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Bi Annual  
Newsletter | JAWAHARLAL NEHRU CENTRE FOR  
ADVANCED SCIENTIFIC RESEARCH

# JNC NEWS

Issue: 64  
November 2025

## Message from the President

I am delighted to present this edition of JNCASR newsletter, marking my first message to you as its newly appointed President. I am deeply honored to take up this responsibility of leading such an extraordinary community of researchers, students, and staff.

Our Centre has seen some significant achievements and developments over the past six months. The recent Nature Index Institution Tables 2025 indicates that JNCASR remains one of the leading research institutions of the country—ranking 17<sup>th</sup> across all institution categories and 14<sup>th</sup> among academic institutions. Its rank in Biological, Physical, and Chemical Sciences stands at the 9<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> position respectively. While JNCASR achieved the 44<sup>th</sup> rank under the category of Research Institutions within the National Institutional Ranking Framework (NIRF) 2025, it is the highest among the AIs of DST and DBT. These rankings reflect our community's sustained commitment and dedication to research excellence.

Outstanding contributions and excellence in research by our faculty are evident in their publications, patents, accolades and securing competitive research grants. Three of our faculty have been honored with the prestigious J. C. Bose Grants 2025 of the ANRF, and many others have received distinguished fellowships, memberships of professional academies, and have been selected to serve on the editorial boards of journals with high impact factors. It is heartening to see the enthusiasm and accomplishments of our students who have earned research and travel grants and received several national and international recognitions.

On the academic front, we awarded 71 degrees and diplomas and welcomed 105 new students in the August semester

of 2025, reaching a total student strength of 440 with an excellent gender balance.

Through 15 science outreach programmes, we reached out to about 1,922 students and 211 teachers from different regions, keeping up our strong commitment to taking science beyond our campus.

JNCASR has been engaged in academic and research cooperation with other institutions and industry and has recently entered into formal agreements for research collaboration with 10 institutions.

The Centre saw active participation of diverse groups in various events aligning with national initiatives such as Swachhata Hi Seva, Special Campaign 5.0, International Yoga Day, and Independence Day celebration.

We achieved the STQC certification for our website, making it fully compliant for persons with disabilities, in line with the Government of India's and Supreme Court's directives—an important milestone in ensuring digital inclusivity and accessibility.

In September 2025, the Council of Management of JNCASR has approved the launch Integrated BS (Research) – PhD, of a new academic program at the Centre to provide option of taking up research for undergraduate students having completed 120 credits of coursework. The Centre will admit students to this program in August 2026, conforming with the NEP 2020.

It is nice to see faculty colleagues grouping together to think of bigger challenges and ideas to be tackled through

*Contd...*

11 Centers of Excellence in the interdisciplinary topics ranging from soft and active matter to movement disorder and sustainable ecosystem. We now need to approach appropriate funding sources to take these further.

On October 3, 2025 the Centre launched *pathfindHers* an initiative conceived and planned by Prof R Viswanatha to provide an open and supportive space for women on campus to come together, share experiences, exchange ideas, and discuss challenges and opportunities in the context of both career and life.

The Centre has entered an MoU with the Central Public Works Department (CPWD) to plan and build a Sports complex with input from Prof Sarit Agasti.

As recommended by the DST, JNCASR completed a peer review on October 28-29, 2025, with engaging interactions of all stakeholders with the Expert Committee.

The Centre has been working closely with DST to make progress in various matters of administration and funding, particularly to support the infrastructural maintenance. A session of interaction with the CEO of ANRF was organized

for the faculty at JNCASR to have a chance to explore possible engagement with the ANRF.

We are working on setting up an office to facilitate Centre's plans to engage with industry and corporate world to be able to raise significant additional resources for establishing faculty positions and new areas of research.

As we continue to progress on multiple fronts, I wish to acknowledge the contributions of every member of the JNCASR community. Together, let us continue to build upon the remarkable legacy of excellence that JNCASR has established in advancing the frontiers of scientific research, innovation, and education.

Lastly, I would like to reaffirm my deep commitment to strengthening our academic, outreach and research activities, and nurturing the next generation of scientists who will contribute meaningfully to society.

Warm regards,

**Umesh V. Waghmare**  
President, JNCASR

## ■ Major Highlights

### JNCASR Among Top-Ranked Institutes

Nature Index Institution Tables 2025, which covers the period between 1<sup>st</sup> August 2024 and 31<sup>st</sup> July 2025, ranked JNCASR among the top academic institutions in the country. The Centre secured 17<sup>th</sup> rank across all categories of institutions, 14<sup>th</sup> across all subjects, 9<sup>th</sup> in Biological Sciences, 11<sup>th</sup> in Physical Sciences, and 12<sup>th</sup> in Chemistry.

Furthermore, JNCASR was ranked 44<sup>th</sup> under the Research Institutions category in the National Institutional Ranking

Framework (NIRF) 2025 released by the Ministry of Education, Government of India.

#### Sources:

- *Nature Index Institution Tables 2024–2025*  
(<https://www.nature.com/nature-index/institution-outputs/generate/all/countries-India/all>)
- *NIRF India Rankings 2025*  
(<https://www.nirfindia.org/Rankings/2025/ResearchRanking.html>)

## ■ Leading News

### JNCASR Welcomes its New President

On 11<sup>th</sup> June 2025, Prof. Umesh V. Waghmare assumed office as the new President of JNCASR, succeeding Prof. G. U. Kulkarni. The transition was marked by a handover ceremony attended by faculty, staff, and members of the JNCASR community.

#### News reported by:

- X post by JNCASR, 11<sup>th</sup> June 2025  
(<https://x.com/jncasr/status/1932746438427209898>)

*In photographs : Prof. G.U. Kulkarni, President, JNCASR, handing over charge to the incoming President, JNCASR Prof. Umesh V. Waghmare, Professor, Theoretical Sciences Unit, and Dean, Faculty Affairs, JNCASR on 11<sup>th</sup> June 2025 at President's Office, JNCASR.*





## Partnership Between JNCASR and University of Manchester

On 21<sup>st</sup> May 2025, JNCASR and the University of Manchester (UoM), United Kingdom, signed a Letter of Intent (LoI) to establish a strategic partnership in the fields of advanced materials, nanotechnology, and biological sciences. The LoI was signed by Prof. K. R. Sreenivas, Dean, R&D, JNCASR, and Prof. Stephen Flint, Associate Vice-President (International), UoM, during a ceremony held at JNCASR. The agreement outlines collaboration in key areas including materials for energy and sustainability; surface engineering and thin

films; organic/hybrid biomaterials; computational materials science; graphene and 2D materials; and neurobiology and biological sciences.

### News Published on:

- X post by JNCASR, 21<sup>st</sup> May 2025  
(<https://x.com/jncasr/status/1925127189940609269>)



*Signing of the Letter of Intent between the Centre's representative Prof. K. R. Sreenivas, Dean, R&D, and Prof. Stephen Flint, Associate Vice-President (International), University of Manchester*

## JNCASR Website is Now Accessible to Persons with Disabilities

The JNCASR website, which has been redeveloped in line with GIGW 3.0 guidelines, received STQC compliance certification on 3<sup>rd</sup> July 2025. This ensures full accessibility for persons with disabilities (PwDs), improved user experience, and secure, transparent, and citizen-friendly digital platforms, adhering to the mandate issued by the DST and the Office

of the Chief Commissioner for Persons with Disabilities, Ministry of Social Justice and Empowerment, Government of India, as well as the Supreme Court ruling directing that all websites of institutions under the Government of India be made accessible to PwDs.

