



भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
Indian Institute of Technology Guwahati
www.iitg.ac.in



ज्ञानवर्षा

The Monthly Newsletter of IIT Guwahati

Volume IV, Issue IV, April 2022



IIT Guwahati laboratories resumed working with their full strength

IIT Guwahati resumes physical classes and research work with full capacity

Indian Institute of Technology Guwahati has revoked the restriction imposed due to the pandemic and resumed physical classes for students. The institute decided to call back all the students to the campus by 21st March 2022 in a phased manner. Presently the student and research scholar strength on campus is close to 7000. There are no COVID cases on campus, yet all necessary precautions prescribed by the government are in place to be followed.

After the opening of the institute in the phased manner, physical classes, laboratories, and extracurricular activities have been completely resumed and have been running at full capacity. The research activities are at pace and laboratories are working to their full strength.

Expressing his satisfaction over the resumption of the institute's activities at their regular pace, Prof. T. G. Sitharam, Director, IIT Guwahati said, "I welcome this return to the hustle and bustle of students on our campus after 2 years of online learning. It is so refreshing to have the students back on campus and we are geared up to come back to the classroom with high-quality teaching and learning experience."

Along with academic activities, cultural and sports activities have also resumed in full swing on the campus.

- > The 26th edition of Alcheringa, the annual cultural fest of IIT Guwahati, was organized from 11th to 13th March 2022 with large-scale participation of Professors, students, and non-teaching staff. Eminent artists from different parts of the countries performed in the four days ceremony.
- > The 28th CRSI National Symposium in Chemistry was conducted from 25th March 2022 under the auspices of the Chemical Research Society of India at the campus. The National symposium had medal lectures, poster presentations, and special lectures by eminent scientists working in chemical and allied sciences from India and abroad. The symposium brought together approximately 400 eminent scientists, technologists, and young researchers to provide a common platform for discussing their achievements and newer directions of research in the field of chemical and allied sciences.



- > Spardha, the Inter Hostel Sports Competition has also been restarted. Spardha 2022 was inaugurated by the Director Prof. T. G. Sitharam on 25th March 2022 in a colourful opening ceremony with sporting spirit and enthusiasm amongst students. Students have been participating in various sports events. The event conclude on April 17, 2022.
- > 100 days Yoga festival was inaugurated by the director Prof. T. G. Sitharam on March 28, 2022, which will be concluded on June 21, 2022.
- > Pariksha pe charcha 2022 was organized at the institute as well as at Kendriya Vidyalaya IIT Guwahati which saw huge participation of students, faculty, teachers, and administrative staff getting involved in the live interaction.

Speaking about returning to campus, a group of second-year students who have come to the campus for the first time since being admitted to IIT Guwahati, said "It is exciting for us to be on the campus! We were missing all the physical lessons and meeting our classmates/batchmates during the last 2 years. We are charged up to learn in this campus environment."

Faculty members also were hugely enthusiastic to welcome all the students to the campus and resume teaching in the classroom and the close interaction in the laboratories. Overall the academic environment is very lively compared to what we have seen in the past two years.

The opening of the campus was done in a phased manner as shown in the table shared below:

Phase no.	Programme/Batch	Return Schedule
Phase I	All Ph.D./Dual Degree students, including those undergoing course work	Between 19th February and 10th March 2022
	BTech/BDes Final year (2018 batch) & Earlier batches	
Phase II	MA/MSc/MTech/MDes/MS(R) Final year (2020 batch) & Earlier batches	Between 23rd February and 10th March 2022
Phase III	MA/MSc/MTech/MDes/MS(R) 1st year (2021 batch)	Between 28th February and 10th March 2022
Phase IV	BTech/BDes 3rd year and 2nd year (2019 batch and 2020 batch)	Between 14th March and 20th March 2022
	BTech/BDes 1st year (2021 batch)	

IIT Guwahati to organise the First Edition of North-Eastern Research Conclave on 20-22 May 2022

Indian Institute of Technology Guwahati will host the First Edition of North-Eastern Research Conclave (NERC-2022) to boost collaboration between Industry and Academic in the Region.

It will be conducted between 20 and 22 May 2022 jointly with the Science, Technology and Climate Change Department and the Department of Education, Government of Assam at the IIT Guwahati campus.

