

NISER VIBES

Newsletter



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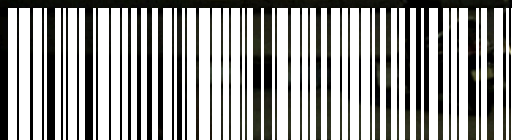




TABLE OF CONTENTS

01 NEW FACILITIES

Silicon detector, MPGD, RPC & Muography laboratory 02

02 GROUNDBREAKING CEREMONY

Ground breaking ceremony of HBCHRC 03

03 ACADEMIC EVENTS

Conferences, Workshops, Talks & Special Lectures 04

04 DISCOVERY & OUTREACH

Research and Discovery 09

Outreach Programs 09

05 AWARDS & HONOURS

Faculty Achievements 10

Students' Achievements 10

06 OTHER EVENTS

Various Institutional Occasions 11

07 STUDENT ACTIVITIES

Diverse Club Engagements 13



Message From The Director

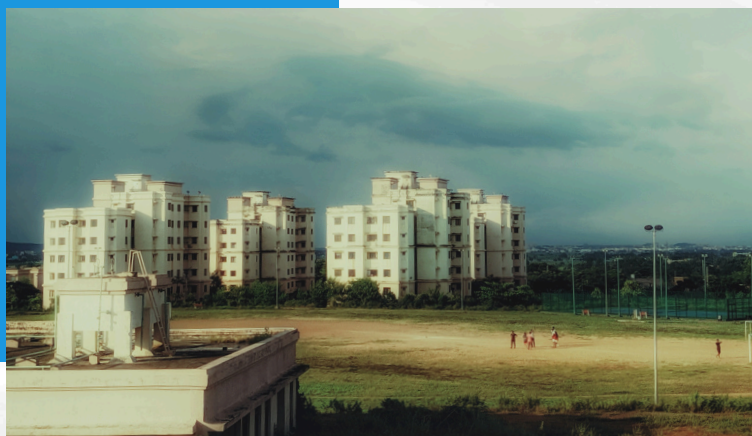
Dear Friends,

I am thrilled to present the Vibes July-December 2023 edition, a comprehensive campus newsletter encapsulating the vibrant spirit and accomplishments of our institute.

During this period, NISER has experienced remarkable expansions, including the establishment of the Silicon Detector Lab for high-energy physics, the MPGD lab for single-photon detection in medical imaging, the RPC and Muography Lab for cosmic-ray muon imaging, and the ISO-6 Cleanroom dedicated to supporting research on detectors. These developments signify our commitment to advancing cutting-edge research and technology within the academic community.

NISER's excellence shines through as Dr. Bishnu Prasad Biswal and Dr. Rekha Biswal are honored with the Odisha Young Scientist Award, recognizing their outstanding contributions. Our scientists, notably Dr. Shovon Pal, actively contribute to multinational collaborations, presenting groundbreaking findings that advance scientific knowledge.

Dr. Pal's noteworthy work on fermionic critical slowing down in YbRh_2Si_2 demonstrates the institute's commitment to pioneering research. Additionally, the collaborative efforts of Dr. Pal and Dr. Biswal in synthesizing crystalline covalent organic framework membranes underscore NISER's dedication to innovative and impactful scientific endeavours.



I express heartfelt gratitude to the entire NISER community, encompassing students, faculty, and staff, for collectively nurturing a dynamic hub of learning, research, and innovation. A special acknowledgement goes to all contributors whose unwavering dedication continues to propel the ongoing growth of NISER and infuse our newsletter with vibrancy.

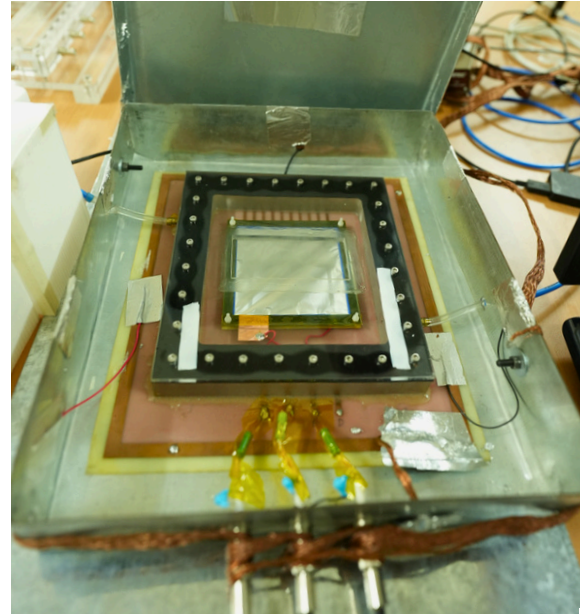
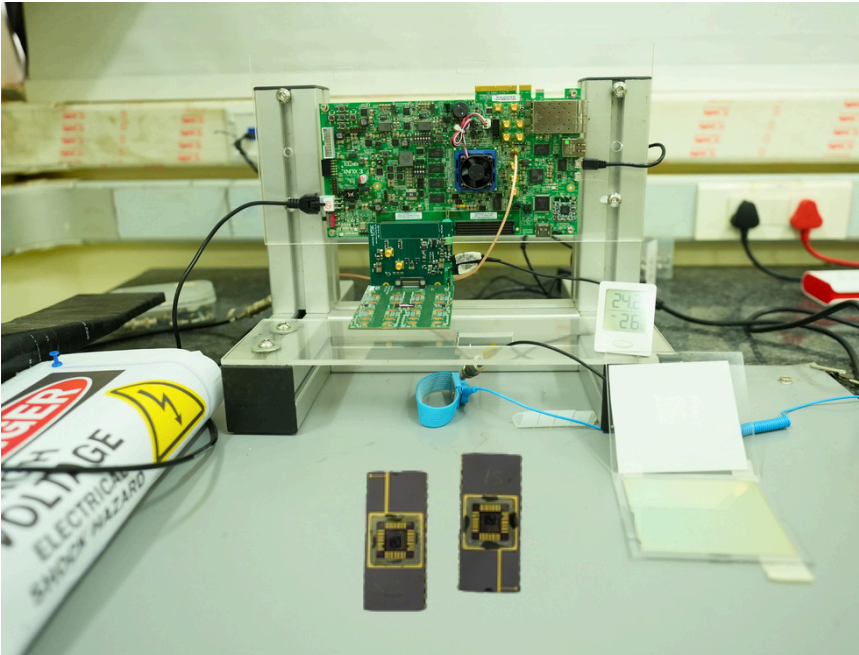
Prof. Hirendra Nath Ghosh
Director, NISER

ADVANCED FACILITIES, EQUIPMENTS AND SERVICES

CENTER FOR MEDICAL AND RADIATION PHYSICS

SILICON DETECTOR LABORATORY

A laboratory dedicated to silicon detectors has been established, focusing on the testing of Silicon Pad detectors and Silicon Photomultiplier detectors. This facility will undertake research and development (R&D) activities pertaining to silicon detectors, addressing both high-energy physics and applications related to societal imaging.



