



मानव संसाधन विकास समूह
Human Resource Development Group
वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Council of Scientific & Industrial Research

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June 2025

CSIR Jigyasa Newsletter



36

Programs
Conducted

3633

Students
Benefitted

349

Teachers
Benefitted

22

Labs
Covered



Message from DG, CSIR & Secretary, DSIR



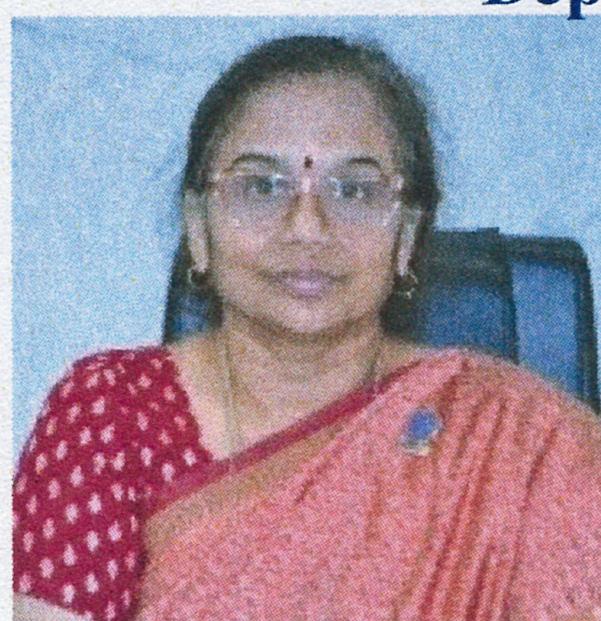
सत्यमेव जयते

डॉ. (श्रीमती) एन. कलैसेल्वी
सचिव
वैज्ञानिक और औद्योगिक अनुसंधान विभाग, तथा
महानिदेशक
Dr. (Mrs.) N. Kalaiselvi
Secretary
Department of Scientific & Industrial Research, and
Director General



सौरभभाईर
CSIR
भारत का नवाचार इंजन
The Innovation Engine of India

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
Government of India
Ministry of Science and Technology
Council of Scientific & Industrial Research
Department of Scientific & Industrial Research



Message

Dear Students,

With immense pride and joy, I connect with each of you through the CSIR Jigyasa Newsletter. The Jigyasa program was launched in 2017, under the visionary guidance and direction of the Hon'ble Prime Minister of India and President, CSIR, who emphasized the need for scientist – student connect and nurture scientific temper in young minds across the nation. Since its inception in 2017, CSIR Jigyasa programme has grown into one of the largest outreach programme of CSIR and the most impactful science outreach initiatives in the country benefitting almost 13,50,000 students and 80,000 teachers PAN India.

Each scientist was once a student just like you—already curious and deeply eager to learn. A researcher's journey, from a student to the laboratories, is an inspiration to many young minds. I feel a sense of pride and joy as I see how the CSIR Jigyasa programme is illuminating the path towards the realms of science, technology, and innovation for the young aspiring students. Under this initiative, CSIR aims to demonstrate that science is not simply something that resides within the pages of textbooks but a fun-filled adventure that is driven by wonder and yearning to explore. Your engagement in activities such as visiting the labs, attending lectures, and participating in practical sessions, interacting with researchers and scientist, reflects the true spirit of scientific exploration, which our country values immensely.

As you embark on your scientific journey, remember: every great discovery begins with a question. Continue to ask and explore, for science is not solely about finding answers, it's about the courage to ask, to explore, and to imagine a better world.

I encourage you to dream big, stay curious, and never stop learning. The future of Indian science is in your hands—and it looks incredibly bright.

With best wishes and great hope,

July 21, 2025
New Delhi

(N. Kalaiselvi)

Message from Head, CSIR-HRDG

Dear Students,

It gives me great pleasure to introduce the CSIR Jigyasa Newsletter, a space dedicated to celebrating your spirit of inquiry, your participation, and the incredible journey we've been on together for over 8 years. Through this platform, we hope to keep you informed, inspired, and connected with us. As you flip through these pages, I hope you see a reflection of your own curiosity, enthusiasm, and the scientific spirit that drives this country forward.

Taking the vision of the Hon'ble Prime Minister of India and President of CSIR, the Jigyasa Program, launched in 2017, was born out of a simple but impactful idea: science must not be restricted to the closed doors of laboratories but must reach the classrooms, the minds, and the dreams of every young student across India. And with this conviction, we initiated this endeavour to bridge the gap between scientists and students.

Since its inception, Jigyasa has grown steadily and I am sure it will become a national movement. I'm proud to share that over the past eight years, the program has benefitted more than 13.5 lakh students and 80,000 teachers through hands-on activities, lectures, lab visits, festivals, and direct scientist interactions across our CSIR laboratories.

To ensure learning is inclusive and accessible to all, we took a transformative step of developing the CSIR Jigyasa Virtual Lab Platform—a digital space that brings scientific learning into classrooms and homes across India in the year 2021. This platform features more than 798 interactive simulations, games, quizzes and other learning modules for the students to learn at their comfort especially targeting the students who may not have the opportunity to visit a lab in person. Notably, it also hosts 401 Indian Sign Language (ISL)-enabled content, a first-of-its-kind initiative in India, ensuring that students with hearing impairments can also engage meaningfully with scientific content. With this, we reiterate our belief that science belongs to everyone. We've also formalized over 7 MoUs with leading industrial and educational organizations across the country to take this mission further, together.



