Dr Vinay K Nandicoori, Director, CSIR-CCMB, organised centrally, followed by a welcome lecture from Dr Satanand Mishra, who introduced CSIR’s contributions and AMPRI’s achievements. Technical talks included Dr Sarika Verma’s lecture on bamboo-based sustainable designs and Dr Ram Kumar’s session on atoms,



molecules, and nanomaterials. Students also interacted with Dr Gaurav Kumar Gupta and visited laboratories such as the polymer lab and mechanical workshop. Quiz winners were felicitated, and the day concluded with group photographs and student feedback.

Day 2 featured a debate on “Are Humans Responsible for Global Warming?” and lectures given by Dr Avinash Tiwari on polymers and sustainability, and Dr Archana Singh on the environmental impact of microplastics. The sessions highlighted pressing environmental concerns and engaged students in thoughtful discussions.

Day 3, lectures by Dr Abhishek Pandey on additive manufacturing and Dr Dipen Kumar Rajak on metal foams introduced students to cutting-edge material science research. Lab visits included demonstrations of 3D printing, Raman spectroscopy, and shape memory polymers, offering hands-on experiences that complemented theoretical learning.

Day 4 began with Dr Satanand Mishra’s lecture on the Internet of Things and a debate on the

impact of social media. Students explored facilities such as Bamboo Baithak, Electroplating Lab, and Raman Spectrometer setups. Talks by Dr Tamal Chatterjee on solar fuels and Dr TS Shabi on radiation shielding materials further expanded students’ perspectives on energy and safety materials. Debate winners were felicitated during the valedictory session.

Day 5 covered advanced topics such as Artificial Intelligence by Dr Satanand Mishra, Magic of Sound by Dr Kirti Soni and “Wastewater Research” by Dr M Chandra Shekhar Nayak. Students actively participated in debate, quiz, and speech competitions, explored laboratories, and shared positive feedback during the closing ceremony.

Overall, the programme combined popular lectures, interactive discussions, fun-based activities, and guided laboratory visits, creating a vibrant platform for students to learn, question, and experience the excitement of science. Students are also provided with an opportunity and a platform

to share their scientific ideas. The active engagement of scientists as mentors, coupled with the students' enthusiasm, made the programme a resounding success. Students expressed their gratitude

and requested that such initiatives to be organised more frequently. The event truly reflected CSIR's commitment to nurturing young scientific minds and inspiring the next generation of innovators.

R&D

Scientists Spot 'Troublemaker' Immune Cells driving inflammation

Scientists from CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow, have reported a significant finding that could help in the development of new treatments for chronic inflammation.

Our blood consists of three major types of cells, red blood cells, white blood cells and platelets. White blood cells are the body's primary immune defence system and help fight off infections by bacteria, viruses and parasites. The key players are neutrophils that constitute 60–70% of all WBCs. They engulf and clear the pathogen, put out chemicals called cytokines that summon other cells to the site of infection and clear cellular debris once the infectious agent is no longer present. In their short lifespan of hours to a few days, they pack in a lot of action! However, when these cells become overactive or remain in the body for too long, they can cause inflammation, leading to diseases such as fatty liver disease, rheumatoid arthritis, lupus, psoriasis, and even severe cases of COVID-19.

A recent study led by Dr Sachin Kumar and his team at CSIR-CDRI, published in the prestigious

international journal *Cell Reports*, offers fresh insights into the role of neutrophils. What explains the rogue behaviours of neutrophils in some physiological conditions? Dr Kumar and his team have shown that not all neutrophils are equal. In the mouse model, there is a sub-population of neutrophils that live longer, stay as mature cells longer, and are far more aggressive in causing inflammation. These cells are especially abundant in the liver and tend to appear in both short-term and long-term inflammatory conditions, such as peritonitis (inflammation in the abdominal area) and Non-alcoholic Steatohepatitis (NASH), a severe liver disease. These neutrophils are characterised by special cell surface markers designated as CD11b+Ly6G+Sca-1⁺ (hereafter referred to as Sca-1⁺ neutrophils).

Dr Sachin Kumar explained that Sca-1⁺ neutrophils can produce Reactive Oxygen Species (ROS), toxic enzymes, and form structures called neutrophil extracellular traps to fight off infection, like other neutrophils—but Sca-1⁺ neutrophils that persist are associated with more tissue-damaging behaviours than regular neutrophils.

The researchers used advanced techniques, including high-resolution microscopy and cell sorting, to closely study these cells. They observed that inflammatory signals and metabolic stress (such as poor liver health) can cause regular neutrophils to transform into Sca-1+ neutrophils.

Interestingly, these cells were found to store more lipids (fats) inside them, hinting that their activity could be influenced by changes in fat metabolism. This might be why the occurrence of Sca-1+ neutrophils is more common in fatty liver disease.