MPGD LABORATORY

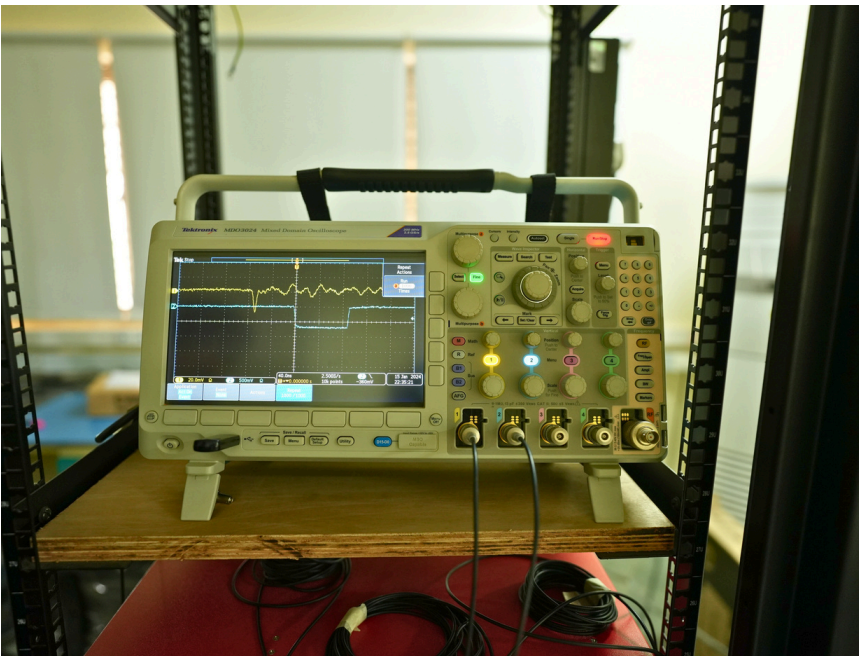
A laboratory specializing in Micro Pattern Gaseous Detectors has been established to conduct research and development (R&D) focused on these detectors, specifically for single photon detection. The facility will be utilised for the creation of devices intended for applications in medical imaging, particle physics research, and social security.

RPC & MUOGRAPHY LABORATORY

The institute established a laboratory dedicated to Resistive Plate Chambers (RPC) for particle physics research. The laboratory is actively involved in developing a cosmic-ray muon imaging facility utilising RPCs. Muon imaging telescopes are being designed for applications in both radiography and tomography.

CLEANROOM FACILITY

A cleanroom with ISO-6 (class 1000) standards, covering around 300 sq. ft, has been established, featuring a dual pass box facility. This is currently utilised for the assembly, testing, and research and development (R&D) of silicon and gaseous detectors.



MEET OUR DIRECTOR

Professor Hirendra Nath Ghosh

Professor Ghosh assumed the role of Director at NISER Bhubaneswar on September 29, 2023. He has an extensive academic and administrative background, holding significant positions as Scientific Officer at Bhabha Atomic Research Centre (BARC), Mumbai, and Senior Professor and Director (Officiating) at the Institute of Nano Science and Technology (INST), Mohali.

Professor Ghosh has garnered numerous awards and honours throughout his distinguished career. Some of these accolades include the INSA Young Scientist Medal, A. K. Bose Memorial Award, APA-Prize for Young Scientist, Homi Bhabha Science & Technology Award, CRSI Bronze Medal, CRSI Silver Medal, C. N. R. Rao National Prize for Chemical Research, and DAE-SRC Outstanding Investigator Award.

Recognized by all three major academic institutions in India, Professor Ghosh is a Fellow of the National Academy of Science (FNASc) since 2009, a Fellow of the Academy of Science (FASc) since 2013 and a Fellow of the Indian National Science Academy (FNA) since 2017. Recently, he was honoured as a Fellow of the National Academy of Engineering (FNAE) in 2023. In addition, he is the recipient of the J. C. Bose National Fellowship from the Department of Science and Technology, Government of India.



GROUND BREAKING CEREMONY OF HBCHRC

The Groundbreaking Ceremony of the Homi Bhabha Cancer Hospital and Research Centre (HBCHRC) took place on October 3, 2023, at the National Institute of Science Education and Research Bhubaneswar's Pathani Samanta Auditorium, in the presence of Odisha's Chief Minister, Shri Naveen Patnaik.

The initiative, which embodies a collaborative effort involving the Tata Steel Foundation (TSF), the Department of Atomic Energy (DAE), the Tata Memorial Centre, NISER, and the Government of Odisha, aims to establish a state-of-the-art cancer care, research, and innovation center of global standards, featuring a 200-bed hospital. The centre is expected to be fully commissioned by December 2025.

The facility will be equipped with cutting-edge technology, providing comprehensive cancer treatment, including radiation therapy, advanced surgery, chemotherapy, targeted therapies, and stem cell transplants.

In addition to medical services, the HBCHRC aims to engage in community outreach. This involves creating awareness about cancer prevention, early detection, and treatment through screening and early detection programmes in the state.

ACADEMIC EVENTS

XII GRADUATION CEREMONY



NISER celebrated a significant milestone with its 12th Graduation Ceremony on July 17, 2023. This memorable event served as a platform to recognize and honor the accomplishments of its graduates from various academic programs including 5-year Integrated M.Sc., Integrated Ph.D., and Ph.D. Students were bestowed with degree certificates, mark sheets, and medals, symbolizing their dedication and hard work throughout their academic journey.