Dr.(Mrs.) Geetha Vani Rayasam
Head, CSIR-HRDG

While traditional outreach remains our core, we have also embraced new initiatives such as the Jigyasa Vigyan Mahotsav (JVM) 2022, a National Level Scientific Creativity Competition, and the EPIC (Empowering Pupil Innovation and Creativity) Hackathon 2024, which has fostered a culture of curiosity and fostered the students' potential to develop creative solutions to the nation's societal challenges through S&T by giving them a two-month summer internship in CSIR labs. In a similar vein, our Futuristic Fridays lecture series on Artificial Intelligence in Biology and Healthcare is giving young students fresh perspectives.

Looking ahead, we aspire to make Jigyasa more inclusive, more technologically empowered, and more embedded in everyday school education. We want to ensure that every student in India, not just in urban areas but also in rural areas and far-flung regions, has access to scientific exposure.

As we continue this journey, I express my heartfelt gratitude to each one of you—students, teachers, scientists, partners, for believing in the vision of Jigyasa. Your enthusiastic participation and efforts has given this program its true meaning.

Stay curious and never stop exploring.
Dr. Geetha Vani Rayasam

Eminent Scientist Column

Quantum Technologies and their Applications

Technologies that have become an integral part of our daily lives are based on the developments in science and engineering over the decades. 80 years ago, the first electronic digital computer was built with vacuum tubes and circuitry. The developments in semiconductors, integrated circuits, programming languages, and operating systems, among others, have helped realize miniature, less energy-consuming, and more powerful computers. Simultaneously, the invention of the LASER about 65 years ago led to the growth of photonics, fiber optics, and allied areas that helped developments in information technology.

The bottom line for scientists, science enthusiasts, engineers, and technocrats is that interdisciplinary advances are crucial for realizing technologies that affect the quality of our lives.

Next generation technologies: Quantum phenomena like superposition, entanglement, electromagnetically induced transparency, etc. are revolutionizing the fields of computing, communication, and sensing as we know them.

At the heart of the current developments are the advances in the areas of atomic physics and material sciences, especially superconductors and semiconductors, among others. Quantum computing, for its possible applications in cryptography, performing calculations that are impossible for a classical computer to complete in reasonable time for designing materials, drugs, weather prediction, etc, has captured the imagination of general public and researchers alike.

What are Qubits? Qubits made of superconducting materials, atom or ion traps, or non-classical light sources are leading the research efforts with the focus on increasing the number of qubits for practical computing, error correction codes, hybrid quantum computer and high performance classical computer to maximize the benefits of high-power computing.

Non-classical light sources emitting single photons or entangled photons or in special states like the orbital angular momentum states or NOON states have led to the demonstration and commercialization of quantum communication systems that offer high security.



Prof. Venu Gopal Achanta
Director, CSIR-NPL
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Recent trends in quantum communication are to realize on-chip sources, modulators, transmission, and detection. While computing and communication caught the popular imagination, quantum sensors are quietly becoming ubiquitous.

Quantum Sensors: They make use of the quantum properties of materials including atoms or ions, superconductors, colour centres or single defects in semiconductors, diamond, 2-dimensional materials etc. They offer sensitivities much lower than that achieved by classical sensors and are thus much sought after.

Some of them though are highly sensitive, require special conditions like very low temperatures requiring cryogenics, vacuum peripherals, highly specialized electronics. The quest to make quantum sensors that work at near ambient conditions led to a few technologies. Some of these like the Rydberg atom based sensors and nitrogen vacancy (NV) in nanodiamond have demonstrated considerable promise.

What are Rydberg atoms? These are atoms in which an electron is excited to a very high energy level defined by a large principal quantum number (n). Being far from the nucleus, such an excited electron is weakly bound and has very long lifetime, such atoms are much larger than the normal atoms, and experience strong interaction with other Rydberg atoms, as well as external electric and magnetic fields.

...continued on next page

Eminent Scientist Column

Quantum Technologies and their Applications

The quantum sensors for electric and magnetic fields make use of these ultrahigh responsive atoms and have demonstrated sensitivities of the order of 10^{-11} V/m/ $\sqrt{\text{Hz}}$ and 10^{-15} T/ $\sqrt{\text{Hz}}$. In addition, to electrometry and magnetometry, radio-frequency (RF) sensing, and RF-mixing have been demonstrated with less than Hz sensitivity in GHz frequency dynamic range. By using a combination of lasers of different wavelengths, the excited states can be prepared to have ladder-like or lambda-like and other energy levels.

This helps make use of different quantum phenomena like electro-magnetically induced transparency (EIT). In EIT, while the strong pump laser beam causes superposition of energy levels, a weak probe pulse results in destructive interference leading to weakened absorption or increased transmission. Some of the examples of Rydberg atoms are Rubidium, Cesium, Magnesium, and Calcium. Electrometry makes use of the Stark shift which is the shift in the excited energy levels with applied electric field.

Unique properties of Rydberg Atoms: Some of these are strong dipole-dipole interactions between themselves that scale as n^4 (n being the Principal quantum number), and their size scales as n^2 leading to strong polarizability. While the strong polarizability helps in quantum sensor applications due to their response to external fields, the strong interactions lead to Rydberg blockade in which the close presence of two atoms modifies the energy levels such that both atoms cannot be in the same Rydberg state. This property is used to realize **quantum logic gates** which are needed for building quantum computers. In addition, the strong interactions can be used to simulate complex many-body systems. Quantum phenomena are stochastic in nature and measurements are probabilistic. This means, one needs to perform many measurements to measure the quantum state. For this the long coherence times of Rydberg atoms or the ability of the excited state to be in its quantum state for a long time comes handy.