## CRA between JNCASR and M/s. Trane Technologies

On 9<sup>th</sup> September 2025, a Collaborative Research Agreement (CRA) was signed and exchanged between JNCASR and M/s. Trane Technologies, Bangalore.



*Image (left to right): Mr. Jayachandra (Coordinator, R&D and F&E), Prof. Tapas K. Maji (PI), Mr. Joydeep Deb, AO, Prof. K. R. Sreenivas, Dean, R&D, from JNCASR and Dr. Zubin Varghese, Senior Director and Innovation and CoE, Mr. Rohit B. L., Director, Innovation, Mr. Rajat Raj, Associate Director, Innovation and Mr. Sandeep Vaageshwara from M/s. Trane Technologies.*

# ■ Celebrations of Events of National Importance

## Swachhata Pledge under Special Campaign

As per the directions of the Government of India, under the Swachh Bharat Mission of the DST, JNCASR organised Special Campaign activities from 1<sup>st</sup> to 15<sup>th</sup> May 2025. The Swachhata Pledge was administered in the presence of Prof. G. U. Kulkarni, President, JNCASR, faculty members, officers, staff, and students of the Centre on 15<sup>th</sup> May 2025. Dr. Kushagra Bansal, MBGU administered the pledge in English and Hindi while Mr. M. R. Chandrasekhar, Coordinator (Security, Legal, and Campus Management) led the pledge in Kannada.



*Administration of the Swachhta Pledge*



*International Yoga Day Celebration at JNCASR*

## International Yoga Day

JNCASR celebrated International Yoga Day 2025 on 21<sup>st</sup> June 2025 based on this year's theme "Yoga for One Earth, One Health". The event included a live-streamed session of the Prime Minister's yoga programme and a yoga demonstration led by Shri Anand Guruji. Over 100 JNCASR community members participated in the programme, reinforcing the Centre's commitment to holistic well-being.

## Independence Day

On the occasion of the 79<sup>th</sup> Independence Day of India, JNCASR celebrated the event on 15<sup>th</sup> August 2025, by hoisting the National Flag at Jakkur campus and singing the National Anthem. The flag was hoisted by Prof. Umesh V. Waghmare, President, JNCASR, in the presence of students, faculty members and staff of the Centre.

*Hoisting of the National Flag on the event of Independence Day of India*



## Swachhata Hi Seva 2025 and Special Campaign 5.0

Aligned with DST directives, JNCASR initiated cleanliness and awareness activities, including e-waste management, between 17<sup>th</sup> September and 2<sup>nd</sup> October 2025 and several activities under Special Campaign 5.0 from 3<sup>rd</sup> to 31<sup>st</sup> October 2025.



## Other Events

### Geochronology Lecture Series and Field Training Programme

Geochronology Lecture Series and Field Training Programme was organised by Geosciences Unit from 2–5 May 2025, jointly with the Inter-University Accelerator Centre (IUAC), New Delhi at different campuses of Nagaland University.

The programme enhanced geoscience awareness, provided practical field training in geological sampling and dating methods, and encouraged young scholars to explore advanced research opportunities at JNCASR.

### 3<sup>rd</sup> Pre-Summit of WSDM 2025

Following the success of the 1<sup>st</sup> and 2<sup>nd</sup> Pre-Summits, the 3<sup>rd</sup> Pre-Summit of the World Summit on Disaster Management (WSDM) 2025 was held on 24<sup>th</sup> May 2025 at JNCASR. The event was organised in collaboration with the Uttarakhand State Council for Science and Technology and the Himalayan Academy of Science and Technology, Dehradun. The summit was inaugurated by the Hon'ble Governor of Karnataka and featured a recorded keynote address by the

Hon'ble Chief Minister of Uttarakhand. The occasion was further honoured by the presence of Bharat Ratna Prof. C. N. R. Rao. This gathering, comprising leading scientists, policymakers, and other stakeholders, focused on global strategies for disaster risk reduction and underscored the need for science-based, collaborative solutions to protect both lives and landscapes in high-risk mountain environments, particularly the Himalayan regions.



*Images from the 3<sup>rd</sup> Pre-Summit event of the World Summit on Disaster Management (WSDM) 2025*

### Training in Basic Life Support

On 24<sup>th</sup> May 2025, the Safety Committee of the Centre has organised a training course for its members on Basic Life Support: CPR and First Aid, which are crucial life-saving skills. The training was conducted by an experienced professional Shri. Shashikumara, co-founder of VMEDO Academy.



*Training course on Basic Life Support: CPR and First Aid*



### Citizen Services Camp

The Postal department, Government of India, Bengaluru East division conducted a 3-day camp from 1<sup>st</sup>–3<sup>rd</sup> July 2025 at JNCASR for Aadhaar enrolment, updation, briefing about innovative investment schemes of the postal department, and providing value added services under a single platform. The camp was well-organised, engaging and received overwhelming appreciation.

### Young Scientists Online Lecture

To strengthen engagement in emerging research areas, the Geosciences Unit coordinated the Young Scientists' Online Lecture on 21<sup>st</sup> July 2025 on the topic “The Science Behind Electric Vehicles for Transport” organized by TWAS CASAREP in association with the Indian Institute of Science, Bengaluru.

This one-day event brought together distinguished scientists and early-career researchers to discuss the scientific principles, technological challenges, and future directions of electric vehicle (EV) technologies.

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## Orientation Programme for New Students

On 31<sup>st</sup> July 2025, JNCASR held a Welcome and Orientation Program for the newly joined Ph.D., Master, and PG Diploma students. From academics to mental health, speakers introduced the key resources available to support every step of a student's academic journey.



*Orientation programme organised for new students of JNCASR*

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## EHS Safety Training

On 2<sup>nd</sup> August 2025, EHS Safety Training workshop was conducted for JNCASR community for the Academic year 2025–26.

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## Documentary Screening

On 7<sup>th</sup> August 2025, Dhvani presented a documentary screening “**Huliyappa**”, which showcased the sacred forests of Karnataka's Western Ghats, exploring the legend of the tiger deity believed to protect the remote hamlets from the dangers of wildlife. The screening was followed by an interaction session with the filmmaker Sourabha Rao.

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## Blood Donation Drive

A Blood Donation Drive was organised at JNCASR on 7<sup>th</sup> August 2025 in collaboration with Sankalp India Foundation, a dedicated NGO working in the field of voluntary blood donation, thalassemia, and bone marrow transplantation. Forty-two units of blood were collected during the drive.

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## Young Scientists' Meeting

The Geosciences Unit coordinated a hybrid Young Scientists' Meeting on “*Earth's Changing Contours: The Interplay of Forces and Time*” (27–29 August 2025), fostering international collaboration and advancing interdisciplinary understanding of climate change, natural hazards, and Earth system dynamics.

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## Visit of Representatives of Saint-Gobain

Prof. Yves Brechet, Global R&D Chief (Scientific Director) of Saint-Gobain visited JNCASR campus in 11<sup>th</sup> September 2025. He toured the laboratories and interacted with faculty members, discussing ongoing research and future collaboration possibilities to strengthen industry-academia partnerships.