The ceremony witnessed the graduation of a total of 165 Integrated M.Sc., 1 Integrated Ph.D., and 55 Ph.D. students, each embarking on their next chapter equipped with knowledge and skills acquired at NISER.

Dr. V. K. Saraswat, the esteemed Member of NITI Aayog and Chancellor of Jawaharlal Nehru University-New Delhi, graced the occasion as the Chief Guest, imparting valuable insights and inspiration to the graduates. Prof. Ajit K. Mohanty, the respected Chairman of the Board of Governors at NISER, presided over the ceremony, adding to the grandeur of the event.

The 12th Graduation Ceremony stands as a profound testament to the unwavering academic excellence and steadfast commitment to nurturing future leaders demonstrated by NISER. It not only signifies the culmination of years of hard work but also marks the auspicious beginning of a new journey, brimming with endless possibilities and promising opportunities for the graduates.

Overall Topper

- Mr. Aditty Pal from the School of Chemical Sciences has been honored with the prestigious gold medal, towards recognizing his exceptional achievement as the top performer in overall academic excellence among graduating students across all disciplines within the Integrated M.Sc. program.



Department Topper

- Mr. Priyobrata Biswas, from the School of Biological Sciences, has secured the top position in Integrated M.Sc. in Biology with an impressive CGPA of 9.25.
- Mr. Aditty Pal, from the School of Chemical Sciences, has secured the top position in Integrated M.Sc. in Chemistry with an outstanding CGPA of 9.67.
- Mr. Apratim Choudhury, from the School of Mathematical Sciences, has secured the top position in Integrated M.Sc. in Mathematics with an impressive CGPA of 9.27.
- Mr. S Gauthameshwar, from the School of Physical Sciences, has achieved the highest position in Integrated M.Sc. in Physics with an outstanding CGPA of 9.30.



Best Thesis Awards

- Mr. Shubham Kumar, affiliated with the School of Biological Sciences, received the Best Integrated M.Sc. Thesis Award within his graduating class. His guide was Dr. Renjith Mathew.
- Mr. Aniruddha Seal, from the School of Chemical Sciences, earned the Best Integrated M.Sc. Thesis Award in his graduating class within the discipline. His guide was Dr. Upakarasamy Lourderaj.
- Mr. Sai Sriharsha Indukuri, from the School of Mathematical Sciences, received the Best Integrated M.Sc. Thesis Award within his graduating class. His guide was Dr. Sutanu Roy.
- Mr. S Gauthameshwar, from the School of Physical Sciences, was honored with the Best Integrated M.Sc. Thesis Award in his discipline's graduating class. His guide was Dr. Tapan Mishra.

Memorial Awards

- Mr. S Gauthameshwar received the Sarat Chandra-Annapurna Maharana Award in Physics for achieving the highest academic performance in the School of Physical Sciences, with a CGPA of 9.30.
- Mr. Aditty Pal received the Smt. Jayalaxamma Memorial Award in Chemistry for achieving the highest academic performance in the School of Chemical Sciences, with a CGPA of 9.67.
- Mr. Apratim Choudhury received the Tribikram Pati Memorial Award in Mathematics for achieving the best academic performance in the School of Mathematical Sciences, with a CGPA of 9.27.
- Mr. Priyobrata Biswas received the Dr. Sumitra Maharana Memorial Award in Biology for achieving the best academic performance in the School of Biological Sciences, with a CGPA of 9.25.
- Ms. Fida Salim from the School of Physical Sciences received the Mrs. Kanak Benjamin Memorial Award for achieving the best academic performance among all female students in the graduating class, with a CGPA of 9.26.
- Mr. Aditty Pal from the School of Chemical Sciences received the Iswar-Parbati Memorial Award for achieving the best academic performance in the courses offered by the School of Humanities and Social Sciences, with a CGPA of 9.67 in the HSS courses.



The School of Mathematical Sciences organised the “**Workshop on Geometry Analysis and Mathematical Physics**” from July 24 to August 2, 2023. The event aimed to gather experts specializing in THE Geometry, Analysis, and Mathematical Physics to explore a diverse range of topics. This program provided a valuable opportunity for young participants to engage in and advance their research in these dynamic areas of mathematics.

The School of Computer Sciences arranged the event “**Recent Trends in Algorithms**,” held from July 26 to July 28, 2023. The objective was to offer a comprehensive overview of the latest research in algorithms, presented through a series of invited talks.

In collaboration with Springer Nature, the Central Library at NISER organised an author workshop titled “**Scientific Writing & Publishing**” on August 25, 2023. Specifically designed for NISER’s faculty members, scientific officers, research scholars, PDFs, and integrated MSc (4th Year & 5th Year) students, the workshop was conducted by Ms. Swati Meherishi, Editorial Director at Springer Nature.



On September 12, 2023, CMRP hosted a seminar on **Cancer Biology and Treatment** featuring Dr. Satyajee Rath from Bagchi Sri Shankara Cancer Hospital, who delivered an informative talk, fostering knowledge exchange in the field.

The event “**Inter IISER-NISER Mathematics Meet (IINMM)**” took place from September 29 to October 1, 2023, as a collaborative effort among all the IISERs and NISER. The primary objective of this event is to facilitate the gathering of researchers from the IISERs and NISER on a unified platform, promoting the exchange of ideas and encouraging collaborative research across various domains of mathematics. Additionally, the event serves as a platform for Ph.D. students and Postdoctoral Fellows (PDFs) from these institutes to present their research findings and engage in meaningful interactions with fellow researchers in related fields.



On October 6, 2023, the Central Library conducted a “**Training Session on SciFinder-n**.” This session was tailored for research scholars, faculty members, and scientific officers affiliated with the School of Chemical Sciences and the School of Biological Sciences. Dr. Nabin Sarkar, a Customer Success Specialist from ACSI India Pvt. Ltd., was the speaker at this enlightening session.



The School of Physical Sciences at NISER organised the “**2nd Workshop on Dynamics of QCD Matter**” from October 7 to October 9, 2023. The primary objective of this workshop is to facilitate direct scientific exchange among younger members of the Relativistic Heavy Ion and QCD community in India, encompassing both experimental and theoretical perspectives. The discussions during the workshop focused on advancing the fundamental understanding of strongly interacting matter under extreme conditions.