The Conclave is expected to host around 3,000 eminent personalities from the eight North-East States and other parts of India. They will hail from various sectors such as Industry, Academia, Start-Ups, Research Councils, PSUs, laboratories and Technical Institutes including Schools and colleges of north eastern region.

Shri Dharmendra Pradhan, Hon'ble Education Minister, Government of India, is expected to preside over the event along with Shri Himanta Biswa Sarma, Hon'ble Chief Minister of Assam, Shri G. Kishan Reddy, Hon'ble Minister of Development of North East Region Government of India and other dignitaries.

Highlighting the significance of the conclave Prof. T.G. Sitharam, Director, IIT Guwahati, said, "In a bid to boost scientific research and innovation ecosystem in Northeast region, North East Research Conclave 2022 (NERC-2022) is being organized at Indian Institute of Technology, Guwahati (IIT-G). We welcome scientists, researchers, policy makers, administrators and Governments to participate to increase the research activities in the north east which has great potential in terms of resources and people. Focus of this conclave is primarily to strengthen R&D handholding among all the stakeholders of Northeast India and to benefit the local people of the region through research, innovation and startup"

The Mission of NERC-2022 include:

- To create a common interface for collaboration and showcase the best R&D activities through exhibition from all the educational/research institutions, industries and various agencies across the states of North-East India,
- To create an environment conducive to the development of local indigenous technologies and

creating the scope and laying the foundation for the promotion of Translational Research and entrepreneurship, and

- To help the country achieve the goals of SDGs.

NERC 2022 offers the best platform for academia and industry to showcase their expertise, products and technology innovations on mission mode. Thus, the conclave is expected to benefit all in terms of setting up long-term collaboration for research and development innovations towards the goal of establishing R&D innovation-based sustainable NE India. The activities during the three-day conclave will include R & D Exhibitions, Brainstorming sessions, entrepreneur summit, sanitizing school children's towards taking Research as carrier option and Lectures from Scientists /Industry experts/ Policymakers. More details can be seen from www.iitg.ac.in/rnd/nerc.

The third edition of Assam Biotech Conclave 2022 will also be a part of NERC 2022. It will bring together the Biotech Entrepreneurs, industry leaders, researchers, academicians, Government Representatives, policy makers, innovators and investors together on one platform to explore the possibilities of Biotechnology in North East India and to discuss the new opportunities in the transition.

The Conclave also intends to put forward the facilities offered by Guwahati Biotech Park wherein prospective Biotech ventures may avail incentives/subsidies through the provisions laid under the Biotechnology Policy for the State of Assam.

The three days conclave involves major activities like (1) Research and Innovation exhibition by North East Researchers (2) Industry Start-up show-case related to North East (3) Interactive session between Industry and Researchers (4) Eminent talks by Policy makers, Industrialists and Academicians.

Prof. Vimal Katiyar, Convener, NERC-2022 is inviting all the stakeholder to take part to shape the R&D ecosystem of the northeast and make the event a grand success.

IIT Guwahati takes initiatives to spread the message of Pariksha Pe Charcha 2022

Indian Institute of Technology Guwahati's students, faculties and non-faculty together with Prof. T. G. Sitharam, the director of the institute have participated in 'Pariksha Pe Charcha 2022' in physical mode.



Prof. T. G. Sitharam, Director IIT Guwahati along with faculties and students participating in Pariksha Pe Charcha

IIT Guwahati arranged a live telecast of the event in four locations at (1) Board Room, IIT Guwahati (2) Conference Room, Centre for Education Technology (3) Video Wall in the lobby of the Administrative Building & (4) KV IIT Guwahati auditorium.

There have been very large scale participation of students, faculties and non-faculty staff in both physical and virtual modes.

Appreciating the initiative, Prof. T. G. Sitharam, Director IIT Guwahati says, "The initiative taken by the Hon'ble Prime Minister Shri Narendra Modi Ji to interact with the students before the Board examination indeed is a very positive step towards building self-confidence to every student and to face the challenges easily. The way the Hon'ble Prime Minister describes the activities of the students in a different practical perspective is very interesting and will definitely create an impact on the future life of the students and encourage them to face any life challenges, provide self-motivation, self-esteem, dedication & to think out of the box to solve their problems in their future life."