*Visit by Prof. Yves Brechet, Global R&D Chief (Scientific Director) of Saint-Gobain*

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# ■ Appointments & Promotions

## **New Appointment- Regular Non-Teaching Staff**

- Aditya Krishnan, Jr. Admin Assistant  
(w.e.f. 8<sup>th</sup> April 2025)

## **New Appointments – Contractual**

- Balraj A., Section Officer  
(w.e.f. 1<sup>st</sup> April 2025)
- Dr. Ravindra Peravali, Guest Instructor  
(w.e.f. 19<sup>th</sup> May 2025)
- Subhod M. Gulvady, Coordinator (Civil/Electrical works)  
(w.e.f. 5<sup>th</sup> June 2025)
- Melissa C. Mendonza, Personal Secretary  
(w.e.f. 1<sup>st</sup> September 2025)
- Sudha J., Coordinator (Secretarial Support)  
(w.e.f. 8<sup>th</sup> September 2025)

## **Promotion – Teaching Staff**

- Prof. Kushagra Bansal, MBGU promoted from Faculty Fellow to Associate Professor (w.e.f. 31<sup>st</sup> October 2024)

## **Honorary Faculty Member**

- Prof. Ashutosh Sharma, Honorary Professor  
(w.e.f. 27<sup>th</sup> August 2025)

## **Professor of Practice (Honorary)**

- Dr. Sharankumar Shetty joined as Professor of Practice  
(w.e.f. 1<sup>st</sup> August 2025)

## **Additional Responsibilities**

- Prof. T. N. C. Vidya, Chairperson, EOBV  
(w.e.f. 11<sup>th</sup> August 2025)
- Prof. Subi J. George, Dean, Faculty Affairs  
(w.e.f. 12<sup>th</sup> August 2025)
- Prof. Sheeba Vasu, Dean, Fellowship and Extension Programmes (w.e.f. 12<sup>th</sup> August 2025)
- Prof. T. Govindaraju, Chairperson, NCU  
(w.e.f. 12<sup>th</sup> August 2025)
- Prof. Tapas Kumar Maji, Chairperson, CPMU  
(w.e.f. 12<sup>th</sup> August 2025)

## **New Appointments – Research Associates (1<sup>st</sup> April 2025–30<sup>th</sup> September 2025)**

- Dr. Abinash Pradhan, NCU
- Dr. Aditi Goel, MBGU

- Dr. Akhilesh Karagadde Suresh, EMU
- Dr. Anita Gemmy Francis, TSU
- Dr. Ankit Kumar, TSU
- Dr. Avula Venkata Siva Nikhil, CPMU
- Dr. Deepak Kumar Pawar, EMU
- Dr. Devesh Chandra Binwal, NCU
- Dr. Dipanjan Maity, CPMU
- Dr. Gaurab Kumar Khanra, EMU
- Dr. Mayank Kumar Singh, ICMS
- Dr. Naga Prathibha Jasti, CPMU
- Dr. Nandita Braman, EMU
- Dr. Nitin Kumar, ICMS
- Dr. Prasanna Das, CPMU
- Dr. Pratibha Kumari, CPMU
- Dr. Preeti Sagarika, MBGU
- Dr. Priyanka Pandey, MBGU
- Dr. Radhamadhab Das, NCU
- Dr. Rahul Sahu, CPMU
- Dr. Swaraj Servottam, ICMS
- Dr. Vipin Raj K., TSU

## **New appointments – Provisional Research Associate**

- Aditi Saraswat, NCU
- Adrija Ghosh, CPMU
- Akshay Saroha, NCU
- Anju A. K., NCU
- Anustoop Das, NCU
- Bhaskar Kakoty, NCU
- Biplab Patra, NCU
- Darshana Deb, NCU
- Debajit Kalita, NCU
- Disha Brahma, CPMU
- Gauttam Dash, NCU
- Paramesh Das, NCU
- Prerana Muralidhara, MBGU
- Purnendu Pathak, TSU
- Riddhimoy Pathak, NCU
- Ritam Chakraborty, TSU
- Sabyasachi Mandal, NCU
- Saikat Ghosh, NCU
- Simanta Kalita, CPMU
- Souvik Banerjee, CPMU
- Subhajit Chakraborty, NCU

- Sujan K. K., TSU
- Tejaswini S. Rao, CPMU

#### Visiting Scientists

- Dr. Irshad Ahamed, American University of Ras Al Khaimah
- Dr. Jagadeesha Angadi V., K.L.E's P.C. Jabin Science College, Hubli
- Dr. Mukundan Thelakkat, University of Bayreuth, Germany
- Dr. R. M. Hodlur, KLE Technological University, Hubli
- Dr. Sandeep R. Kurundawade, KLE Technological University, Hubli
- Prof. Syed R. Hassan, Institute of Mathematical Sciences, Chennai
- Prof. Tapati Dutta, St. Xavier's College, Kolkata

#### Visiting Students

- Abinav Shete, Indian Institute of Science, Bengaluru
- Amrita, NMAM-IT, Mangalore
- Apoorv Srivastav, Indian Institute of Space Science and Technology, Trivandrum
- Archana Mondal, IISER Berhampur
- Archita Bordoli, Tezpur University, Assam
- Arvind Vinod, Shiv Nadar University, Noida
- Aryan, University of Information Communication and Technology, Delhi
- Ayantik Kundu, IISER Kolkata
- Chhavi Jindal, Cambridge International School, Bangalore
- Debadyuti Jana, University of Calcutta
- Dhanya P., Yuvaraja's College, Mysuru
- Garima Shrivastava, Devi Ahaliya Vishwa Vidhyalaya, Indore
- Hitesh Sumuni, IISER Kolkata
- Kishan, NMAM-IT, Mangalore
- Manu Athreya Karthik, School of Interwoven Arts and Sciences, Krea University, Andhra Pradesh
- Mitreet, Ashok University
- Mriga Joshi, Pune University
- Nikhil M. P., National Forensic Sciences University, Gandhinagar
- Palakshi Jagetiya, Ashoka University, Haryana

- Parnika Joshi, AMITY University, Noida
- Prachi Chandra, Guru Ghasidas Vishwavidyalaya, Bilaspur
- Rahul R., St. Joseph's University, Bangalore
- Raghav Pareek, IISER, Pune
- Rakshit, MAHE, Mangalore
- Samir Deelip, NISER, Odisha
- Shinjinee Paramanik, University of Calcutta
- Shreya Ganguly, IISER Kolkata
- Somangee, ISER Thiruvananthapuram
- Srijith Poosarla, Ashoka University, Haryana
- Tamanna Jindal, University of Maryland
- Vasundara, BITS Goa
- Vrinda Bang, Devi Ahaliya Vishwa Vidhyalaya, Indore