The Disaster Management Group of the Department of Atomic Energy (DAE) coordinated the capacity-building programme titled “**Integrated Mission for Preparedness, Awareness-cum-Training (IMPACT) on Nuclear and Radiological Emergencies (NRE) in the Public Domain**” at NISER. The two-day event unfolded on October 18 and 19, 2023 in collaboration with the Odisha State Disaster Management Authority.





The School of Physical Sciences hosted the “Annual Conference on Quantum Condensed Matter (QMAT)” from November 27th to 30th, 2023. The primary goal of the conference was to foster a sense of community among researchers in this field. To achieve this objective, the event was carefully structured to facilitate participation from a diverse spectrum of active researchers. The conference featured a combination of invited and contributed talks, with parallel sessions taking place concurrently over the course of three days.



On Nov. 7, 2023, in commemoration of International Medical Physics Day, a seminar took place at the Center for Medical and Radiation Physics, NISER. The event featured an online talk by Dr. Dayananda Sharma, Professor and Head of the Department of Medical Physics at Apollo Proton Cancer Centre in Chennai, Tamil Nadu. The seminar was titled “Basics of Proton Therapy and Future Challenges.”

From December 11 to 22, 2023, the School of Computer Sciences at NISER and ACM India jointly organised the “ACM India Winter School on Algorithmic Foundations of Data Science.” The primary objective of this event was to conduct a series of lectures delivered by prominent researchers in the field. The aim was to inspire and guide bright, young students towards future research in the domain of data science. These lectures covered a range of techniques, including the design of algorithms and the establishment of lower bounds for various computational problems inherent in data sciences.

From December 18 to 22, 2023, NISER organised the “HSF-India HEP Software Workshop”. The HSF-India project seeks to foster the advancement of international research software collaborations. This workshop marked the second in a series dedicated to enhancing software and data analysis skills crucial for conducting research in physics software. The topics covered during this workshop included scientific python, parallel programming and GPUs, basics of machine learning, and simulation techniques in High Energy Physics (HEP).

TALKS & SPECIAL LECTURES

As part of the DST_CPR@NISER Colloquy Talk 1, Dr. Gopal K. Sarangi from TERI School of Advanced Studies presented a talk titled “Decoding the Complexities of India's Energy Transition” on September 18, 2023

A talk titled “Stakeholder Perspectives on Just Transition in India” was presented on October 6, 2023, by Prof. Pradip Swarnakar from IIT Kanpur as part of the DST_CPR@NISER Colloquy Talk 2.

Dr. Kiran Seth, the Founder of SPIC MACAY and a recipient of the Padma Shri award, presented a talk titled “Embrace the Cycle of Health, Culture, and Eco-Stewardship in Gandhian Grace” on October 9, 2023.





Within the framework of the DST_CPR@NISER Colloquy Talk 5, Dr. John Kujur made a presentation titled **"Educational Deprivation among Scheduled Tribes in Eastern India"** on November 17, 2023.

As a component of the NISER Outreach Popular Talk series, Professor V. Chandrasekhar, an acclaimed FNA and FTWAS Distinguished Professor, as well as the Centre Director at the Tata Institute of Fundamental Research, Hyderabad, gave a lecture on November 17, 2023, titled **"From P. C. Ray to the Present: Chemistry in Action."**

Mr. Rabindra K. Panigrahy, Scientist E, Department of Science and Technology, presented a talk titled **"Current State of the Science and Technology Ecosystem in India and Way Forward"** on November 20, 2023, as part of the DST_CPR@NISER Colloquy Talk 6.

As part of the DST_CPR@NISER Colloquy Talk 7, Mr. Architesh Panda, Senior Scientist, Wyss Academy for Nature, presented a talk titled **"Transition towards Low Carbon Agriculture in Asia"** on November 24, 2023.

In the context of DST_CPR@NISER Colloquy Talk 3, Dr. Santosh Kumar Sahu from IIT Madras delivered a talk on **"Carbon Productivity in the Indian Manufacturing Sector"** on October 10, 2023.

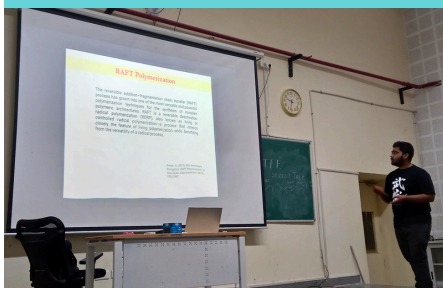
As part of the DST_CPR@NISER Colloquy Talk 4, Mr. Malaya Ranjan Sahoo from the Institute of Energy Policy and Research presented a talk titled **"Powering a Sustainable Future: Does Economic Structure Influence the Ecological Footprint?"** on November 3, 2023.

In commemoration of World Wildlife Week 2023, Dr. Ronita Mukherjee delivered a talk titled **"Diversity: Indispensable in Sustaining Ecosystem Services under Climate Change"** on November 4, 2023.

As part of the DST_CPR@NISER Colloquy Talks 8, Ms Gunjan Jhunjunwala, Programme Lead, Council on Energy, Environment & Water, New Delhi, presented a talk titled **"Just Energy Transition: A Focus on Green Economic Diversification"** on December 15, 2023.

STUDENT TALKS

TFR arranged a student talk titled **"Synthesis of RAFT Polymer using Automated Liquid Handler,"** delivered by Sagnik Bhattacharya, a 4th-year Integrated M.Sc. student, on August 31. Sagnik shared insights into his research and experiences at NIMS (National Institute for Material Science), Japan, during the summer of 2023.



A student talk and interaction session titled **"Spectroscopy: Where Light Speaks to Matter"** was conducted by Atal Swathi Patra (2nd Year Int. Ph.D.) on October 8. The event garnered attendance from newly admitted students who expressed their admiration for the application of spectroscopic methods in science.

