

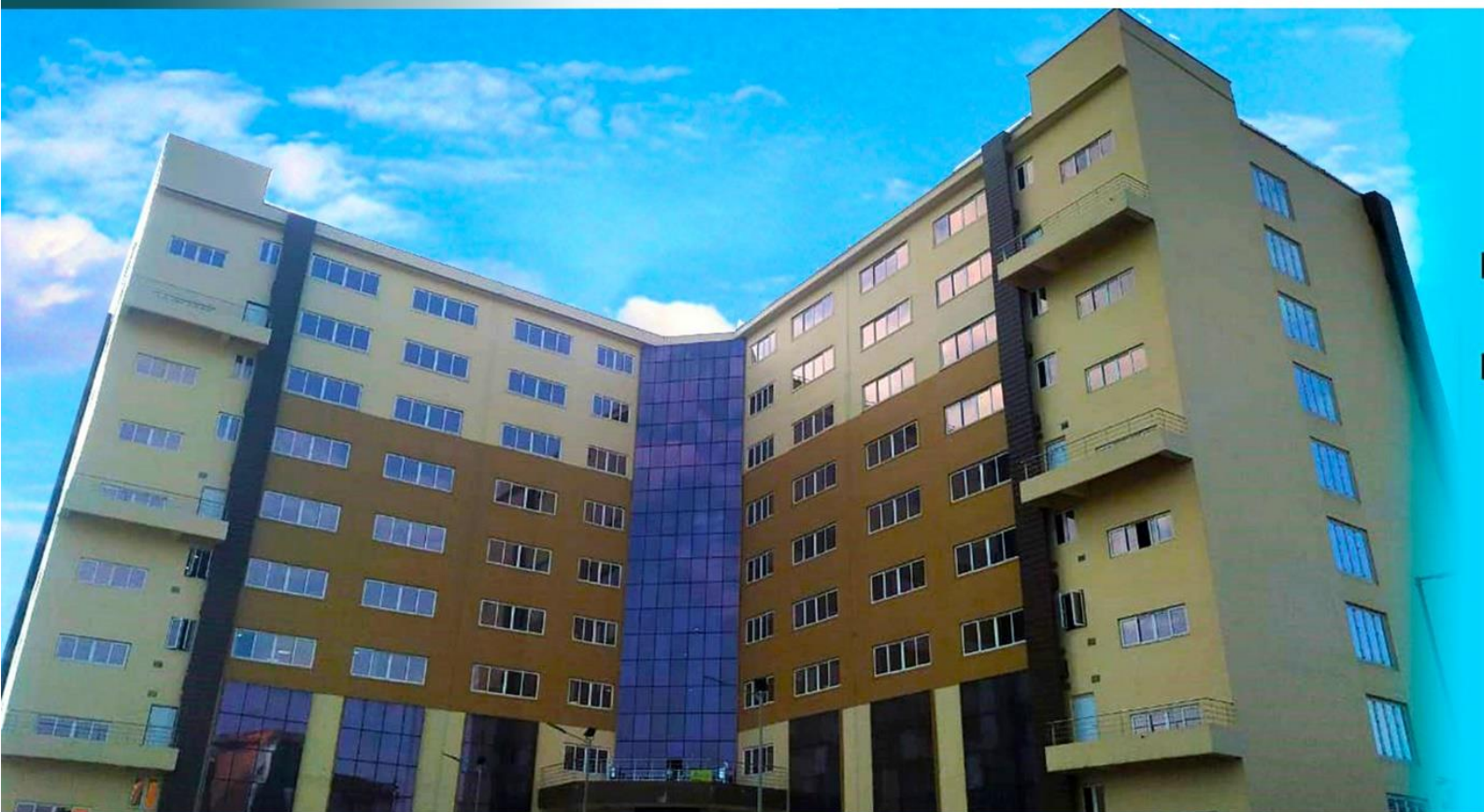


भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
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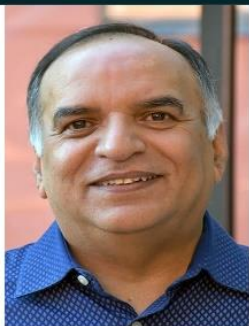
R&D NEWSLETTER