#### Committees Constituted/Reconstituted

- Preparation of the Master Plan and DPR for Chamundi campus (Chairperson: President, JNCASR; w.e.f. 4<sup>th</sup> June 2025)
- High-level Security Coordination Committee (Chairperson: Head, Complab; w.e.f. 23<sup>rd</sup> June 2025)
- Shortlisting cum Selection Committee i.r.o. Jr. Project Engineer and Personal Assistant posts (Chairperson: Prof. Tapas Kumar Kundu; w.e.f. 2<sup>nd</sup> July 2025)
- Committee for auditing space, equipment and facilities at the Centre (Chairperson: Prof. Sridhar Rajaram; w.e.f. 15<sup>th</sup> July 2025)
- Endowment Lectures Committee (Chairperson: Prof. K. S. Narayan; w.e.f. 21<sup>st</sup> July 2025)
- Administration and Finance Committee (Chairperson: Dean, Faculty Affairs; w.e.f. 11<sup>th</sup> August 2025)
- Sub-tender Committee (Chairperson: Prof. Subi J. George; w.e.f. 12<sup>th</sup> August 2025)
- Committee for the Advanced Research Facility (Chairperson: Prof. Sridhar Rajaram; w.e.f. 4<sup>th</sup> September 2025)



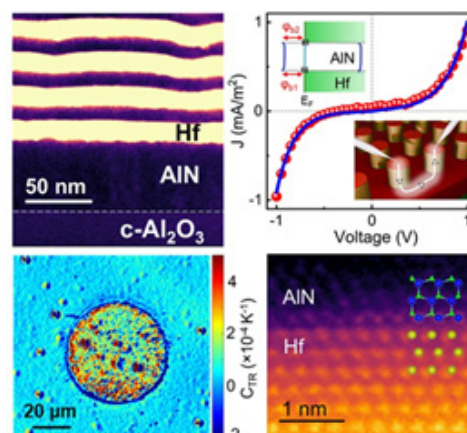
# Research Highlights

## Efficient transformation of heat into power

Prof. Bivas Saha and his team have developed a material that transforms heat into power more efficiently, unlocking new possibilities for electronics and sustainability. By engineering artificially structured defect-free single-crystalline elemental metal/compound semiconductor superlattices that harness interfacial design, the team achieved highly efficient electron transport and utilisation of quantum properties of electrons. This innovation could serve as a cornerstone for future energy-efficient and high-performance technologies.

### News reported by:

- *DST India*, 28<sup>th</sup> March 2025 (<https://dst.gov.in/breakthrough-thermionic-emission-metalsemiconductor-superlattices>)
- X post by DST, 28<sup>th</sup> March 2025 (<https://x.com/IndiaDST/status/1905478129528774702>)



*Electron microscopy image of the newly developed Hf/AlN superlattice along with the electrical measurement data*

## India's Fusion Breakthrough

With scientific support and incubation from JNCASR, and early backing from Industrial47, Pranos is working to build modular nuclear fusion reactors to help India leap ahead in clean-energy technology. This ambitious project can completely transform how electricity is produced and consumed in the country.

### News reported by:

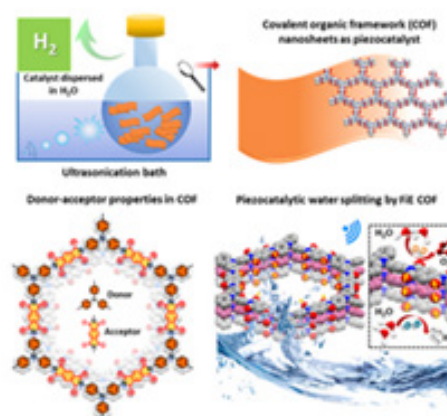
- *Businessline*, 25<sup>th</sup> May 2025 (<https://www.thehindubusinessline.com/specials/emerging-entrepreneurs/chasing-the-sun-bengaluru-start-up-pranos-set-to-power-indias-fusion-future/article69614246.ece>)
- X post by Pranos Fusion, 26<sup>th</sup> May 2025 (<https://x.com/PranosFusion/status/1926988995109490842>)

## Metal-free Catalyst for Green Hydrogen Production

Prof. Tapas K. Maji and his team have developed a metal-free donor-acceptor based covalent-organic framework for piezocatalytic water splitting. This groundbreaking research breaks the tradition of solely employing heavy or transition metal-based ferroelectric (FE) materials as piezocatalysts for catalysing water splitting reaction, while also being more effective.

### News reported by:

- *DST India*, 13<sup>th</sup> May 2025 (<https://dst.gov.in/new-metal-free-organic-catalyst-can-produce-hydrogen-fuel-harvesting-mechanical-energy>)
- *Press Information Bureau*, 5<sup>th</sup> May 2025 (<https://www.pib.gov.in/PressReleaseFramePage.aspx?PRID=2127064>)



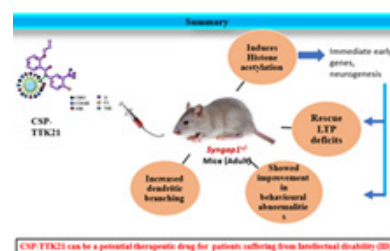
Prof. Premkumar Senguttuvan and his team has achieved a significant breakthrough by developing an NASICON-based sodium-ion battery that charges up to 80% in just six minutes and retains over 80% capacity after 3,000 cycles. This represents a major step towards energy independence and the Atmanirbhar Bharat initiative.

- DST India, 19<sup>th</sup> May 2025 (<https://dst.gov.in/supercharging-future-indias-scientists-design-fast-charging-long-lasting-sodium-ion-battery>)
- Press Information Bureau, 19<sup>th</sup> May 2025 (<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2129649>)
- Kannada Prabha, 24<sup>th</sup> May 2025 (<https://www.kannadaprabha.com/nation/2025/May/24/indias-superfast-sodium-ion-battery-charges-80-in-6-minutes-could-cut-lithium-imports-sources>)
- X Post by CSIR, 20<sup>th</sup> May 2025 ([https://x.com/CSIR\\_NIScPR/status/1924680076970594760](https://x.com/CSIR_NIScPR/status/1924680076970594760))



Team led by Prof. Tapas K. Kundu and Dr. James Clement demonstrated that conjugating TTK21, an activator of the autism-associated p300 enzyme, with glucose-derived nanosphere (CSP-TTK21) and feeding these to autistic mice can induce neuronal rearrangements and restore neuronal function, learning, and memory. This work not only directly connects histone acetylation with autism, for the first time, but also opens a very optimistic door for the treatment of patients with autism/intellectual disability.

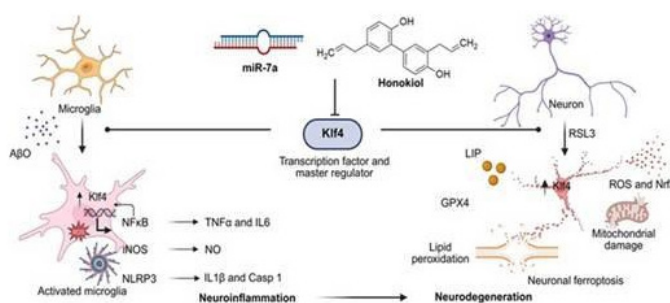
- DST India, 20<sup>th</sup> May 2025 (<https://dst.gov.in/potential-new-autism-therapy-may-help-patients-become-more-self-sufficient>)
- Press Information Bureau, 4<sup>th</sup> April 2025 (<https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2118838>)



*Schematic representing how feeding activator with glucose derived nanosphere could induce acetylation in the brain & control autism*

Prof. Thimmaiah Govindaraju and his student Madhu Ramesh have made a significant breakthrough in Alzheimer's Disease (AD) research by identifying a key regulator of neuroinflammation and ferroptosis – two key drivers of AD. They uncovered that the miR-7a microRNA suppresses Klf4, a master regulator of genes linked to neurodegeneration. By employing miR-7a and a natural small molecule, Honokiol, they were able to target Klf4, offering a promising RNA-based therapeutic strategy for effective management of AD.