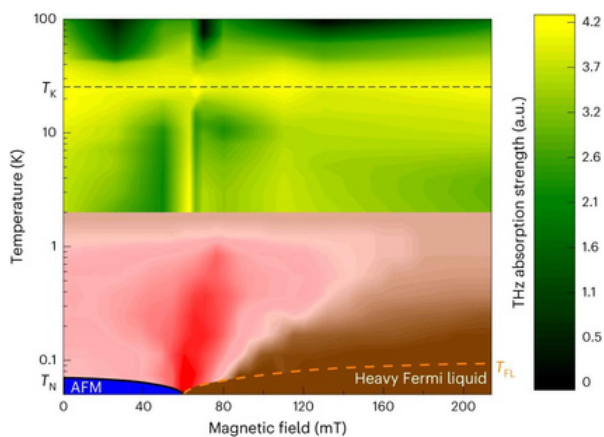


Ms. Richa Rashmi from the University of California, San Diego, delivered an alumni talk titled **"Vibrational spectroscopy at the ice-air interface using path integral molecular dynamics"** on December 20, 2023.



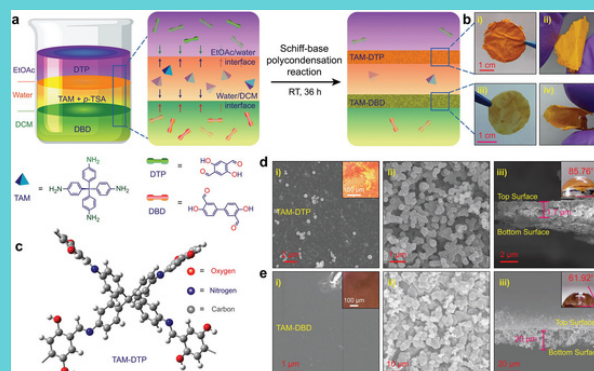
DISCOVERY & OUTREACH

UNLOCKING QUANTUM SECRETS



A multinational team of scientists, including **Dr. Shovon Pal** from School of Physical Sciences, NISER, have discovered fermionic critical slowing down in YbRh_2Si_2 during a quantum phase transition. Terahertz spectroscopy shows an increase in heavy-fermion weight and a logarithmic rise in quasiparticle excitation rate below 10K. Published in *Nature Physics*, the findings suggest a link between fermionic critical slowing down and heavy-fermion breakdown near the quantum phase transition, influencing the system's classification in the broader family of fermionic quantum phase transitions.

THE POWER OF THz RADIATION



NISER researchers, led by **Dr. Shovon Pal** and **Dr. Bishnu Prasad Biswal**, introduced the groundbreaking triple-layer-dual interfacial (TLDI) method for efficiently synthesizing two distinct crystalline 3D covalent organic framework membranes (COFMs) with remarkable properties. Published in *Advanced Materials*, the study holds promising implications for terahertz optoelectronic devices, with terahertz spectroscopy revealing potential applications in devices operating at terahertz frequencies. The research not only highlights the innovative TLDI method but also paves the way for practical advancements in THz optoelectronics, making a substantial contribution to the field.



RMTS OUTREACH PROGRAM

NISER SMS faculty members, including **Prof. Brundaban Sahu**, **Dr. Deepak Kumar Dalai**, **Dr. Jaban Meher**, **Dr. Sudhir Pujahari**, and **Dr. Tushar Kanta Naik**, actively contributed to the Rural Mathematics Talent Search (RMTS) programme, organised by Dhuriapada Anka Foundation. The programme aimed to enhance mathematical knowledge and problem-solving skills among young students from classes 7 and 8 in government schools under Subarnapur District, reflecting NISER's commitment to promoting mathematical education in rural areas.



MPVM OUTREACH PROGRAM

Invited by the Department of Science and Technology, Government of Goa, **Professor Bedangadas Mohanty** delivered an insightful outreach talk at the Manohar Parrikar Vidyan Mahotsav (MPVM), on December 14, 2023. Focused on the latest developments in the Large Hadron Collider, the talk engaged students, fostering scientific awareness and promoting science and technology in the community. Professor Mohanty's participation highlights a commitment to knowledge dissemination and scientific exploration.

AWARDS & HONOURS

Image by Rajkishore Soren, Int. MSc., via Instagram



Dr. Bishnu Prasad Biswal of the School of Chemical Sciences received the 2021 Odisha Young Scientist Award and the 2023 Prof. R. C. Tripathy Award from the Orissa Chemical Society for outstanding contributions to science and technology as an *Odia scientist working outside the state*.

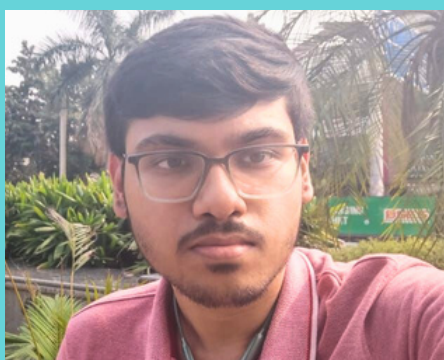


Dr. Rekha Biswal from the School of Mathematical Sciences was honoured with the 2022 Odisha Young Scientist Award for her outstanding contributions to the field of science and technology. She received this award in the category of *Odia Scientist Working outside the State of Odisha*.



Professor Hirendra Nath Ghosh, esteemed Director of NISER, has been duly elected as a Fellow of the "Indian National Academy of Engineering," a prestigious accolade acknowledging his exemplary and enduring contributions to the forefront of science and technology.

STUDENT ACHIEVEMENTS



Mr. Saptarshi Datta, Integrated MSc, School of Physical Sciences, was conferred the "**Best Poster Award**" in the experimental category at the 4th Heavy Flavour Meet hosted by IIT, Goa.



Mr. Swadhin Satapathy, a SEPS Ph.D. student, received an "**Honourable Mention**" for his poster at the "GHRSS24 International SST Users' Symposium" at Space Applications Centre, ISRO, in October 2023.



Ms. N Sneha, Integrated MSc at the School of Physical Sciences, won the **Second Prize** in the 35th DAE All India Essay Competition with her essay on "Application of Laser and Plasma Technology to Nuclear Fusion Energy."