Even more promising, when the researchers blocked the Sca-1 protein on these cells, the harmful effects — like tissue damage and excess inflammation — were reduced. This suggests that Sca-1 is not just a marker, but may play an active role in driving inflammation.

What makes these findings impactful is that they give researchers an opportunity to now look for drugs that could specifically target a subpopulation of neutrophils.

Dr Radha Rangarajan, Director of CSIR-CDRI, emphasised the value of this finding: “Modulating inflammation is particularly difficult because we lack the tools to specifically stop harmful cellular processes such as neutrophils that continue in a fight-infection mode. This study opens up the possibility that disabling a specific type of neutrophils could drive down inflammation without affecting the body’s natural defences.”

In humans, Sca-1-like proteins called CD177⁺ and Ly6E⁺ are expressed on neutrophils. It has been shown that such neutrophils increase during infections and inflammatory diseases. Further research is warranted to evaluate the role of such neutrophil subpopulations in inflammatory conditions. This could pave the way for safer, more targeted treatments for inflammatory and autoimmune diseases.

Reference

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Lectures

ASM Editorial Director at CSIR-IGIB and CSIR-CCMB

Microorganisms know no borders, and neither should the conversations that shape our understanding of them. In this spirit, the American Society for Microbiology (ASM) launched Microbial Quorum in July 2025, an initiative aimed at fostering region-specific scientific dialogue and strengthening

international collaborations in microbial sciences. The inaugural sessions were hosted in collaboration with two premier CSIR institutions: CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB) in New Delhi and CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB) in Hyderabad.



On July 11, Dr Anirban Mahapatra, Editorial Director of ASM Journals, along with Dr Aditi Jain, ASM's Scientific Partnerships Manager (India), were hosted by Profs. Bhupesh Taneja, Sheetal Gandotra and other faculty members at CSIR-IGIB, Dr Mahapatra's talk, "The Microbial Century," set the tone for this scientific series by reflecting on the influence of microbes in shaping the future of science and society, and India's vital role in steering that future.

The second session, held on July 28 at CSIR-CCMB, was hosted by Drs Sriram Varahan, Vinay Nandicoori and Manjula Reddy. Dr Mahapatra spoke on "The Coming Microbial Revolution," highlighting the emerging directions in microbiology and its growing relevance across sectors.

Both visits included productive interactions with the faculty and students. ASM extended its sincere appreciation to the teams at CSIR-IGIB and CSIR-CCMB for their warm hospitality and for enabling such meaningful scientific engagement.

CSIR-AMPRI Organises Lecture under Expert Lecture Series

CSIR-AMPRI, Bhopal, organised lectures under "Expert Lecture Series" (ELS) from Eminent/Distinguished personalities in the field of Science & Technology at CSIR-AMPRI. Under this series, Dr RK Jain (Former Director CPPRI & KNHPI), Technical expert UNIDO, New Delhi, was the

guest and delivered a lecture on 21 July 2025.

Dr Mohd Akram Khan, Chief Scientist, CSIR-AMPRI, Bhopal, briefed on the purpose of organising the expert lecture series. He highlighted that the purpose of this series is to connect with eminent persons in the



field of Science & Technology and potential collaboration to contribute to society/industry in the area of CSIR-AMPRI expertise.

Dr Thallada Bhaskar, Director, CSIR-AMPRI, in opening remarks, highlighted that essential raw materials/minerals for major applications are being imported. Emphasis should be given to transform available raw materials/minerals in the country into/ utilised products to cater for the requirements of the country.

A video film based on CSIR-AMPRI's facilities and expertise was screened, and Dr Chetna Dhand, Principal Scientist, CSIR-AMPRI, provided a brief introduction of the Guest.

Dr RK Jain delivered a lecture on "Innovative circular economy approach towards converting lignocellulosic biomass for sustainable packaging materials and a source of bioenergy". He shared his views on sustainability. He talked about minimising environmental impacts using renewable resources without

creating a burden on the environment. He emphasised the use of available biobased resources for the preparation of biodegradable plastic. He mentioned that paper is one of the potential alternatives to single-use plastic. He explained work on the take, make and dispose concept for supporting the circular economy. Through his lecture, he elaborated on the concept of bio-refinery, lignocellulosic biomass, sustainable packaging materials, bio-fuels, and flexible packaging from food-grade polymers.

Dr Jain also visited various laboratories/facilities, viz. Electrochemical Additive Manufacturing Lab, Raman Spectroscopy Facility, High-Resolution Transmission Electron Microscopy Facility, Biosensor Lab, Bamboo Composite Structure 'Baithak', Centre for Advanced Radiation Shielding & Geopolymeric Materials and seen various products developed by CSIR-AMPRI viz. hydrogen cylinder, 3D Printed Metallic Arts,

Shape Memory-based Fire Alarm, Aluminium Foam & Metal Matrix Composite (MMC), X-Ray Radiation Shielding Tiles, Biosensors, Antimicrobial Coatings, Bio-Inspired Materials for Biomedical Applications, Bamboo Composite, Green Building Materials,

Geopolymeric Construction Materials, Water Filter, AI-based Water Quality Assessment.