IIT Guwahati administration also took initiatives for popularizing the event among the students, faculties and staff community by sending emails and also through social media (Facebook and Twitter, LinkedIn, Instagram) posts. Communications were sent to all across the institute through the office of the Director, Dean, Public Relations, Branding and Ranking, Centre for Education Technology, Student Affairs. In the Board room of IIT Guwahati, the live streaming of the event was held for around 100 students along

with faculty and non-faculty on April 1st, 2022. Kendriya Vidyalaya IIT Guwahati also live-streamed the event which was attended by more than 1000 students, teachers and parents.

The student community was highly motivated after the event and expressed their appreciation to the Hon'ble PM for providing his valuable guidance to manage stress during exams.

IIT Guwahati develops Technology to Standardise Electric Vehicles for Indian Conditions

Indian Institute of Technology Guwahati has developed a technology that rates the motors and batteries of electric vehicles and suggests to Original Equipment Manufacturers (OEM) the best drivetrain components for the Indian scenario. This is a unique method of its kind which standardises the electronic vehicles based on Indian drive-cycles.

So far researchers have not been considering Indian drive-cycles. The drive cycles developed are not focused on rural and urban drive-cycles. The Electric Vehicles currently available in the market also do not take into account the different climatic conditions in India.

Currently, no OEM uses this technology and they have been requesting the drive-cycle data of Indian vehicles. This research hopes to create better and more efficient drivetrains based on different regions. This is also beneficial for start-ups. This research aims to reduce emissions and reduce fuel consumption.

The researchers of the Electric Mobility Laboratory of IIT Guwahati led by Dr. Praveen Kumar, Professor, Department of Electronics and Electrical Engineering, IIT Guwahati, focused on Indian climatic conditions for both rural and urban areas. They developed the method to suggest the best drivetrain to manufacture. Drive-cycles developed by the IIT Guwahati team, are unique and not available anywhere else.

An electronic drivetrain (group of components that deliver power to the drive wheels) developed in a humid region does not work the same in a dry NS colder environment. Therefore, the OEMs right now are considering creating standard drive-cycles for Indian conditions.

Commending the researchers for their work, Prof. T. G. Sitharam, Director, IIT Guwahati, said,

“The development in the field of next-generation energy-efficient EV technology is one of the most important breakthroughs required for the sustainable development of the country and to reduce carbon footprint. IIT Guwahati is earnestly working in this direction. This development will augment this process and maximize the outcomes.”

Explaining the long-term positive impact of this development, Dr. Praveen Kumar says, “Our goal is to prepare a document that can enable the new entrants into the EV market and help in levelling the playing field. The other primary benefit of this entire exercise is to prepare the next generation of technocrats that are ready for an excellent career in EV technology anywhere in the world.”

This research has been published and it has an ISBN 978-93-5578-973-0. The institute intends to extend the research to commercial vehicles working with OEMs so that they can manufacture more efficient drive trains that suit the different climates of India better. The researchers are also working to develop this technology for four-wheelers also as the current project focuses exclusively on two-wheelers.



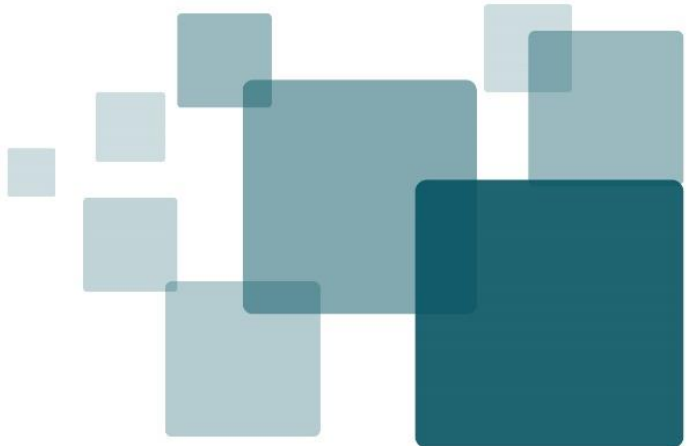
Prof. Praveen Kumar, Professor, Department of Electronics and Electrical Engineering, IIT Guwahati





An exhibition on the "Indian Knowledge System" was inaugurated by the Hon'ble Director, IIT Guwahati Prof. T. G. Sitharam on April 8, 2022. The event was organized by the Centre for Indian Knowledge Systems, IIT Guwahati.