Image by Rajkishore Soren, Int. MSc., via Instagram



Varun Manilal and Dibya Bharati Pradhan, both pursuing their Integrated MSc and engaged in their MSc thesis projects at the School of Earth and Planetary Sciences (SEPS), received recognition at the International Exoplanet Conference in Pune, held in August 2023. Their outstanding contributions were acknowledged with the 1st and 3rd **Best Poster Prizes**, respectively, highlighting the excellence of their research in the field of exoplanets.



Dr. Subhrakant Jena, Senior Project Associate from the School of Chemical Sciences, received the "**Prof. Dayanidhi Patnaik Memorial Award**" by the Odisha Chemical Society (OCS) in the best research paper category.

OTHER EVENTS

Independence Day Celebration

NISER commemorated the 77th Independence Day with a series of vibrant and meaningful activities. The day commenced with a dignified flag hoisting ceremony, symbolizing the institute's respect for the nation's heritage and freedom. Following this, a lively cultural program unfolded, showcasing the diverse talents of NISER students and fostering a sense of unity and celebration.

In alignment with the institute's commitment to environmental responsibility, the NISER community actively participated in a collective tree-planting initiative. This endeavor not only contributed to the greenery of the campus but also emphasized the importance of sustainability and ecological consciousness. The festivities reflected the institute's commitment to sustainability, marking a holistic and memorable Independence Day observance.



Foundation Day

Adhering to NISER's tradition of commemorating its Foundation Day with talks from notable scientists, a lecture took place in the Pathani Samanta Auditorium on September 6, 2023. Prof. P Sreekumar, a renowned astrophysicist and planetary scientist currently serving as the Director of the Manipal Centre for Natural Sciences, delivered a talk on "Technology as an Enabler in Scientific Pursuits of Space." The day concluded with the recognition of outstanding academic achievers and engaging cultural performances.



Rajbhasa Hindi Diwas Celebration

To highlight the significance of Hindi, various programmes and competitions were conducted at the institute during the Official Language Hindi Fortnight from September 14 to September 29, 2023. The institute witnessed active participation from students, staff, and faculty members in all the events. Additionally, a Hindi Book Exhibition was curated by the Central Library on the occasion of Hindi Diwas, providing an opportunity for all Hindi readers to explore and benefit from the collection.

Observance of Sadbhavana Diwas

In honour of the birth anniversary of late Prime Minister Shri Rajiv Gandhi, the NISER community solemnly observed Sadbhavana Diwas on August 18. The community took the Sadbhavana Diwas Pledge which, was administered by the director at the Pathani Samanta Auditorium.

Installation of Plaque for HBCHRC

On July 17, 2023, a significant milestone was achieved with the inauguration of the Homi Bhabha Cancer Hospital and Research Centre (HBCHRC) plaque at its site. The ceremony was attended by Dr. Ajit K. Mohanty, Secretary of the Department of Atomic Energy (DAE) and Chairman of the Atomic Energy Commission (AEC). The installation of the plaque, officiated by the Secretary of DAE and Chairman of AEC, symbolizes a significant step forward in the actualisation of the Homi Bhabha Cancer Hospital and Research Centre, which would enhance healthcare services and advance scientific research in the field of oncology.



Vigilance Awareness Week

The Vigilance Awareness Week was observed from October 30 to November 5, 2023. The observance was initiated with a pledge-taking ceremony on October 31. Our director led the administration of the pledge during this event, which was attended by the staff and faculty members, highlighting our dedication to maintaining integrity and combating corruption.

Observance of Rashtriya Ekta Diwas

In honour of the birth anniversary of Shri Sardar Vallabhbhai Patel, widely recognised as the 'Iron Man of India,' the NISER community passionately observed National Unity Day on October 31, participating in the Rashtriya Ekta Diwas Pledge.



STUDENT ACTIVITIES

Astronomy Club

The NISER Astronomy Club (NAC) organised weekly talks and telescope observation sessions, involving notable speakers such as Dr. Manjari Bagchi. The Experiments Team achieved several milestones, including determining Jupiter's moons' orbital period, capturing a high-resolution image of the Super Moon, and constructing a low-cost spectrometer. An Astrophotography workshop on September 10 engaged students in capturing celestial wonders.

NAC live-streamed Chandrayaan 3's landing and the launch of Aditya-L1 satellite after a seminar by Dr. Guneshwar Thangjam. It also hosted a virtual alumni panel discussion and organised events like The Astrophotography Challenge and Make Your Own Nebula during Umang '23.

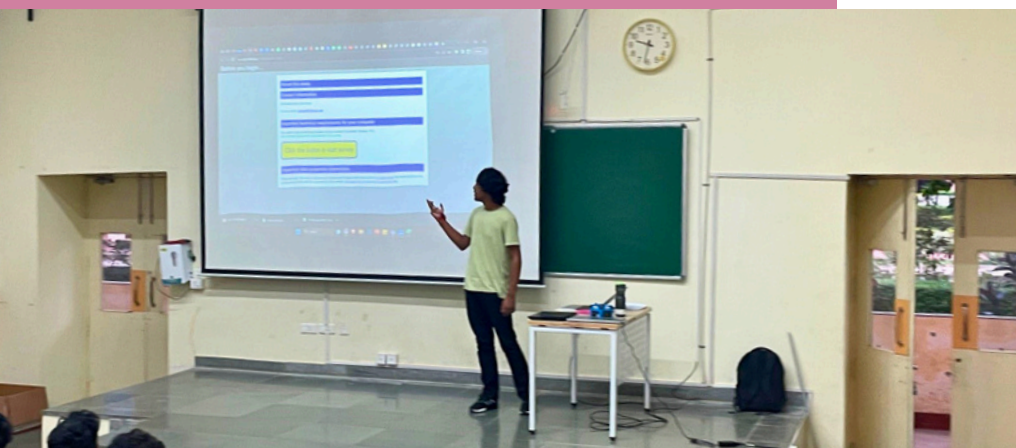
A Club Induction Quiz for Batch '23 students took place on November 3 and training sessions for new members featuring 6-inch telescopes were conducted throughout December.



Brain Matters Club

Brain Matters Club organised an Internship Talk Series from August to September 2023, where students who completed their summer internships in various neuroscience-related fields shared their work and experiences. The speakers included Saina Rath, Divit Solanki, Gayathri B Menon, Samir Dileep, Asmit Moharana, Anirudh Gupta, Sambeet Jena, Ardhra Sajeev, and Kunal Kumar Bharat.