The Quarterly Newsletter of R&D Section

Volume VII, December, 2023



Message from the Officiating Director, IIT Guwahati



Prof. Rajeev Ahuja
Officiating Director
IIT Guwahati

Having been founded in 1994, IIT Guwahati is the sixth member of the IIT community and has celebrated 29 magnificent years of existence. IIT Guwahati is extremely proud of its achievement of being the first Indian university to be listed in the top 100 worldwide universities for students under 50, as reported by the Times Higher Education (THE) in London in 2014. According to NIRF 2023, it is placed 7th in the engineering area.

The mission of IITG is to become the go-to place for the best scientific, engineering, and technology education and to be globally renowned for its outstanding research, commitment to student growth, and

future roadmap for the welfare of our students. The constant renewal of concepts and the development of fresh fields for scientific education and innovation are crucial components for achieving academic excellence and R&D goals for the betterment of the society. One of the Institute's biggest focus is to be with the growing number of new research paradigms and innovations for the modern era. IIT Guwahati is attempting to increase research efforts in all fields of science and technology, with a focus on data sciences, bioengineering, and nanoscience and technology. The aspiration of IIT Guwahati to excel in research is demonstrated by the initiation of research in some of the cutting edge areas of the biological sciences, including Developmental Biology, Molecular Biology, Computational Biology, Biophotonics, Genomics, Health Care and Bioinformatics, Flexible Electronics, Advanced Functional Materials, Computational Acoustics, Rotor Dynamics, Additive Manufacturing, Image Processing, Laser Welding, Instrumentation,

Composites, Sustainable Polymers, Water Resources & Hydraulics, Geotechnical Engineering, Structural Optimization and Management. The fields of environmental science and data science are multidisciplinary by nature and are growing quickly.

The publication of the quarterly R&D newsletter of IIT Guwahati makes us extremely delighted. I commend all of the faculty members for using this endeavor to inform all stakeholders about IITG's research activities. I hope that the IITG's research findings be widely shared among academic institutions, research centers, and businesses in India and elsewhere. Many research and development organizations are asked to collaborate with IITG in order to engage in both thrust and advanced research fields. To fulfill the ambitions of all stakeholders, I strongly support multi-disciplinary research initiatives across all departments and centers of IITG. I kindly request that all faculty members consider this recommendation and begin drafting research proposals for submission to various calls from government agencies, private sector companies, and other foreign organizations. Research initiatives ought to be focused on reaching India's common people and laying the groundwork for societal advancement. Our dedication to providing the industries with cutting-edge research environments so they can accomplish goals through translational research will be further strengthened by the establishment of Centers of Excellence (CoEs) and numerous Research Forums in focused areas at IIT Guwahati. IITG is currently operating at full capacity to collaborate with businesses on difficult research issues that support the goals of our esteemed Prime Minister's "Atma Nirbhar Bharat" initiative. IIT Guwahati should contribute to the development for indigenous technology helpful for mankind which will promote in transforming industrial development to a great extent. Moreover, in order to fulfill the aspirations of people with the targeted mission of "Vocal for Local," steps are being taken to deliver bio-based sustainable technologies through utilization of the flora and fauna of the North Eastern Region. Faculty members at IITG urgently need to take on innovative research projects in order to align with the Swachh Bharat Mission. IIT Guwahati faculty members have demonstrated strong research capabilities in recent years, placing them on par with faculty members in other universities across the world.

The Institute intends to specifically identify and reward excellence in research where the active participation of the majority of faculty members would improve research accomplishments in order to attract research funding, in an effort to promote high-quality research. While taking a stock of the human inventory, the things that would be most valued would be publications and patents, technology transfers, and promoting entrepreneurship. As IIT Guwahati moves forward with its next phase of development, the community is expecting more from this university. IIT Guwahati is committed to promoting social justice, creating knowledge and resources for the benefit of future generations, and cultivating a sense of pride and belonging among all stakeholders.