Optical Clocks and Rydberg Atoms: Another advantage of the long coherence times of Rydberg atoms or very narrow linewidth transition frequencies is their application in optical clocks. The current definition of the atomic clock is based on a specific transition in Cesium atoms in the RF range. Next generation clocks based on optical frequencies offer 3-orders of magnitude better accuracy in time than the microwave atomic clocks.

Many different ions are being pursued to realize optical clocks for 10^{-18} range uncertainty. Of these are of significant interest are Ytterbium, Strontium, Aluminum, Calcium, among others. The advancements in optical clocks or high precision time-keeping allows more accurate positioning and navigation, high speed network synchronization, earth quake predictions by measuring the geopotential differences or the height variation with cm or better precision by comparing the time dilation of clocks at different heights, in cutting-edge basic physics experiments like very long baseline interferometry.

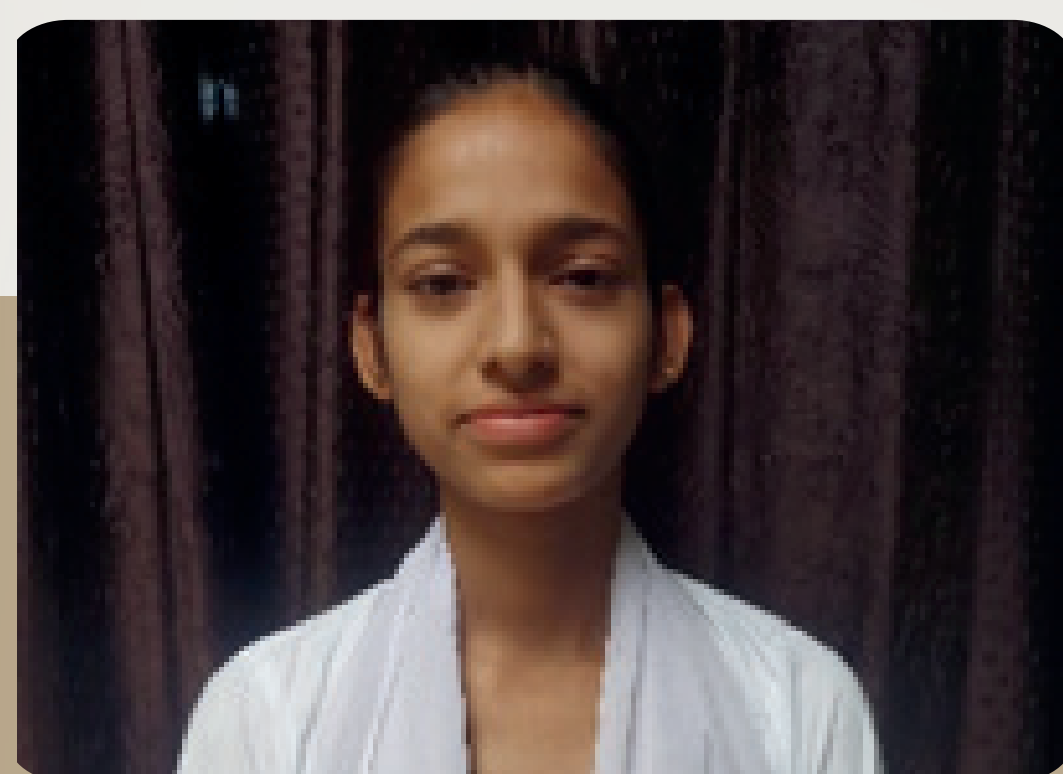
At the heart of these developments is the magneto-optical trap of atoms in which atoms are cooled to sub-milliKelvin regimes and trapped very small volumes by using a combination of lasers and magnetic field. Similarly, the charged ions are trapped by using electromagnetic fields. The developments in atom and ion traps also led to a lot more applications like gravimetry, measurement of gravity and dual trap based measurements of gravity gradients among others.

Quantum Metrology: As metrologists, CSIR-NPL staff are working on quantum metrology, quantum sensing, and quantum materials. Quantum metrology refers to the redefinition of the seven SI units in terms of the universal constants. These new primary standards offer low uncertainties and artifact-free measurements. Quantum sensors for magnetic and electric fields, gravimeters, optical clocks, etc. offer ultra-low sensitivities and opportunities for applications in various fields, including groundwater mapping to earthquake early warning. Sensors and sensor networks are going to be a critical part of metrology as they provide high-quality, reliable data. Material development is the backbone for the futuristic devices and technologies.

Advances in specific areas are contributing to the application of quantum technologies in wide range of areas covering quality of life, strategic applications, and basic science research. Quantum metrology and metrology for quantum technologies will drive the next generation applications and offer opportunities for current and future researchers and engineers.

Student Column

A Day That Changed My Mindset



Ananya Mishra
Government Girls Inter College
Lucknow

When I first heard about the “Be a Scientist” programme under JIGYASA, I thought it would be like any other school field trip—fun but forgettable. But I was wrong. It turned out to be one of the most exciting and eye-opening days of my life.

Our school was invited to visit CSIR-IITR, Lucknow, and I remember being nervous yet curious. As soon as we entered the campus, it felt like stepping into another world—clean labs, advanced machines, people in lab coats, and walls filled with scientific posters. I had never imagined science to be so alive.