Brain Matters, in collaboration with MathematiX Club, NISER Astronomy Club, and The Free Radicals, organised a successful online PhD panel discussion. NISER alumni pursuing Ph.D. programs abroad shared valuable insights on application procedures and preparation, attracting over 100 participants.



Umang 4.0

UMANG 4.0, NISER's 4th Intra-College Cultural Fest, held on October 28 and 29, showcased 26 cultural and scientific events, including a yoga session, reflecting the institute's vibrant and diverse community. Co-curricular activities like Tune Therapy, Wild Funk, Film Quiz, and more provided platforms for students to display talents in various fields. The fest concluded with an energetic DJ night, enabling a joyful communal celebration and a break from academic pressures.



Coding Club

The Software Development Group (SDG) at NISER operates within the coding club, comprising enthusiasts who prioritize a code-first strategy for problem-solving. As coding club members, they engage in various activities, from arranging talks to hosting coding competitions. Within the SDG, the focus is on creating diverse projects tailored to enhance the convenience and enjoyment of life at NISER. Their shared belief as a community is in using coding to address and overcome challenges.



Dance Club

On October 15, the dance club, in collaboration with our alumni and garba expert Nisarg Vyas, conducted an energetic garba workshop. Students wholeheartedly participated, immersing themselves in the vibrant culture and delighting in the joy of dancing to Rajasthani beats.

On October 28, the dance club collaborated with renowned dancer Ms. Jyoti Das for a lively Bollywood workshop, bringing joy to students as they danced to their favorite beats. Simultaneously, Nrityotsav, a UMANG component, featured a dance competition with solo and group performances judged by Ms. Jyoti Das, encouraging students to showcase their dancing talents.

The NISER Dance Club continues to excel, achieving second place in the Group Dance competition during the esteemed Inter IISER NISER Cultural Meet (IICM) held at IISER Mohali on December 19.



Drama and Music Club

On October 9, 2023, DMC organised the SPICMACAY Odisha chapter, featuring Dr. Kiran Seth, the founder of SPICMACAY, at NISER. Dr. Seth's motivational and optimistic insights significantly enhanced students' enthusiasm for Indian classical music.

DMC organized auditions and trial rounds for the IICM (Inter IISER Cultural Meet) in music and drama events in November. Esteemed professors served as judges, and numerous participants showcased their best performances to secure spots on the contingent.

Jamming sessions serve as a great avenue for connecting with people from various years and departments. Whether it's Diwali, Christmas, New Year, or Roshni (UMANG), DMC consistently supports and organises these sessions in the SAC area.

Literature Club

For Umang 2023, the Literature Club urged participants to draw inspiration from visual masterpieces under the theme "Muse". The open mic session, "Echoes", during Umang 2023 focused on the theme of nostalgia. This event showcased the Literature Club's adept curation and facilitation skills, highlighting their dedication to fostering a vibrant cultural environment where written and spoken expression harmoniously converged.



MathematiX Club

SUMS (Short Undergraduate Mathematics Seminars) host weekly talks by first-, second-, and third-year undergraduate students on diverse mathematical topics, including games like chess and Rubik's cube, . SRS (Student Research Seminar) meets weekly, presents mathematically rigorous content with advanced results and proofs, and shares insights from summer internships or personal investigations.

The MathematiX Club's First Year Support Centre aids first-year students in understanding abstract mathematics through coaching and mentorship. Math Circles provides unique and challenging problems, promoting critical thinking skills in math enthusiasts.



Oorna Club

Oorna and Sapsara introduced "EcoFrames," a recurring event focused on observing and capturing the natural world through photography—a collaborative effort aimed to enhance our understanding of organisms.

Dr. Sandeep Pulla, an ecologist specializing in tropical forests and savannas, delivered a talk on October 20, 2023, on "Neighbourly Nudges: How a Savanna Plant's Neighbours Shape its Growth."

In the vibrant intra-college fest, Umang 4.0 at NISER, Oorna coordinated a Leaf Art Competition, offering a distinctive opportunity for everyone to engage with nature and display their artistic talents.

In observance of World Wildlife Week, a documentary screening in collaboration with the NISER Film Club was organised. Dr. Ronita delivered a talk on the self-sustainability of ecosystems, and Mr. Ayush Parag (Int. MSc) spoke on the biology of spiders. The week-long wildlife celebrations concluded with a trek to Barunei.



Quizone

In August, Quizone organised a Sports Quiz to mark the occasion of National Sports Day. Additionally, an induction quiz was conducted for the new Integrated MSc batch, covering a wide range of topics, from entertainment to history. The event witnessed ardent participation from students and quiz enthusiasts.

In October, as a part of Umang, the club organized a general quiz and a film quiz, both attracting significant participation. In November, a selection round for IICM was held, resulting in the selection of two teams to represent NISER.

The Film Club

The year began with the screening of the Japanese Western film "Tampopo," and it concluded with the screening of the influential horror classic "The Shining."

In observance of important awareness weeks such as the anti-ragging and wildlife weeks, the club conducted special screenings featuring acclaimed films and documentaries such as "A Silent Voice," "A Dream of Trees," and "Maali".

In collaboration with LitC, the Film Club organized the "Script Chisel" competition, offering the winning script a chance at production. In partnership with the Quiz Club, a film quiz on diverse genres was conducted and a short film competition was coordinated as part of UMANG.





The RoboTech Club

The RoboTech Club, in collaboration with the NISER Astronomy Club, provided a detailed insight into Chandrayaan 3's lander and rover components during a live stream of the landing event. The session covered the previous mission, showcased 3D renders, and explained the system payloads, including sensors' functions and mechanical operations.

In an annual tradition, the club showcased its projects to welcome new NISER members, featuring demonstrations on drone maneuvering, 3D modeling, and competitive bot designs. The event began with an introductory talk on the "concept of robotics and what differentiates a robot from any gadget" and provided training sessions for newcomers, covering development board programming and electronics with mini projects like 'logic gates' and 'IR-based light switching.'

Zaariya

Zaariya organised a fundraising campaign to support a bereaved family that had recently lost its primary breadwinner. The initiative successfully gathered an impressive sum to assist the family in meeting their essential financial requirements.