- *Biovoice News*, 7<sup>th</sup> August 2025 (<https://biovoicenews.com/breakthrough-rna-therapy-offers-new-hope-for-alzheimers/>)
- *DST India*, 8<sup>th</sup> August 2025 (<https://dst.gov.in/towards-potential-cure-alzheimers-disease>)



*Schematic representation showing the role of miR-7a-Klf4 axis in AD pathology and therapeutic targeting*



# Academic Activities



## Research Admissions

### Regular Admissions (August semester 2025)

Online applications for admissions to Ph.D./M.S.(Engg.)/  
M.S. (Research)/M.Sc. Chemistry/M.Sc. Inter-Disciplinary  
Biosciences/P.G.D.M.S.

Admission interviews



**2152**  
Total  
applications

**799**  
Shortlisted  
candidates

**160**  
Admissions  
offered

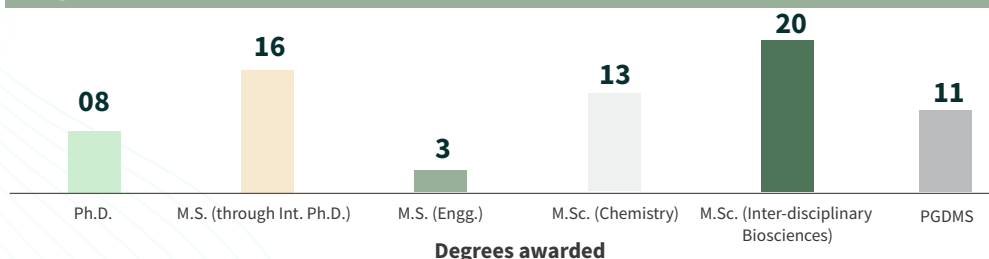
**105**  
New  
joiners



63% Women



## Degrees awarded



## Courses taught

August–December term **53**

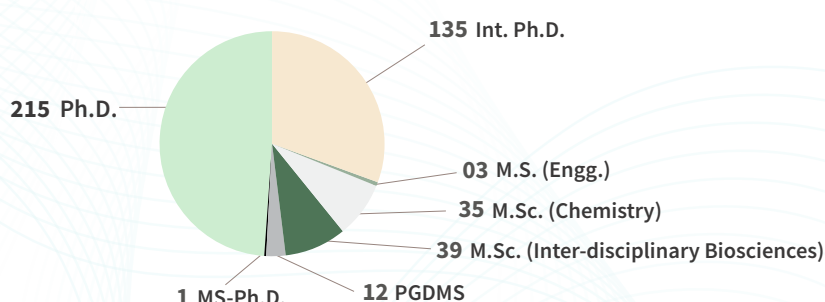


## Current Status and Schedule of Academic Activities

- All newly admitted students have reported at the Centre in August 2025.
- Call for online applications for mid-year admissions to Ph.D./M.S.(Engg.) was announced on 10<sup>th</sup> October 2025. Last date for application is 10<sup>th</sup> November 2025.
- A new B.S. (Research) degree program for undergraduate students to conduct research in the fields of science and engineering will be offered from August 2026.



## Summary of On-roll Students (as on 30th September 2025)



# Awards & Achievements

## Awards and Accolades by Faculty Members

### Prof. H. Ila

- Received the “Prof. Ashima Chatterjee Award” at the International Conference on Chemistry for Human Development, University Science College, Kolkata

### Prof. Umesh V. Waghmare

- Awarded the J.C. Bose Grant for 2025

### Prof. K. S. Narayan

- Awarded the J.C. Bose Grant for 2025

### Prof. Subi Jacob George

- Awarded the J.C. Bose Grant for 2025

### Dr. Achira Roy

- Received certification in competitive EMBO Training: Laboratory Leadership Course, organised by European Molecular Biology Organization (EMBO) Global Activities, Germany, and India Bioscience, India
- Received the ANRF Prime Minister Early Career Research Grant (PM-ECRG)

## Fellowships and Memberships

### Prof. Prof. Jayanta Halder

- Nominated as a Member of Scientific Advisory Committee of ICMR-National Institute for Research in Bacterial Infections, Kolkata

### Prof. Subi Jacob George

- Selected as Fellow of the Indian National Science Academy (INSA) 2025 for contributions to supramolecular chemistry

### Prof. Rajesh Ganapathy

- Selected as Fellow of the INSA 2025 for contributions to physics of soft matter

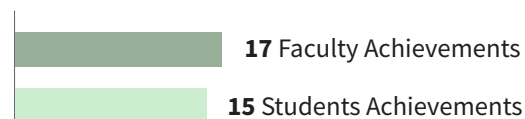
### Prof. Tapas Kumar Maji

- Elected Fellow of The World Academy of Sciences 2025
- Selected as an Advisory Board Member of *Dalton Transactions* (RSC Journal)

### Dr. Pratap Vishnoi

- Awarded the Sheikh Saqr Career Award Fellowship for the period from 1<sup>st</sup> July 2025 to 30<sup>th</sup> June 2026

### Awards / Fellowships / Memberships



### Prof. Kanishka Biswas

- Joined as a member of the International Advisory Board of *Advanced Materials*

### Prof. Kushagra Bansal

- Selected as a Section Editor of *The Journal of Immunology*
- Joined as a member of the Molecular Immunology Forum (MIF)

### Dr. Varun Bhaskar

- Joined as Early Career Editorial Board Member of *Molecular Biology of the Cell*

### Dr. Achira Roy

- Appointed as a Section Editor for *Bio-protocol*

## Student Achievements

- Abhijith A. V.** (Ph.D. student, EOBU; Research Supervisor: Dr. Anand Krishnan) received a Research Grant from Oriental Bird Club, UK to support his field research in Wayanad, Kerala and received the ASAB award in September 2025 for publication of outstanding work in animal behaviour.
- Amit Kumar** (Ph.D. Student, MBGU; Research Supervisor: Prof. Kushagra Bansal) won the DMM conference travel grant to attend “*Immunology 2025*” held in Honolulu, Hawaii, USA during 3<sup>rd</sup>–7<sup>th</sup> May, 2025.
- Ankana Sanyal** (Ph.D. student, EOBU; Research Supervisor: Prof. T. N. C. Vidya) has been awarded a Conference Attendance Grant by the ASAB to attend and present her work at the Behaviour 2025 meeting.
- Athira T. K.** (Ph.D. student, EOBU; Research Supervisor: Prof. T. N. C. Vidya) has been awarded a Conference Attendance Grant and Registration Fee Support by the Association for the Study of Animal Behaviour (ASAB) and Dakshin Foundation and CES, IISc, to attend and present her work at the Behaviour 2025 meeting.