During the sessions, we met real scientists who explained how they study the effects of chemicals on health, test water and food samples for safety, and use machines like GC-MS and PCR that I had only read about. What made it even better was that they explained everything in a way we could easily understand. One of the most fascinating parts was the food adulteration demo, where we tested samples using kitchen items like turmeric and soap. I had no idea science could be this simple and useful.

The best part was the hands-on activity where we wore lab coats and conducted a mini-experiment. For a few minutes, I truly felt like a scientist! I asked questions, took notes, and even got to speak with a young researcher who was once just like us. She told us how she struggled with self-doubt and came from a small town but pursued science because of her curiosity.

This visit made me realize that science is not just for toppers or city kids. It's for anyone who is curious and willing to explore. I used to think I wanted to be a teacher, but now I'm seriously thinking of becoming a scientist—someone who solves real problems and helps people live healthier lives.

Thank you, JIGYASA and CSIR-IITR, for making me believe in myself. I left the lab that day with more confidence and a new dream.

My Summer with Science



Arnav Srivastava
Kendriya Vidyalaya
Lucknow

This July, I was lucky to be one of the 25 students selected for the JIGYASA Summer Internship Program at CSIR-IITR. For five days, I wasn't just a student—I was a part of a real scientific institution, and it was the most thrilling experience of my academic life.

Each day began with interactive sessions by scientists who patiently answered our never-ending questions. We explored topics like toxicology, environmental health, and even public safety. What I loved most was that everything we learned had a real-life application—from testing pollution in air and water to analyzing chemicals in cosmetics.

I had always thought research was about working alone in silence, but here I saw teamwork, passion, and even fun. The lab sessions were exciting—we got to use microscopes, prepare simple samples, and understand instruments that can detect even tiny amounts of harmful substances. One of the coolest things we did was design a small experiment to compare packaged water with tap water using basic testing methods.

We also interacted with PhD students who shared their journeys, struggles, and motivation. It was reassuring to see that even scientists have doubts and setbacks but keep going because they love what they do.

Apart from labs, we had a poster-making activity, a science quiz, and a feedback session where our opinions were taken seriously. On the last day, we even got certificates and took a group photo, which is now framed in my room.

This internship changed my entire perspective. I now understand that science is not about memorizing facts—it's about asking the right questions. JIGYASA made me curious, confident, and eager to learn more. I now dream of joining a CSIR lab one day as a researcher and maybe even mentoring students like me.

Jigyasa Mentor / Nodal Column

Where Curiosity Turns Into Quest: Jigyasa at CSIR-IITR

The Jigyasa program at CSIR-Indian Institute of Toxicology Research, has been an incredibly enriching and exhilarating experience to witness the spark of scientific curiosity ignite in young minds. The Jigyasa program, aims to connect school students with scientists and expose them to the fascinating world of scientific research.

My journey began with the exciting challenge of translating the program's vision into tangible experiences for students. This involved meticulous planning, from developing engaging modules on toxicology and environmental science to designing hands-on experiments that are both informative and fun. We aimed to demystify scientific concepts and showcase their real-world applications, moving beyond textbooks to practical learning.

One of the most rewarding aspects has been observing the students' transformation. Their initial apprehension quickly gives way to enthusiastic participation, their eyes wide with wonder as they conduct experiments, interact with sophisticated instruments, and question our scientists. From exploring the presence of pollutants in everyday samples to understanding the impact of chemicals on living systems, their engagement is palpable.

The program at CSIR-IITR has not only provided a platform for scientific learning but also fostered critical thinking, problem-solving skills, and a deeper appreciation for the scientific method. We've seen shy students blossom into confident communicators, eagerly presenting their findings and discussing their observations.



By Dr. R. Parthasarathi,
Sr. Principal Scientist, CSIR-IITR, Lucknow
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Implementing Jigyasa has been a collaborative effort, a testament to the dedication of the entire CSIR-IITR team. From researchers to administrative staff, everyone has played a crucial role in ensuring the smooth execution of workshops, lab visits, and interactive sessions. This collective passion for science education is what truly makes the Jigyasa program a resounding success.

Looking back, it's been an exciting journey filled with learning, challenges, and immense satisfaction. The opportunity to inspire the next generation of scientists and instill in them a love for discovery is a privilege I deeply cherish. Jigyasa at CSIR-IITR is more than just a program; it's a movement to cultivate a scientific temperament in young India, one curious mind at a time.

Jigyasa Monthly Highlights

Lab Name	No. of events	Total number of students benefitted	Total number of Teachers benefitted	Engagement Activities
CSIR-IMMT	2	29	5	Lab Visit, Popular Lecture, Field Visit, Oral & Poster presentation
CSIR-NML	1	69	4	Lab Visit, DIY kit demonstration
CSIR-NIIST	2	162	14	Lab Visit, Open Day, Popular Lecture
CSIR-IHBT	2	47	3	Lab Visit, Field Visit
CSIR-IMTECH	1	62	2	Demonstration, Competition, Quiz
CSIR-CRRI	1	40	5	Lab Visit, Demonstration, Field Visit
CSIR-NCL	2	84	15	Lab Visit, Popular Lecture, Quiz
CSIR-CSIO	1	99	4	Lab Visit
CSIR-CECRI	1	17	6	Lab Visit, Field Visit
CSIR-CCMB	1	20		Lab Visit
CSIR-NPL	3	72	3	Oral & Poster presentation, Lab Visit and DIY kit demonstration
CSIR-IIIM	1	50	2	Competition
CSIR-IICB	1	0	37	Teacher Training
CSIR-NAL	3	587	63	Popular Lecture and Lab Visit
CSIR-AMPRI	2	220	20	Lab Visit, Popular Lecture, Quiz
CSIR-4PI	2	332	55	Webinar, Teacher training, competition
CSIR-NGRI	1	81	5	Lab Visit
CSIR-NIO	1	40	5	Demonstration, Field Visit, Teacher Training
CSIR-CDRI	3	1500	50	School Visit, Popular Lecture, Demonstration, Field Visit, Quiz
CSIR-SERC	1	0	37	Lab Visit, Popular Lecture, Demonstration, Teacher Training, Workshop
CSIR-NEIST	3	102	12	Lab Visit, Popular Lecture, Demonstration
CSIR-CIMFR	1	20	2	Lab Visit
Total	36	3633	349	