Moreover, IIT Guwahati has come a long way since its founding, concentrating on setting up the fundamental infrastructure facilities. It has several sponsored projects and Memorandums of Understanding/MoAs to its credit. We are excited to collaborate with the industry and other academic institutions on a number of fronts. I sincerely hope that the faculty and researchers' tireless efforts will always be rewarded and the institute will become well-known throughout.

Best wishes to the entire IIT Guwahati family!



India-Taiwan Bilateral Symposium on Semi-Conductor Technology, Additive Manufacturing & Packaging (STAMP 2023)



Highlights

1. Attendents of the Symposium: The Chief guest for the event held on October 27th, 2023 was Honourable Director, IIT Guwahati, Prof. P. K. Iyer and the Guest of Honour for the event was Prof. Jeng-Ywan Jeng, The other dignitaries present on the dais were Prof. C. T. Wang, Director- Science and Technology Division, Taipei Economic and Cultural Centre (TECC) in India, National Science and Technology Council, R.O.C. (Taiwan); Mr. Chuhao Chen, HR Head, Delta Inc., India; Mr. Ujjal Mitra, Proprietor of iConsult, Kolkata, India; Dr. Sankha Dip Das, Scientist D MeITY, India; Prof. Vimal Katiyar, Dean, Research and Development, IIT Guwahati and Dr. Ajeet Kumar, Assistant Professor- Department of Design and Convenor for the event.
2. Brainstorming Session & Panel Discussion: Around 30-40 delegates from industries came for this Brainstorming session and Panel discussion. The main idea behind conducting this session was the need for setting up a Centre for possible interaction between academia, industries and government agencies. This Centre would lead to industrial productivity by understanding the needs of the manufacturing industries and would improve their R&D infrastructure.

Main Points of Discussion on STAMP

Points of Discussion in context of STAMP were:

- Proposed idea for establishing a centre for Additive Manufacturing.
- Joint Research Centres- This also initiates the joint PhD program between IITG & NTUST.
- Adaption of 3D printing technology in different industrial sectors.
- Sustainability of the manufacturing process.
- Government support on emerging technology.
- MEITY supports the collaboration on this technology for catering Indian market & skill development.

India-Taiwan Bilateral Symposium on Semi-Conductor Technology, Additive Manufacturing & Packaging (STAMP-2023)



Launch of Joint Research Centre for Technological Advancements & Innovation

The Indian Institute of Technology (IITG) and National Taiwan University of Science & Technology (NTUST) will be establishing a joint research centre on both campuses which would have a great significance not only in boosting the technological advancements but would also benefit the research scholars and young scientists in their respective endeavors. Such exchanges between local & international researchers are essential to both academia and industry. As a part of the collaborative research and innovation efforts of IIT Guwahati and NTUST Taiwan have significantly boosted technical advancements which would benefit both institutions' research scholars and young scientists when they are exposed to a platform of this size.

The joint research centre would focus initially on three emerging technologies- Additive Manufacturing, Semiconductor Technology and Green Energy (Battery & Hydrogen) followed by more in subsequent time. The joint research centre would also facilitate the interaction of Taiwan & Indian industries through both universities for possible scale-up & commercial opportunities for industries. Further, both sides will also engage in a joint call of proposals for collaborative research.

Chuhao Chen, HR Head of Delta Inc. and Kevin Chang from Foxconn Technology Centre were also present and shared industry perspectives.



Brainstorming Session & Panel Discussion on STAMP

Points of Discussion in context of STAMP were:

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- Adaption of 3D printing technology in different industrial sectors.
- Sustainability of the manufacturing process.
- Government support on emerging technology.



On-Site Visiting Session

Visiting session was organized to the Power Electronics Lab in the Department of Electronics & Electrical Engineering and Centre for Nanotechnology. There was also a visit to the Electronics Products Design in the Department of Design and Organic Electronics Lab.