- **Dipanjana Patra** (Int. Ph.D. Student, NCU; Research Supervisor: Prof. Jayanta Haldar) Research article selected to be featured in RSC Nanoscale *“Celebrating International Women’s day 2025: Women in Nanoscience”*.
- **Harshdeep Kaur** (Int. Ph.D. Student, MBGU; Research Supervisor: Prof. Kushagra Bansal)
  - Received the DBT international travel award to attend the 19<sup>th</sup> International Congress of Immunology held from 17<sup>th</sup>–22<sup>nd</sup> August 2025 in Vienna, Austria.
  - Won the Disease Models & Mechanisms (DMM) Conference Travel Grant to attend the workshop on DNA topology and topoisomerases in genome dynamics from 15<sup>th</sup>–19<sup>th</sup> September 2025 in Szklarska Poręba, Poland.
- **Nandini Saha** (Ph.D. Student, NCU; Research Supervisor: Prof. Jayanta Haldar) was selected for talk and poster presentation at the Global Scientific Conference, organised by the American Chemical Society at IIT Bombay.
- **Parthapratim Nath** (Ph.D. student, NCU; Research Supervisor: Dr. Pratap Vishnoi) won the Best Poster Award at the National Symposium on Advances in Functional Materials for Energy and Catalytic Applications, organised by NIT Surathkal (Karnataka) and held from 7<sup>th</sup> to 11<sup>th</sup> May 2025.
- **Priyanka** (Ph.D. Student, NCU; Research Supervisor: Prof. Jayanta Haldar)
  - Selected for C-CAMP AMR Quest organised by C-CAMP.
  - Selected for talk and poster presentation at the Global Scientific Conference, organised by the American Chemical Society at IIT Bombay.
- **Rahul Kumar** (Ph.D. alumni, CPMU; Research supervisor: Prof. Sundaresan), currently a Postdoctoral Researcher at the Center for Quantum Materials, Department of Physics and Astronomy, Seoul National University, South Korea, won the KVRSS Research Award 2024–25 in Bhoutikam (Physics).
- **Supriya Varsha Bhagat** (Ph.D. student, MBGU; Research Supervisor: Prof. Tapas Kumar Kundu) received the Best Poster Prize at the 18<sup>th</sup> Asian Epigenomics Meeting during 8<sup>th</sup>–10<sup>th</sup> July 2025 at Gifu, Japan.
- **Yash Acharya** (Ph.D. student, NCU; Research Supervisor: Prof. Jayanta Haldar)
  - Selected for the ASM Future Leaders Mentorship Fellowship of the American Society for Microbiology.
  - Delivered talks at the *GRC Staphylococcal Diseases* held in Portugal and the Antimicrobial Resistance Research Symposium 2025, organised by the Tata Institute for Genetics and Society and National Centre for Biological Sciences.



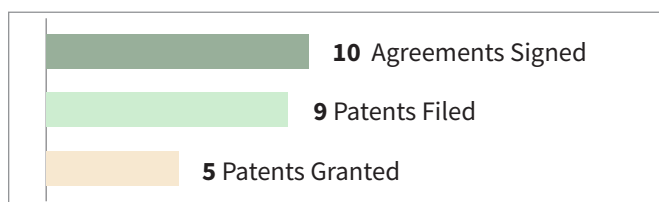
# ■ Research & Development

## Memorandums of Understanding (MoUs) and Memorandums of Agreement (MoAs)

- An MoU was signed with the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, to facilitate submission of projects, collaborative activities, share and access resources, on 25<sup>th</sup> September 2025 by Prof. Ravi Manjithaya.
- An MoA was signed with DBT to carry out the project “*The convergence of the Classical and Alternative NF-κB pathways confers replication advantage on HIV-1C*” on 6<sup>th</sup> June 2025 by Prof. Udaykumar Ranga.
- An MoA was signed with DBT to carry out the project “*Controlled release of Olfactory Cues for the Management of Lesser Grain Weevil, Sitophilus oryzae, Stored Product Pest of Rice*” on 11<sup>th</sup> June 2025 by Prof. M. Eswaramoorthy.
- An MoA was signed with DBT to carry out the project “*In-aqueous fabrication of antimicrobial covalent coating on catheters to mitigate catheter-associated urinary tract infections (CAUTIs)*” on 28<sup>th</sup> July 2025 by Prof. Jayanta Halder.
- An MoA was signed with DBT to carry out the project “*Investigation of the role of glial gap junction protein, OGRE, in modulating adult behaviors of Drosophila melanogaster*” on 18<sup>th</sup> September 2025 by Dr. Roshan Fatima Begum under the mentorship of Prof. Sheeba Vasu.

## Non-Disclosure Agreements (NDAs)

- An NDA was signed with M/s. Trane Technologies, Bengaluru for the purpose of discussing and/or exploring a potential business transaction and/or collaborative relationship relating to JNCASR’s Metal-Organic Framework (MOF) technologies for Trane Technologies’ applications on 10<sup>th</sup> June 2025 by Prof. Tapas K. Maji.
- An NDA was signed with M/s. Ola Cell Technologies Pvt. Ltd., Pune to facilitate mutual discussions on potential areas of research and technological advancements in sodium-ion batteries on 16<sup>th</sup> June 2025 by Prof. Premkumar Senguttuvan.
- An NDA and confidentiality agreement was signed with M/s. THERMAX Limited (Division: RTC), Pune to engage in services related to Simulation Study of Metal Hydrides Based Applications on 25<sup>th</sup> August 2025 by Prof. Santosh Ansumali and Dr. Diwakar S.



## Collaborative Research Agreement (CRA)

- A CRA was signed with M/s. Trane Technologies, Bangalore, to landscape, design, develop, and produce required amount of suitable MOF material for analysis and testing as per the requirements of Trane Technologies on 9<sup>th</sup> September 2025 by Prof. Tapas K. Maji.
- A CRA was signed with M/s. Trane Technologies, Bangalore for preliminary design and development of Graphene-based composite materials and characterisation of GCM materials by different techniques on 9<sup>th</sup> September 2025 by Prof. Tapas K. Maji.

## Visit of R&D Teams

The following R&D Teams visited the Centre for a discussion meeting for possible collaborative research projects/ research funding:

- R&D team from M/s. CrisprBits Pvt. Ltd., Bengaluru (represented by Dr. Vijay Chandru, Founder), visited on 24<sup>th</sup> July 2025.
- R&D team from M/s. Jubilant Therapeutics India Ltd., Bengaluru (represented by Dr. Syed Kazmi, CEO) visited on 5<sup>th</sup> August 2025.
- Dr. Shrinivas Kulkarni, Head of the Material Science Division THERMAX Ltd. (RTIC Division), Pune held an online meeting with JNCASR on 8<sup>th</sup> August 2025.
- R&D team from M/s. Trane Technologies, Bangalore (represented by Dr. Zubin Varghese, Senior Director, Innovation and CoE) visited on 9<sup>th</sup> September 2025.
- Delegation from Lithuanian Laser Association, Lithuania (represented by Dr. Kristina Ananiciene, Executive Director) visited on 19<sup>th</sup> September 2025.

## Donation from Industry

- SankhyaSutra Labs Ltd., Bengaluru, donated an amount of ₹5.2 lakhs on 7<sup>th</sup> August 2025 to support meritorious students with financial need under the Graduate Research Internship Programme (GRIP) of the Centre. This funding is designated for students specialising in the field of Engineering Sciences.