Jigyasa Monthly Highlights

CSIR-IMMT, Bhubhaneshwar

June 2 to June 13, 2025

- 2 Week **Summer Internship** programme
- 4 Students and 3 Teachers from SAI International School participated.
- Students were mentored by scientists
- Students were provided Lab exposure and Hands-on Training
- Students gave presentations and demonstrated prototypes of their work

June 25, 2025

- Scientists visited Sainik School
- 25 students and 2 teachers participated in the event.



CSIR-IMTECH, Chandigarh

June 27

- **World Microbiome Day** celebrated on 27 June 2025
- 13 students and 2 teachers from Learning Path School, PM SHRI KV and SGGGS Collegiate Public School
- Students were selected based on an online quiz with 62+ participants
- Selected students participated in a game competition featuring the **“Gut Feeling”** video game developed by CSIR-IMTECH
- Winners of the quiz and game competition were awarded

CSIR-NIIST, Trivandrum

June 20, 2025

- 36 students and 4 teachers from KSMDDB College, Shasthamkotta participated
- Explored instrumentation facilities and various research divisions at the CSIR-NIIST
- Gained insights into ongoing research and technological advancements

June 28, 2025

- 56 underprivileged girl students and 4 mentors participated
- Schools from coastal and tribal communities of Thiruvananthapuram district visited the CSIR-NIIST Lab
- This event was a part of the Collector’s Super 100 initiative in collaboration with Kanal NGO and CSIR-NIIST



Jigyasa Monthly Highlights

CSIR-IHBT, Palampur

June 5, 2025

- 30 students and 2 teachers from Cambridge International School, Palampur participated in the event
- Had an exposure to the Lab facilities and engaged in science-related activities

June 27, 2025

- 25 students and 1 teacher visited the lab in collaboration with a local NGO named "I light Global"
- Hands on activity and sessions from scientists



CSIR-CSIO, Chandigarh

June 6, 2025

- 99 students (Cadets) and 4 Teachers/officials from 1 CHD Girls Battalion NCC, Sector 31, Chandigarh visited practical labs at ISTC and research labs at CSIR-CSIO
- Received detailed introduction to mechanics, avionics, and electronics
- Interacted with scientists and officials at CSIR-CSIO

CSIR-CRRI, New Delhi

JUNE 19, 2025

- 40 students and 5 teachers from Galgotias University participated in student-scientist interaction.
- Scientific dissemination of the latest R&D developments at CSIR-CRRI.
- Activities & Facilities Visited:
 - Car driving simulator
 - Geotechnical lab
 - Bridge engineering division
 - Structures division



CSIR IIIM, Jammu

June 5, 2025

- World Environment Day 2025 celebration was held with the theme "Art from Waste".
- 50 Students and 2 Teachers at R R L High School, Jammu, participated.
- Students showcased their creativity by making artwork and useful items from discarded materials, promoting the message of reuse and recycling.

Jigyasa Monthly Highlights

CSIR-NPL, New Delhi

June 6, 2025

- 50 students from The Manthan School, New Delhi participated.
- Poster competition and popular lecture by Dr. Shibu Saha, NPL Jigyasa Coordinator
- Guided lab visits

June 3 to June 13, 2025

- 18 students from various schools participated in Summer internship program.
- Students were mentored by the scientists.
- Visited the Lab and engaged in science-related activities and gained insights into diverse aspects of scientific research and practice.

June 30, 2025

- Special program for the children of CSIR-NPL staff (both permanent and contractual) studying in classes 9 to 12 was organized.
- Hands-on DIY experiment, followed by laboratory visits and interactive sessions with scientists.



CSIR- 4PI, Bengaluru



June 16-17, 2025

- 292 participants from various backgrounds attended a 2-day webinar titled “Weather Forecasting – Myths, Science, and the Future”, conducted by Dr. Vivekananda Hazra
- Day 1 focused on debunking common misconceptions about weather forecasting, its historical development, and modern methods of data collection and assimilation.
- Day 2 covered types of forecasting, coordinate systems, model parameterization, and the use of AI/ML in weather prediction. The session concluded with a discussion on future trends in forecasting technology.

CSIR-IICB, Kolkata

June 30 to July 1, 2025

- Teacher Training Workshop in association with Royal Society of Chemistry (RSC) was organized.
- 37 science teachers from nearby Government and Government Aided schools participated in the workshop.



Jigyasa Monthly Highlights

CSIR- AMPRI, Bhopal

June 5, 2025

- World Environment Day 2025 celebration was held.
- 120 students and 5 teachers from 4 schools engaged in popular lectures, a quiz competition, and lab visits.
- Visited the Lab and engaged in science-related activities.

June 14, 2025

- 100 students and 15 teachers participated in an Outreach programme at the Technocrats Institute of Technology, Bhopal.
- Dr. Satanand Mishra, CSIR- AMPRI Jigyasa Coordinator delivered a Technical talk.