Dr Sandeep Singhai, Senior Principal Scientist, moderated the programme and proposed a vote of thanks.

Events

CSIR-CDRI Organises Health Awareness and Free Health Check-up Camp under the Scientific Social Responsibility (SSR) of Institute



As part of its ongoing commitment to community outreach and scientific awareness under the aegis of Scientific Social Responsibility (SSR) of the Institute, CSIR-CDRI, Lucknow, organised a Health Awareness Programme and Free Medical Screening Camp under the CSIR-JIGYASA Programme on 30 July 2025 at Primary School, Nai Basti, Dhanewa, Malihabad, Lucknow.

The event aimed to educate rural populations about lifestyle-related diseases such as obesity, diabetes, and hypertension, which are becoming increasingly prevalent across all age groups. The initiative focused on the importance of early detection,

preventive care, and informed lifestyle choices.

A dedicated 15-member team of CSIR-CDRI, including scientists, technical staff, and PhD scholars, conducted health screenings, including blood pressure, blood sugar, and Body Mass Index (BMI) checks. Informative sessions were held to promote balanced nutrition, regular physical activity, and mental well-being and a special session on menstrual hygiene and women's health.

The camp witnessed an overwhelming response, with over 170 villagers availing themselves of the free health check-up services. Participants received personalised health guidance

and were encouraged to adopt healthier habits for long-term well-being.

The programme was successfully conducted with active support from the school's Principal and other teachers. Gram Pradhan,

Mr Vipin Kumar, was also present during the programme along with other local community members.

The enthusiastic participation of residents reflected a strong interest in health education and preventive care.

Phenome India-CSIR Health Cohort Knowledgebase (PI-CHeCK) Health Camp Report (Phase II)

The Phenome India-CSIR Health Cohort Knowledgebase (PI-CHeCK) is a flagship initiative of the CSIR, designed to build a longitudinal health cohort of over 10,000 employees, retirees, and spouses from across 37 CSIR laboratories spanning 17 Indian states and two Union Territories.

The primary objective of the programme is to develop India-specific risk prediction models for cardio-metabolic disorders such as diabetes, cardiovascular diseases, and non-alcoholic fatty liver diseases by gathering multi-dimensional data across clinical, biochemical, imaging, molecular, lifestyle, and dietary domains.

Health camps, like this one organised at CSIR-NIScPR on 11-12 July 2025 through the PI-CHeCK initiative (Phase II), are integral to achieving “Swasthya Bharat, Viksit Bharat” (Healthy India, Developed India), fostering personalised healthcare strategies rooted in the unique Indian phenotype.

The health camp aimed to integrate baseline health metrics into the PI-CHeCK cohort, to enhance early detection



and prevention strategies for cardio-metabolic conditions, and foster inter-lab collaboration and health awareness within the CSIR ecosystem.

Altogether, 72 employees including scientists, technical staff, and support staff have participated in the health camp. Apart from CSIR-NIScPR employees, some employees from other CSIR labs and units like CSIR-NPL, CSIR-HQ, and CSIR-RAB have participated in the health camp organised at CSIR-NIScPR.

Tests and Sample Collection

Over two days, participants underwent a comprehensive suite of evaluations, including vital signs & anthropometry (blood pressure, weight, height, body circumference); body composition



Events

(BMI, mass composition, dynamometry); cardiovascular screening (ECG, heart rate variability); liver health (transient elastography (FibroScan)); respiratory assessment (spirometry, oscillometry); basic hematology (phlebotomy, complete blood count, blood biochemistry); and lifestyle-related assessments (dietary habits evaluation, Prakriti assessment (Ayurvedic body-type evaluation)).

Outcomes and Key Achievements

- Collected data contributed to the PI-CHeCK clinical knowledgebase and bio-repository

- Raised awareness of participants on early disease detection and lifestyle optimisation
- Provided opportunity to the employees from other CSIR labs and units to participate in the PI-CHeCK health camp and contribute to the knowledge base and bio-repository
- Successful completion of all planned tests within the two-day period with no logistical or coordination delays

The event was marked by systematic planning and execution by the nodal PI-CHeCK lab (CSIR-IGIB) and the CSIR-NIScPR coordinating team; smooth coordination among technicians, phlebotomists, physicians, and sampling teams; and efficient scheduling, sample collection, testing, and preliminary feedback. Beyond immediate outcomes, the initiative reinforces CSIR's long-term vision to create India-specific health insights and timely risk interventions, advancing the frontiers of precision public health across the nation.



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