# ■ Intellectual Property

## Patent Applications Filed

### India, Provisional

- Prof. Tapas Kumar Kundu *et al.* (No. 202541047524, filed on 16<sup>th</sup> May 2025)
- Prof. Sebastian Chirambatte Peter *et al.* (No. 202541048822, filed on 20<sup>th</sup> May 2025)
- Prof. Premkumar Senguttuvan *et al.* (No. 202541071100, filed on 25<sup>th</sup> July 2025)

### India, Complete

- “A High-Entropy Alloy (HEA) Catalyst And Methods Thereof” developed by Prof. Sebastian Chirambatte Peter *et al.* (No. 202541058976, filed on 19<sup>th</sup> June 2025)
- “An Electrolyte and Implementations Thereof” developed by Prof. Premkumar Senguttuvan *et al.* (No. 202541065648, filed on 9<sup>th</sup> July 2025)
- “A Memristor Device And Method Thereof” developed by Prof. Giridhar Udapi Rao Kulkarni *et al.* (No. 202541069852, filed on 22<sup>nd</sup> July 2025)
- “A Nitride Material, Its Preparation Process, And a Device Thereof” developed by Prof. Bivas Saha *et al.* (No. 202541072202, filed on 29<sup>th</sup> July 2025)
- “Compositions Comprising Carbon Nanosphere for Treatment of Tuberculous” developed by Prof. Tapas K. Kundu *et al.* (No. 202541080565, filed on 25<sup>th</sup> August 2025)
- “An Antimony Doped Indium Halide Compound, A Light Emitting Thin Film, and Methods Thereof” developed by Dr. Pratap Vishnoi *et al.* (No. 202541091092, filed on 23<sup>rd</sup> September 2025)

## Patents Granted

### India

- Patent (No. 571105) for “A Composite, Scaffold and Applications Thereof” developed by Prof. Govindaraju Thimmaiah, *et al.*
- Patent (No. 563425) for “A p-Type Material, and Implementations Thereof” developed by Prof. Kanishka Biswas, *et al.*
- Patent (No. 569701) for “A Polymer Nanocomposite for Radiative Cooling” developed by Prof. Bivas Saha, *et al.*

### Europe

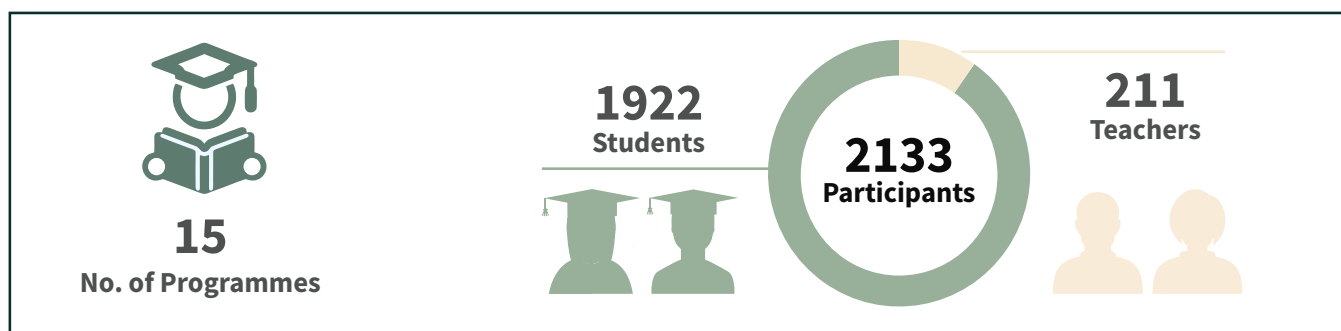
- Patent (No. 20790881.5) for “Small-molecular adjuvants to repurpose existing antibiotics against multidrug-resistant bacterial infections” developed by Prof. Jayanta Haldar, *et al.*

### USA

- Patent (No. 12,414,467) for “A p-Type Material, and Implementations Thereof” developed by Prof. Kanishka Biswas, *et al.*



## ■ Outreach Activities - Education Technology Unit (ETU)



During April to September 2025, the Education Technology Unit (ETU) of JNCASR carried out a vibrant series of 15 science outreach programs across India, with a focus on rural and underserved regions. These initiatives aimed to nurture scientific curiosity and experiential learning among 1,922 students and 211 teachers, engaging a total of 2,133 participants through interactive lectures, experiments, and demonstrations.

- The programs were inaugurated with a large-scale event at Jawahar Navodaya Vidyalaya, Morbi (Gujarat) on 11–12 April, graced by Prof. C. N. R. Rao and Dr. Indumati Rao, and followed by similar initiatives in Diu, IIT Dharwad, and Uttarakhand, covering themes such as learning science through experiments, light and matter, and hands-on research exposure. The May–June 2025 period saw events at Sir M. Visvesvaraya Institute of Technology, Bengaluru, the Institute of Mathematical Sciences, Chennai, and the Visvesvaraya Industrial & Technological Museum, engaging diverse groups of school and college students, science teachers, and museum professionals.
- Special thematic programs were organised under

the C. N. R. Rao Education Foundation, such as *Vijnan Manthana-1* (Introduction to Organic Chemistry) and the Outstanding Science Teacher Award & Chemistry Hands-on Experiments, which drew participation from over 350 students and 40 teachers.

- Further outreach in July–August 2025 included a Biology lecture series led by Prof. Ravi Manjithaya, celebrating curiosity in life sciences through lab visits and visit to the ChemExpo; a commemorative event honouring Dr. Syama Prasad Mookerjee's 125<sup>th</sup> Birth Anniversary; and National Space Day celebrations, featuring an inspiring lecture on India's *Gaganyaan Mission* by Dr.B.R.Guruprasad, coupled with interactive experiments.
- A key highlight was the five-day Science Outreach Camp in Leh, Ladakh (1–5 September 2025), inaugurated by Prof. Umesh V. Waghmare, President, JNCASR, which engaged 240 students and 20 teachers from the region. Subsequent events included the Sagar Science Camp (22–25 September) and an Interactive Lecture Program in Physics and Chemistry (30 September) for students from Hassan and Bengaluru.