SPSI-MACRO 2023 (17th International Conference on Polymer Science & Technology)



Highlights

- **Inaugural Ceremony:** The chief guest for the event held on December 10th-13th, 2023 was honourable Officiating Director, IIT Guwahati, Prof. Rajeev Ahuja. The other dignitaries present on the dais were Prof. Anil Kumar, President SPSI-MACRO, Dr. Bhoje Gowd, Secretary, SPSI-MACRO, Prof. Vimal Katiyar, Chairperson, SPSI-MACRO and Prof. Amit Kumar, Co-chair, SPSI-MACRO 2023. Prof. Ramakrishnan, Former President, SPSI-MACRO was also a part of the conference.
- **Pre-Conference Workshop on Polymer-based Additive manufacturing:** Around 10 delegates from both academia (Prof. Jeng-Ywan Jeng, NTUST Taiwan; Prof. Vimal Katiyar; Dr. Biranchi Panda and Dr. Ajeet Kumar from IIT Guwahati) and industry (Mr. Rajiv Gupta- HP Inc. Additive Manufacturing India; Mr. Swapnil Sansare- Divide by Zero Technologies; Mr. Deepak Saligram- Intech Additive Solutions Inc.; and Mr. Deepak Kumar- Markforged India) came for this workshop. The main idea behind conducting this workshop was the need for setting up a Centre for Additive manufacturing at IIT Guwahati and for building collaborations between academia & industry. This Centre would lead to a comprehensive understanding of polymer-based additive manufacturing, catering to both beginners & those looking to deepen their knowledge in the field. This would also create an ecosystem for polymer-based additive manufacturing and 3D printing in Assam and the other north eastern states.



Lab visit at Centre for Sustainable Polymers

Visiting session was organized to Centre for Sustainable Polymers which aligned with the conference's theme of advancing scientific knowledge in the field of polymer science & technology. Delegates were given a comprehensive tour of the laboratory highlighting specialized areas such as the analytical laboratory, translational facility, fermentation lab, polymer synthesis lab, etc. In addition, the facility spans various specialized areas including biodegradable polymer synthesis, processing and its characterization. The visit included interactive sessions, fostering meaningful discussions on potential collaboration opportunities and shared areas of interest.

SPSI-MACRO 2023 (17th International Conference on Polymer Science & Technology)



Award Lectures, Plenary Sessions, Poster & Oral Presentations, Technical Sessions

- Six Plenary Sessions including Award Lectures such as Dr. S. Sivaram Endowment Lecture, Prof. Santappa Award Lectures, Prof. Kishore Memorial lectures, Dr. K. H. Gharda Industrial Innovation Award Lecture and Dr. S. R. Palit Memorial Lecture.
- 28 Parallel Sessions featuring 80 Invited Lectures, 30 Keynote Lectures and 112 Oral Presentations covering various themes such as Advanced Polymer Synthesis, Polymer Rheology & Processing, Polymer Nanostructures & Nano Composites, Functional & Smart Biomaterials, polymers for biomedical applications, Biodegradable Polymers, polymers in Energy applications and many more.
- Panel discussions on "Research Education in Polymer Science – Future Roadmap" was designed to bring together leading experts, educators and researchers in the field of polymer science. Moreover, this forum provided an invaluable platform to not only assess the existing landscape of polymer science education but also to chart a course for its future trajectory.
- There were a multiple number of technical sessions on all the four days of the conference which were delivered by invited speakers from various universities and industries across the globe. The sessions covered various themes such as Advanced Polymer Synthesis, Polymer Rheology & Processing, Polymer Nanostructures & Nano Composites, Functional & Smart Biomaterials, Polymers for Biomedical Applications, Biodegradable Polymers, Polymers in Energy Applications and more. Some of the keynote speakers were Prof. Stefan Mecking, University of Konstanz, Germany; Prof. Sanjay Rastogi, KAUST, Saudi Arabia; Prof. Susanta Banerjee, IIT Kharagpur, India; Prof. Shinichi Sakurai, KIT Japan; Prof. Rameshwar Adhikari, TU Nepal; Prof. Jeng Ywan-Jeng, NTUST Taiwan and a lot more.