On the occasion an invited lecture was delivered by Shri Indranil Sanyal, Director, National Council of Science Museums (North-East Zone), Kolkata.



Awards and honours



Prof. Nachiketa Tripathi, Department of Humanities and Social Sciences and School of Business, IIT Guwahati has been appointed as Associate Editor of Employee Responsibilities and Rights Journal, published by Springer, US.



"HCI Professional Association of India", has invited Dr. Abhishek Shrivastava, Assistant Professor, Department of Design, to Chair their steering committee for a period of three years starting March 2022.

HCIPAI is an organization of national and international repute. Its aim is to promote the development of researchers, students and professionals in the discipline of Human-Computer Interaction. Several of notable members of both academia and industry are its lifetime members. The HCIPAI is also responsible for spear-heading the annual series of widely popular IndiaHCI conferences. The conference upholds highest standards of peer-reviewed publications in the domain with all proceedings archived in ACM Digital Library. In 2020, IITG co-hosted this conference (virtual mode only) as well.

IIT Guwahati & NTPC Develop Energy Efficient Technology for CO₂ capture from Power Plants

Indian Institute of Technology Guwahati has partnered with NTPC Limited to design and develop a highly energy-efficient plant for CO₂ capture from power plants

This technology, which works on flue gas using a newly activated amine solvent (IITGS), consumes up to 11 percent less energy compared to commercial activated MDEA (Monoethanolamine) solvent and up to 31 percent less energy compared to benchmark MEA (Monoethanolamine) solvent.

This indigenous technology was developed by a research team led by Prof. Bishnupada Mandal, Department of Chemical Engineering, IIT Guwahati. It has the potential to save a lot of foreign exchange for the nation.

The outcomes of this project will benefit oil, natural gas, biogas industries, and petroleum refineries. This project, through its research and education, will support and strengthen the UNs Sustainable Development Goals (SDGs) as well.

After successful completion of test studies, the pilot plant has been shifted to NTPC's NETRA facility. IIT Guwahati Team and NTPC Limited are in the process of patenting the technology. This development has the potential impact to combat global climate change. The next phase of the study will involve the testing of pilot-plant using industrial flue gas.

Elaborating on the practical applications and benefits of Technology, Prof. Bishnupada Mandal, Department of Chemical Engineering, IIT Guwahati, said, "The increase in anthropogenic CO₂ emissions is one of the reasons attributed to global warming. Extensive research efforts are being made by the scientific community to overcome this global challenge that includes modifications to existing technologies through efficiency improvement for CO₂ capture."

The MEA and other proprietary solvent-based technologies are available for CO₂ capture in the chemical industry. This technology is utilized in coal and gas-fired power plants mainly to produce food-grade CO₂ in small quantities (compared to CO₂ capture in power plants). However, the process is energy-intensive, if adopted for large-scale CO₂ capture in power plants. IIT Guwahati has developed an energy-efficient amine-based process for CO₂ capture from flue gas.

The growth in the electricity sector is a prerequisite to achieving India's ambitious policy goal of 'Electricity for All' and maintaining significant growth in its Gross Domestic Product (GDP). At the same time, India supports global efforts toward the research and development of technologies aimed at reducing CO₂ emissions. This technology will help achieve both of these goals simultaneously.

IIT Guwahati signs MoU with Indian Register of Shipping for multifarious collaboration

Indian Institute of Technology Guwahati has signed a memorandum of understanding (MoU) with Indian Register of Shipping (IRS) to collaborate on training, design, and manufacturing with a core emphasis on Underwater Technologies.

IIT Guwahati Technology Innovation and Development Foundation (IITG TIDF) and IRS will jointly run training and certification programs and workshops. The goal of these programs will be to develop qualified human resources and research personnel with industry-aligned competencies in technologies of Underwater design and manufacturing.