CSIR- SERC, Chennai

June 25-27, 2025

- 37 teachers participated in a **3-day workshop** exclusively for science teachers of Greater Chennai Corporation Schools
- Contemporary relevant topics such as Structural Health Monitoring, Artificial Intelligence, Disaster Mitigation, New Materials etc. were covered.
- The participating teachers also visited various laboratories of CSIR-SERC for live demonstrations.

CSIR NGRI, Hyderabad

June 25, 2025

- 81 students from Grades 8 and 9, accompanied by 5 teachers, from Skill Stork International School, Hanumakonda, Warangal, visited the laboratory.



CSIR- CIMFR, Dhanbad

June 25, 2025

- 20 students and 2 teachers from Abhoya Sundari School had an insightful and engaging lab visit.
- The visit aimed to provide students with an opportunity to witness the latest advancements in scientific research and the real-world applications of various technologies in mining, fuel research, and environmental sciences.

Jigyasa Monthly Highlights

CSIR - NEIST, Jorhat

June 18, 2025

- Students of Sivsagar College visited the laboratories of CSIR-NEIST.
- They explored various advanced analytical and research facilities of the lab.
- Connected with scientists, observed ongoing experiments, and learned about the practical applications of modern research tools.



June 19, 2025

- Group of students from Nowgong College explored key research laboratories, gained practical exposure to advanced scientific instruments and techniques and learned about various ongoing research projects.
- The visit helped the students understand real-world applications of biological and interdisciplinary research, enhancing their academic learning and curiosity.

June 26, 2025

- students from various schools attended a popular lecture by Dr. Dipankar Neog, Jigyasa Lab Coordinator.
- In this lecture, he emphasized the importance of skills, innovation, and scientific curiosity.