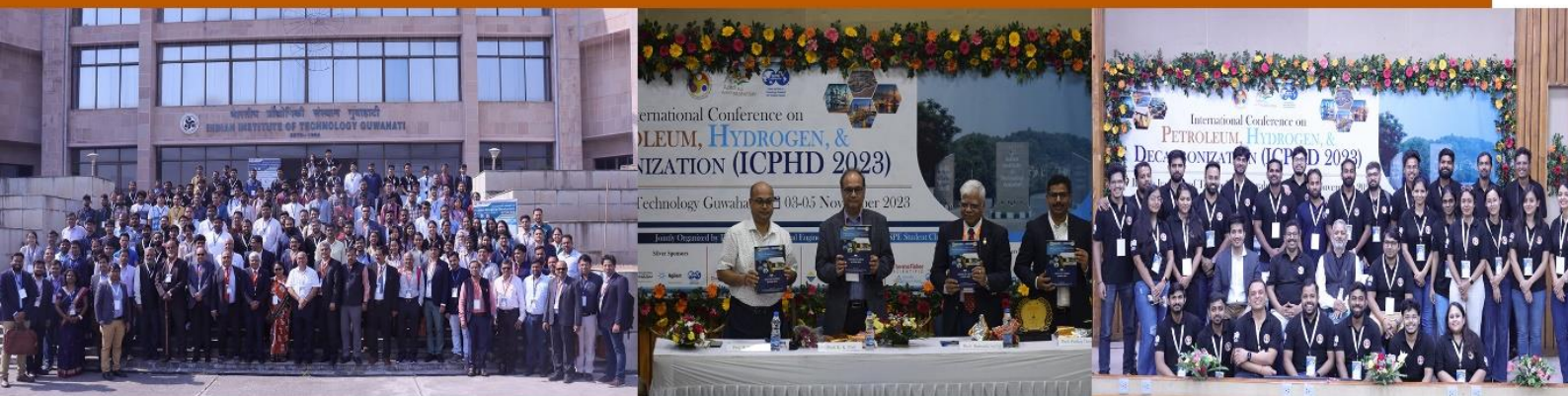


Cultural Programme

The highlight of the cultural event was undoubtedly the diverse array of performances from different parts of India. Traditional and contemporary acts, including dances, music, and theatrical presentations, showcased the talent and cultural heritage of our community members. The cultural event involved performances of the Auniati Satra which include various forms of prayers, dances and religious theatrical shows based on the great Indian epics of Puranas, Vedas, Ramayana, Mahabharata, etc. The foremost dance performances of Sri Sri Auniati Satra were Natua, Apsara, Sutradhar, Ozapali (Panchali & Dulari), Jumura, Krishna Gopi Nritya, Maati Akhara and Gayan-Bayan. The Songs (Satriya Geeta) included Gayana Geet, Ozapali Geet, Janmastami Geet, Raas Geet, Gopal Bairagya Geet, Raja Gharia Geet, Guru Bandana, Deva Bandana & Natarmajar Geet. Naama, Hiya Naam, Deeha Naam, Sabahua Naam, Bairagi Naam, Naam Mangal, Ghosa Mangal, Ras Mangal, etc.

Moreover, the Seven Sister dance performance was more than just an artistic display-it was a celebration of diversity, a bridge between tradition & modernity and a testament to the rich cultural tapestry of Assam & its neighboring states (Assam, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya).