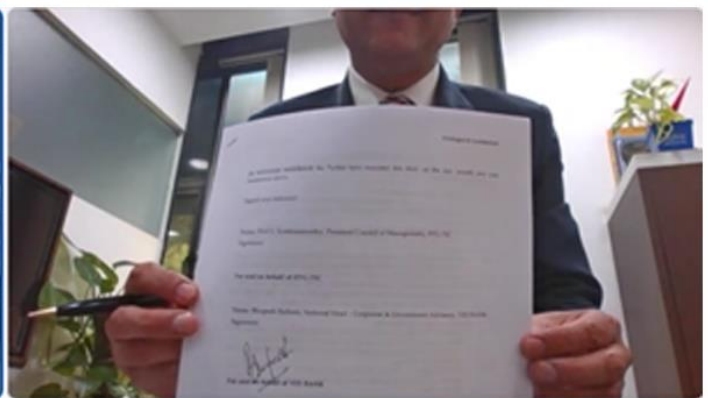
Prof. T. G. Sitharam, Director of IIT Guwahati and Chairperson, BoD of IITG TIDF, said, "In addition to developing technology, we are working on skill development. It is our pleasure to work with IRS on training, design, and manufacturing."

Prof. G. Krishnamoorthy, Dean II&SI IIT Guwahati, Vice-Chairperson, BoD of IITG TIDF, added, "IRS is synonymous with industry excellence when it comes to safety, security and environmental protection. The collaboration between IIT Guwahati and IRS on the training and certification programs will help develop technologies for Underwater Exploration."

Dr. Asokendu Samanta, Vice President and Divisional Head of Research & Development Division at IRS, said, "This collaborative effort allows us to expand our training and certification programs as we look to build key skills in a rapidly developing area of the industry. The IITG TIDF and we look forward to working closely with each other".

'IITG TIDF,' a section 8 company established in 2020, has a strategic commitment towards excellence. The organizations aim to create new opportunities for industry and academia by conducting cutting-edge research to develop technology and professional skills. The Technology Innovation Hub (TIH) on Underwater Exploration, by the National Mission of Cyber-Physical Systems, is a key project for the company.





Two MoU were signed between IIT Guwahati and YES BANK to collaborate with Electric Mobility Lab and Technology Incubation Centre for strengthening innovation and support the growth of startups in sectors such as Electric Mobility, Urban Infra. The partnership will catalyze product development and technology innovations by leveraging the capabilities of YES BANK and IIT Guwahati.





Hon'ble Minister of Industries & Commerce, Transport & Skill Dev, GoA. Shri Chandra Mohan Patowary, Vice Chancellor of North-Eastern Hill University, Prof. Prabha Shankar Shukla, Director, IIT Guwahati, Prof. T. G. Sitharam attended the inauguration session of the Innovation and Entrepreneurship Conclave at IIT Guwahati.

They also interacted with the participants in the exhibition of the Innovation and Entrepreneurship Conclave.



List of students selected for PMRF, December 2021



Syam Sankar
Computer Science &
Engineering



Dhrutiman Dey
Mechanical
Engineering



Barsha Amarendra
Design



Vishal Dhar
Chemical Engineering



Sahil Gaurav
Electronics & Electri-
cal Engineering



Sima Nayak
Mechanical
Engineering



Sandra Jose
Bioscience &
Bioengineering



**Pramod Madhukar
Gawal**
Chemical Engineering



Sai Krishna Mulpuri
Electronics & Electri-
cal Engineering



Nayanita Kalita
Mechanical
Engineering



Arisha Arora
Bioscience &
Bioengineering



George Varghese P J
Chemical Engineering



Nabajyoti Nath
Electronics & Electri-
cal Engineering



**Jayawant Sudhakar
Ghadage**
Civil Engineering



Sandhya S
Bioscience &
Bioengineering



**Dharanikota Naga
Phani Sai**
Chemical Engineering



Nayan Das
Physics



Sanju Nandi
Physics



Pallavi Barman
Chemistry



Priyanka Pradhan
Chemistry



Kshitiz Verma
Chemistry



Shivasish Das
Chemistry



Sharajit Saha
Chemistry



Rubi Moral
Chemistry



Nandini Ray
Chemistry



Ramji Meher
Chemistry



Dodda Srinivas
CICPS



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