CSIR- CDRI, Lucknow

June 6, 2025

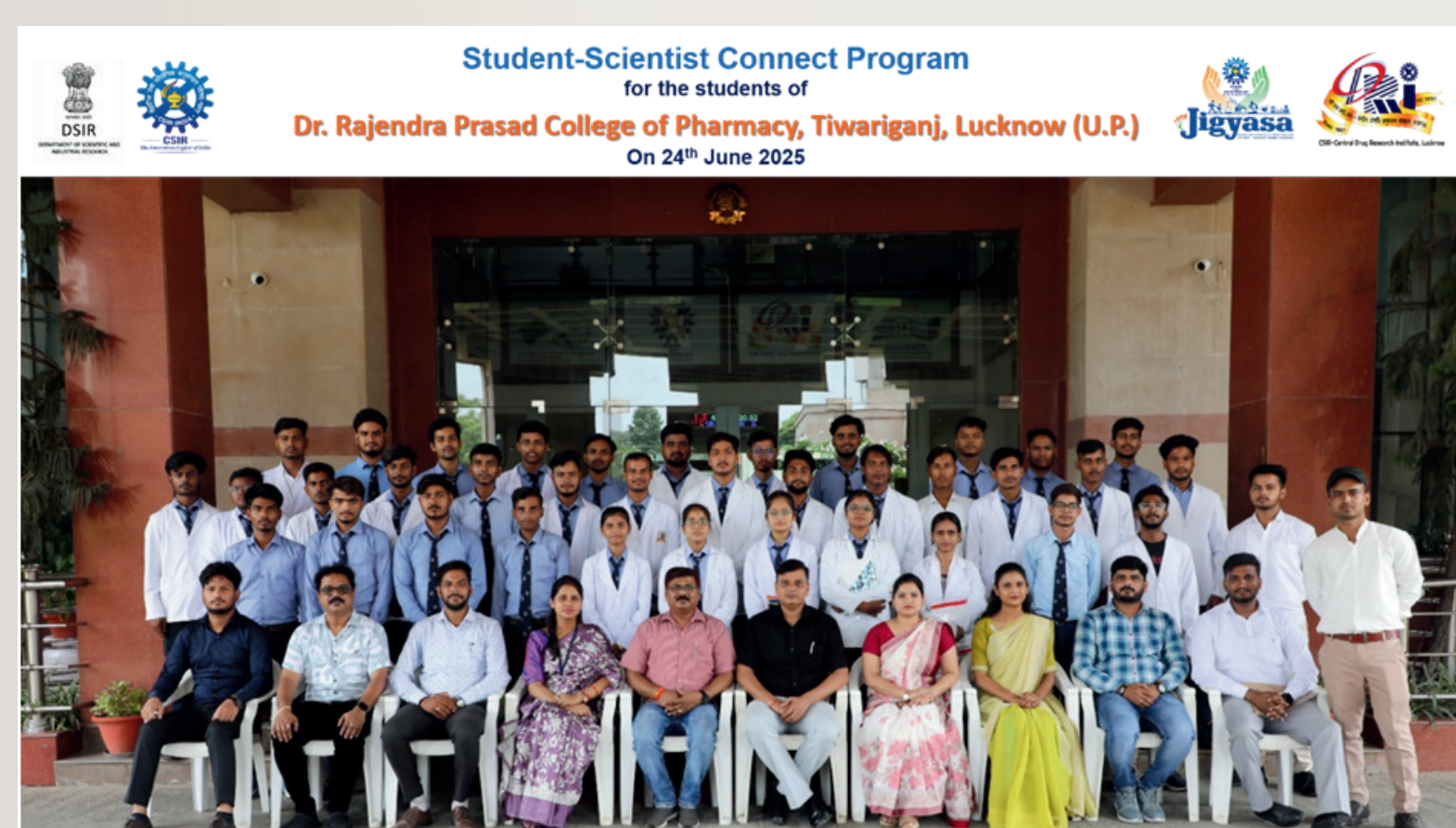
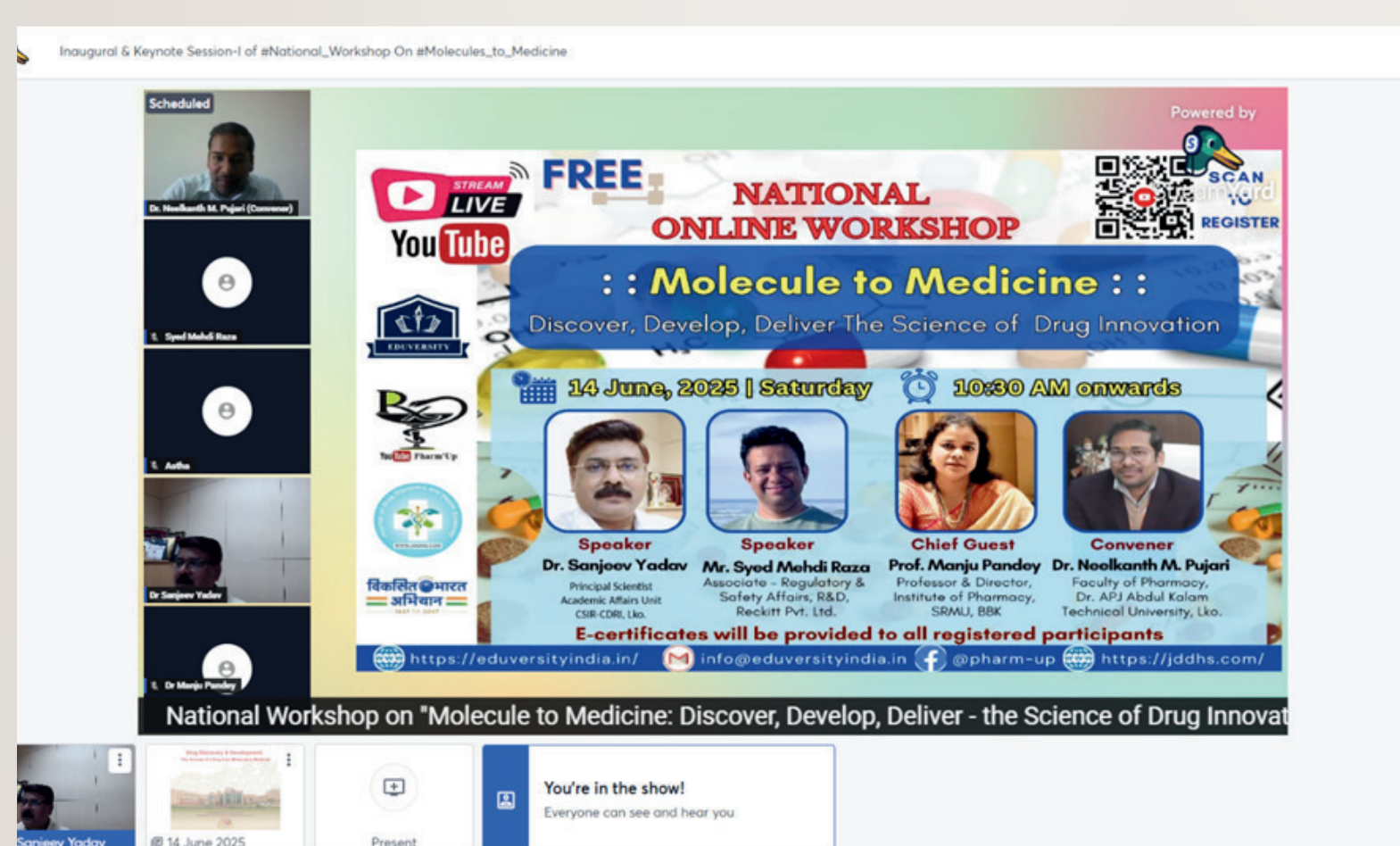
- Science Outreach & Health Awareness Program was successfully conducted at village Tiwaripur, Jankipuram Extension, Lucknow.
- The program aimed to foster scientific temper and promote health education among rural communities.
- Approximately 220 beneficiaries, including both male and female members of the village community students and teacher, actively participated in the event.

June 14, 2025

- A Teacher Training webinar was organized on June 14, 2025 in collaboration with Dr. APJ Abdul Kalam Technical University, Lucknow where more than 1500 students participated online.

June 24, 2025

- Student-Scientist connect program was organised by CSIR-CDRI for the students of Dr. Rajendra Prasad College of Pharmacy, Tiwaripur Uttar Pradesh.
- Total 51 students and 4 faculty actively participated in the scientific discussion with the Scientists of CDRI & visited several state-of-the-art pharmaceutical laboratories within the institute.



Jigyasa Monthly Highlights

CSIR-NCL, Pune

June 12, 2025

- 71 students (Grades VIII–XII) and 8 teachers from Vikram Sarabhai Science Foundation (VSSF), Kochi participated.
- Popular talk on **"Introduction to Energy Storage and Energy Conversion Devices"**
- Lab visit to NCIM, Molecular Biology, and Tissue Culture research facilities
- Interaction with 3 scientists and several PhD students.