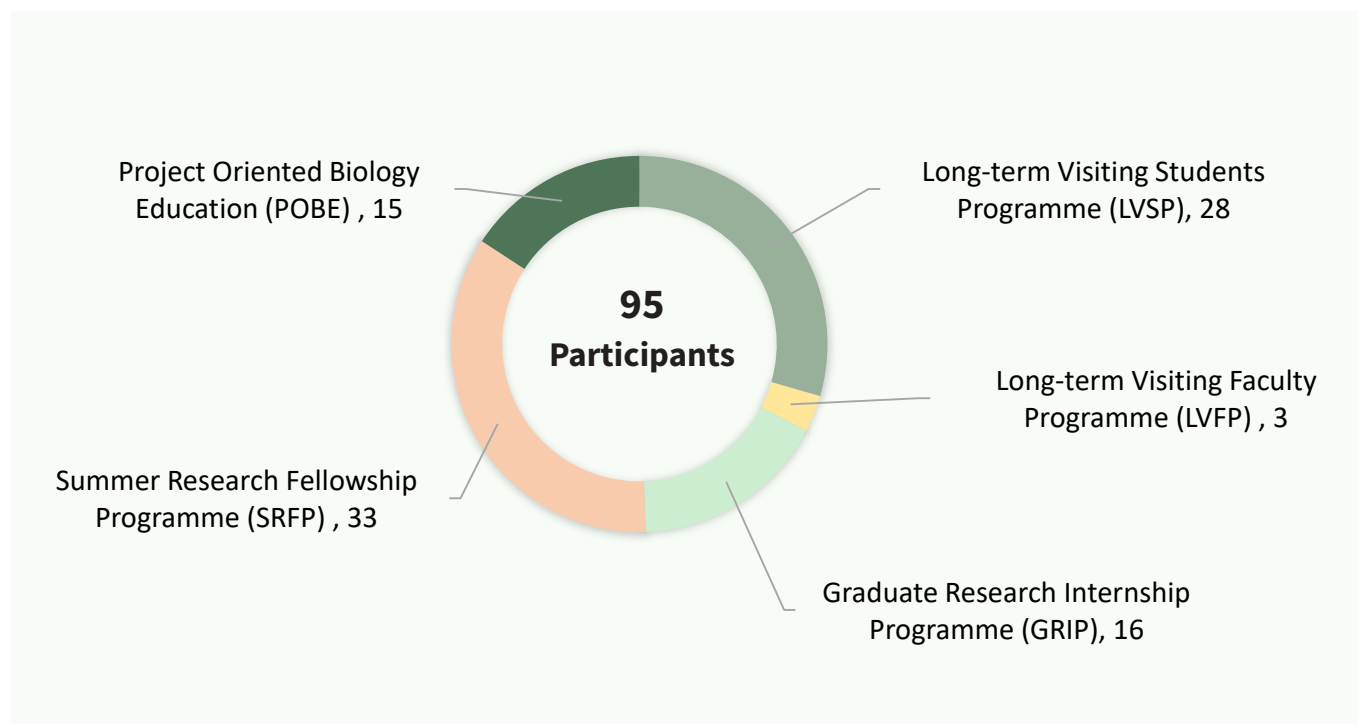
Left to right: Glimpses from the Interactive Lecture Program in Biology held on 18<sup>th</sup> July 2025; Participants from the Science Outreach Programme on 21<sup>st</sup> August 2025 exploring the ChemExpo, and the C. N. R. Rao Galleries

Left to right: Lecture by Dr. B. R. Guruprasad on National Space Day; Students actively participating in the QnA session.



# ■ Outreach Activities - Fellowships & Extension (F&E) Programmes

## Fellowship Programmes



### DBT Sponsored Biotechnology Career Advancement and Re-orientation (BioCARE) Programme

Dr. Roshan Fatima Begum has joined as the Project Investigator (PI) under the mentorship of Prof. Sheeba Vasu, NSU, to carry out the project “*Investigation of the role of glial gap junction protein, OGRE, in modulating adult behaviors of Drosophila melanogaster*” for a period of three years w.e.f. 10<sup>th</sup> September 2025.

### Long-term Visiting Faculty Programme (LVFP)

- Dr. Raghu Vamsy Maligal Ganesh, Assistant Professor, Department of Chemistry, Krea University, Andhra Pradesh, completed the LVFP from 9<sup>th</sup> May 2025 to 23<sup>rd</sup> June 2025 under the guidance of Prof. Sebastian C. Peter, NCU and submitted a project report titled: “*Scalable synthesis of non-precious multi-metallic catalysts for the utilisation of CO<sub>2</sub> to value-added product.*”
- Dr. Rajashree M. Hodlur, Assistant Professor, Department of Physics, KLE Technological University,

Hubli, completed the LVFP from 28<sup>th</sup> July 2025 to 16<sup>th</sup> September 2025 under the guidance of Prof. G. U. Kulkarni, CPMU and submitted a project report titled: “*A Preliminary structural & electronic investigation of ZrTe<sub>5</sub> for phase-change material research.*”

- Dr. Sandeep Kurundawade, Assistant Professor, Department of Physics, KLE Technological University, Hubli, completed the LVFP from 4<sup>th</sup> August 2025 to 12<sup>th</sup> September 2025 under the guidance of Prof. G. U. Kulkarni, CPMU and submitted a project report titled: “*The design, lithography & metal deposition on the microelectrode patterns.*”

### Institutional Visit Programme (IVP)

In total, 284 students pursuing various UG/PG Science and Engineering programs from different colleges and universities visited the Centre’s research labs, NSM facility, Chemical Exposition, and C.N.R. Rao Hall of Science Gallery.

## Activities by PAIRs Office

The Placement, Alumni and International Relations (PAIRs) office of JNCASR been working to offer the following benefits to the alumni: email address, subsidised stay at the JNC guest house, and alumni ID cards. Currently, it is in the process of formulating the office of “*Corporate Affairs*” and recruiting a professional whose key responsibilities will include fund raising, branding and securing sponsorships, strengthening alumni engagement, offering placement and career services, and fostering industry partnerships. PAIRS is facilitating a collaboration between University of Bayreuth, Germany and JNCASR, India, which will include student exchange and the introduction of joint degree programmes that integrate research and skill development.

## ■ Implementation of Official Language (Hindi Cell)

### OLIC Meetings

During the past six months, two meetings were organised to monitor OL implementation.

### Hindi Workshop

Two Hindi Workshops – on “*Hindi Noting & Drafting*” and on “*How to use bilingual format in routine correspondence*” – were organised.

### Hindi Fortnight Celebrations 2025

“*Hindi Fortnight Celebrations 2025*” was held from 14<sup>th</sup> to 29<sup>th</sup> September 2025. On the first day, “*Hindi Fortnight Message*” by the President of JNCASR was released. During the fortnight, various Hindi Competitions, Hindi Essay, Hindi Workshop, Hindi Quiz, and Hindi Anthakshari were organised. Additionally, the “*Indian Languages Harmony Day*” was observed to promote harmony amongst different languages and included a “*Indian Languages Singing Competition*” event that saw participation of ~50 individuals.





## Lectures, Seminars, and Conferences

The **DAE Raja Ramanna Foundation Lecture** was delivered by Prof. Mandar M. Deshmukh from the Department of Condensed Matter Physics and Materials Science Lab, TIFR, Mumbai on the topic “*Moiré materials for probing Berry curvature physics*” on 17<sup>th</sup> April 2025.



The **Prize Lecture** on “*Wrinkles in 2D Semiconductors: Tiny folds with Giant Impact*” was delivered by Prof. Joy Mitra from School of Physics, IISER, Thiruvananthapuram



The **Prof. C.N.R Rao Oration Award Lecture 2025** was delivered on 11<sup>th</sup> August 2025 by Prof. Tapas Kumar Kundu, MBGU on the topic “*Epigenetic Regulation of Neurological Disorders: Role of Lysine Acetyltransferases p300/CBP*”.



Apart from the above, 40+ other events were cumulatively organised by various units of the Centre, including seminars, lectures, workshops, and conferences.

## ■ Upcoming Events

- International Winter School on Frontiers in Materials Science 2025 will be held between 1<sup>st</sup> and 6<sup>th</sup> December 2025.
- Satellite Conference on Computer Simulations in Chemistry, Materials and Biology will be held between 1<sup>st</sup> and 6<sup>th</sup> December 2025.
- Workshop on Innovative Devices for Emerging Applications (IDEA-2026) will be held from 8<sup>th</sup>–9<sup>th</sup> January 2026 at JNCASR, Bengaluru.
- 26<sup>th</sup> Biennial Meeting of the International Society for Developmental Neuroscience (ISDN2027) will be held from 1<sup>st</sup> to 5<sup>th</sup> February 2027.



[www.jncasr.ac.in](http://www.jncasr.ac.in)



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