As is the tradition each year, Zaariya organised a food festival during Diwali, featuring student-operated food stalls that offered delectable dishes to all members of NISER. This event, serving as a means of fundraising for the club, added an extra layer of memorability to the festival of lights.



The Free Radicals

As part of UMANG, NISER's intra-college event, TFR hosted "The Reaction Tier List," infusing the event with chemistry and creating an atmosphere of enjoyment and laughter.

TFR initiated tutorials, fostering constructive discussions for the students' benefit and addressing any coursework-related difficulties by clearing doubts.

Yoga Club

NISER celebrated International Yoga Day on June 21 under the leadership of the Yoga Club, providing participants with an opportunity to engage in yoga activities and experience associated health and wellness benefits.



During Umang Cultural Fest 2023, the club organized a yoga session featuring a unique technique called Deep Relaxation Technique (DRT) and meditation with sun rays falling on the eyelids.



Alumni Connect

Dr. Muna Naik, an alumna of NISER (Int. MSc./2013/School of Mathematical Sciences), has assumed the position of Assistant Professor in the Department of Mathematics at the Indian Institute of Science, Bengaluru.

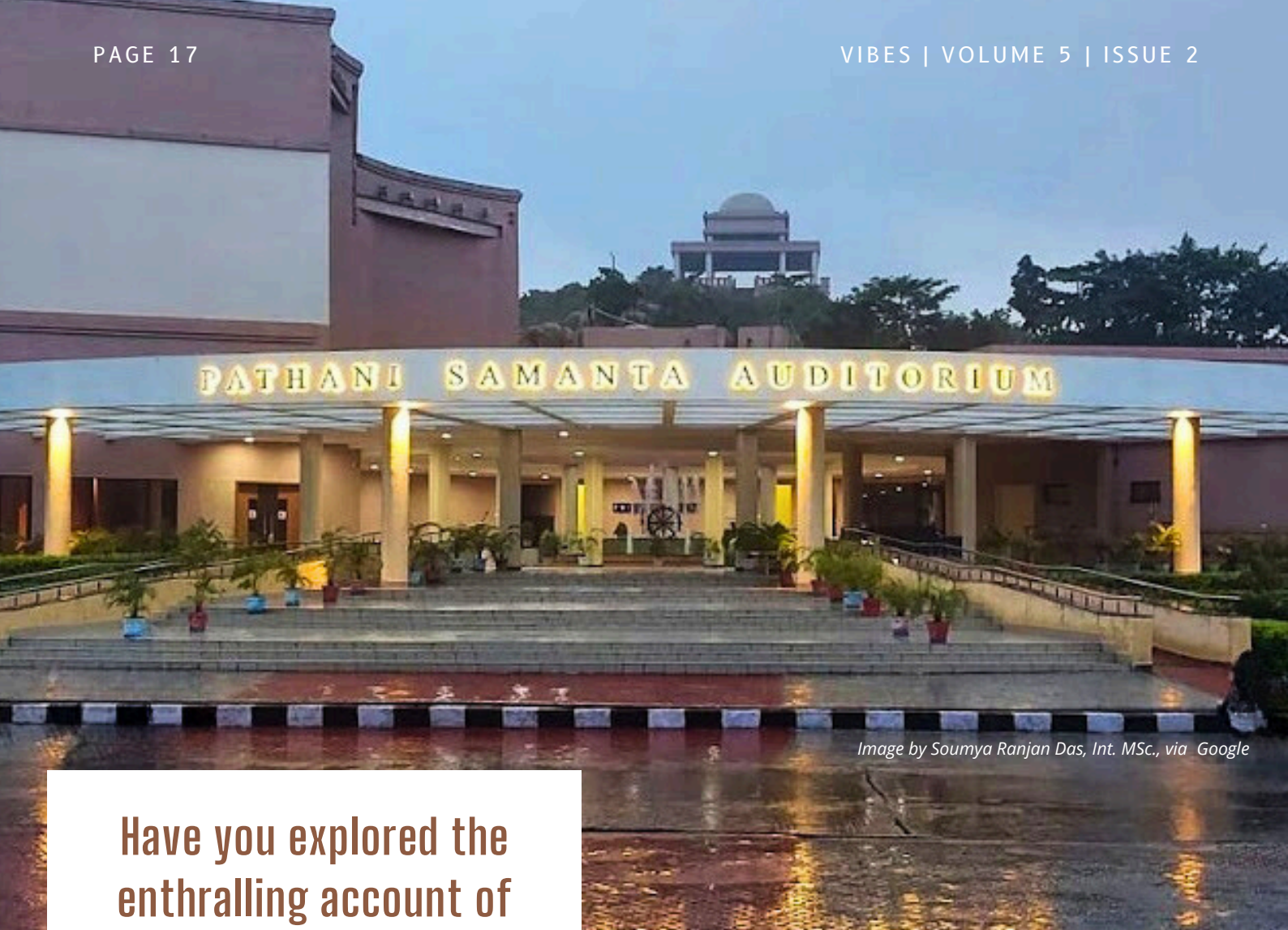


Image by Soumya Ranjan Das, Int. MSc., via Google

Have you explored the enthralling account of how the NISER auditorium was bestowed its name?



Pathani Samanta, better known as Mahamahopadhyaya Chandrasekhara Singha Harichandana Mahapatra Samanta, was an Indian astronomer, mathematician, and scholar who measured the distance from the Earth to the Sun with a bamboo pipe and traditional instruments.

His research and observations were compiled into a book called *Siddhanta Darpana*, which was written in both Sanskrit and the Odia script. He earned the *Mahamahopadhyaya* Award in 1893 for his usage of traditional instruments for astronomical observations. Samanta's calculations were eventually used in the preparation of almanacs in Odisha.

The naming of NISER's auditorium after Pathani Samanta was initiated by **Professor Bedangadas Mohanty**. The proposal was put forth, and the institute's Board of Governors (BOG) and the Department of Atomic Energy (DAE) agreed to it. As a result of this consensus, the auditorium at NISER was officially named after Pathani Samanta, acknowledging and commemorating the contributions of the esteemed scientist.

NEWSLETTER

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