June 23, 2025

- 13 students (Grades V–XII) from CBSE schools in UAE with 7 coordinators from Vidnyan Bharati Paschim Maharashtra participated.
- Visits to Hydrogen Generation and Spectroscopic Ellipsometry facilities
- Popular talk on **"The journey of science from unknown to known, ignorance to wonderment, fear to curiosity, and bondage to freedom"**
- Discussion included ancient evolution, theory of mathematics, and the importance of the Vedas



CSIR-CECRI, Karaikudi

June 26, 2025

- 17 students and 6 teachers from 15 different schools participated.
- Activities & Facilities Visited:
 - Energy Storage System Lab
 - Solar Energy Harvesting Lab
 - 3D Printing Facility
 - Biosensors Lab
 - Hydrogen Energy Lab
 - Climate Action Building
- Special Interaction with Dr. K. Giribabu, Senior Scientist and CSIR Young Scientist Awardee



Jigyasa CSIR Lab Spotlight

CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow



CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow, established in 1965, is India's premier institute dedicated to toxicology. With a legacy spanning nearly six decades, CSIR-IITR continues to lead India's efforts in ensuring environmental and human health safety through advanced toxicological research and innovation. Its multidisciplinary approach, state-of-the-art infrastructure, translational research, and strong industry collaborations uniquely position it as a national and global hub in the field of toxicology. Due to its impactful contributions in policy-making, industrial solutions, and public health, the institute is globally recognized for advancing research in environmental and health safety under the motto, "Safety to Environment and Health and Service to Industry."

CSIR-IITR operates through three core R&D domains: FEST (Food, Drug & Chemical, Environment and Systems Toxicology), ASSIST (Analytical Sciences & Services, Industrial Support), and REACT (Regulatory and Computational Toxicology, Epidemiology, and Biostatistics). These divisions synergistically cover fundamental research, industrial support, and regulatory compliance, including GLP (Good Laboratory Practice) and NABL (National Accreditation Board for Testing and Calibration Laboratories)- certified testing services.

CSIR-IITR's integrated efforts in research, testing, and outreach have firmly positioned it as a national leader in toxicology, significantly contributing to safeguarding health, supporting industries, and strengthening science-based governance.

CSIR-IITR

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THE CURIOUS CORNER

I'm invisible, but I make you sneeze,
From smoke or pollen in the breeze.
CSIR-IITR studies me with care,
To make sure we all breathe clean air.
What am I?

I lurk in oil, though I'm not seen,
I'm not supposed to be in your cuisine.
Mustard looks fine, but I'm the threat,
Detect me fast, or health you'll regret!
What am I?

1. I'm a place of beakers, tubes, and flame,
You learn and test—it's not a game!
In coats so white, with hands so steady,
Experiments begin—are you ready?
Where am I?

1. I help detect what eyes can't see,
Toxins in food or air or tea.
Scientists use me to explore,
Microscopic worlds and more.
What am I?

Answers will be shared in the next months Newsletter



The Curious Corner

1. Which of the following is a heavy metal that can cause serious health issues if found in drinking water?

A. Calcium

B. Iron

C. Lead

D. Zinc

2. What is the branch of science that studies the harmful effects of chemicals on living organisms?

A. Pathology

B. Zoology

C. Toxicology

D. Pharmacology

3. Which of the following food additives is banned in many countries for its cancer-causing potential?

A. Vitamin C

B. Butter Yello (Auramine O)

C. Salt

D. Sugar

4. A pesticide used in farming is found in vegetables sold in the market. What kind of contamination is this?

A. Genetic

B. Chemical

C. Physical

D. Natural

5. What is the safe level of arsenic in drinking water according to WHO guidelines?

A. 0.01 mg/L

B. 1 mg/L

C. 10 mg/L

D. 0.1 mg/L

6. What does LD50 (Lethal Dose 50) indicate in toxicology?

A. Dose that cures 50 people

B. Dose needed to make 50 people sick

C. Dose that kills 50% of test organisms

D. Dose absorbed by 50% of the population

Answers will be shared in the next months Newsletter

The Curious Corner

7. Which part of the body is most affected by air pollution-related toxicity?

- | | |
|-------------------------------------|-----------------------------------|
| <input type="checkbox"/> A. Brain | <input type="checkbox"/> B. Lungs |
| <input type="checkbox"/> C. Stomach | <input type="checkbox"/> D. Skin |

8. What is the primary concern with consuming food contaminated with aflatoxins (produced by fungi)?

- | | |
|---|--|
| <input type="checkbox"/> A. Bad Taste | <input type="checkbox"/> B. Weight Loss |
| <input type="checkbox"/> C. Liver Damage and Cancer | <input type="checkbox"/> D. Skin Allergy |

9. Which toxic chemical was behind the Bhopal Gas Tragedy?

- | | |
|---|-------------------------------------|
| <input type="checkbox"/> A. Benzene | <input type="checkbox"/> B. Mercury |
| <input type="checkbox"/> C. Methyl isocyanate (MIC) | <input type="checkbox"/> D. Cyanide |

10. Which of the following is a safe practice for food handling?

- | | |
|---|--|
| <input type="checkbox"/> A. Using unwashed vegetables | <input type="checkbox"/> B. Adding artificial dyes |
| <input type="checkbox"/> C. Reading food labels | <input type="checkbox"/> D. Mixing oils with unknown additives |

Answers will be shared in the next months Newsletter



Models of Engagement



Contact Us for contribution to this Newsletter

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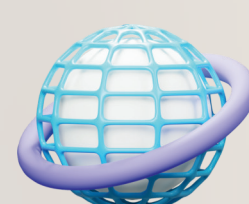
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