International Conference on Petroleum, Hydrogen & Decarbonization (ICPHD) 2023



International Conference on Petroleum, Hydrogen & Decarbonization (ICPHD 2023) jointly organized by the Department of Chemical Engineering and IITG SPE Student Chapter during **03-05 November 2023** at IIT Guwahati. With different sessions and presentations, the conference delved into diverse topics, from traditional petroleum engineering to decarbonization. In three days, we had a **total of 25 sessions**, which included 6 Plenary Lectures, 22 Keynote Lectures, 11 Invited Talks, 85+ Oral Presentations, and 55+ Poster Presentations along with an event of start-up, a panel discussion, and exhibition booths. There were a total of 250+ participants from various parts of the country as well as the international platform including Canada, USA, Belgium, Russia, UK, Australia, Jordan, and Nepal.

Several Plenary and Keynote presentations showcased India's remarkable leadership in the Carbon Capture and Utilization (CCU) pathway. The Chief Guest of the ICPHD 2023 inaugural Ceremony **Prof. K. K. Pant (Director, IIT Roorkee)** showcased a plethora of CCU technologies that India has developed to turn the CO₂ captured from large-scale sources into the industrial Feedstock, Syngas, for the production of industrial-scale chemicals including fertilizers and green steel making. The Guest of Honor of the ICPHD 2023 inaugural Ceremony, **Prof. Hemanta Kumar Sarmah (University of Calgary, Canada)** underscored the continued importance of the Primary Energy source, Petroleum from the advent of the Second Industrial Revolution through the 3rd and currently 4th. In the keynote presentation, Prof. M. Rafiqul Awal (formerly with Texas Tech University, USA) emphasized that India must embark on a mission- mode Research, Development, Demonstration, and Deployment program (RDD&D) in the model of the US Department of Energy (US-DOE) for proprietary engineering and technology development, roping in the key industries in the energy sector of India with the IITs and major academic and industrial R&D institutions. The Chief Guest of the ICPHD 2023 valedictory Ceremony **Prof. Shalivahan (Director, IIPE Vishakhapatnam)** presented a new frontier of hydrogen technologies and was awarded the best presentation (three best posters and three best oral awards) to the students.

In the Panel Discussion that brought the 3-day conference on Petroleum, Hydrogen, and Decarbonization in the context of Net Zero, a consensus was reached that the presentations by eminent professors and researchers, students, and participants from various energy industries fulfilled the expectations of the international conference. Some key recommendations were made to consolidate the outcomes of the conference and forge collaborative research projects in academia for further development.

International Conference on Advanced Nanomaterials & Nanotechnology (ICANN) 2023



The 8th edition of the **International Conference on Advanced Nanomaterials & Nanotechnology (ICANN)** was held from 29th November – 1st December 2023 at IIT Guwahati. ICANN 2023 event was an excellent opportunity for the scientific community to disseminate of their latest ideas, exchange them with other bright minds, to make new colleagues and collaborations through networking. The list of verticals that were covered by this conference series included healthcare, nano-materials, nanoelectronics, quantum technologies, environment, energy, computation, point-of-care devices and their design, packaging technologies, semiconductors, sensors, micro/nano fluidics, photonics, translational research, and start-up & entrepreneurship.

The Chief Guest for the conference was Prof. Gautam Barua (former Director, IITG). The other dignitaries present on the dias were Prof. P. K. Iyer (Chairperson & Dean PRBR, IITG), Prof. Siddhartha S. Ghosh (Chairperson, ICANN 2023), Prof. Dipankar Bandyopadhyay (Chairperson & Head of Jyoti and Bupat Mehta School of Health Sciences & Technology) and Prof. Akshai Kumar A.S., Convenor ICANN & Head Centre for Nanotechnology. Prof. Rajeev Ahuja (Officiating Director, IITG) along with Sri Chanchal Kumar, Secretary, Ministry of DoNER were present on virtual mode. The ICANN 2023 Abstract Book was also released.

6 Plenary and 6 Keynote speakers from various field of Science and Technology delivered their talks on all the three days. 55+ Invited talks were conducted parallelly where many well-known speakers/scientists interacted with the participants and shared their experience, knowledge as well as their research outcomes. More than 200 participants and students were a part of the poster and oral presentations held in ICANN 2023.

The Doctor's Conclave was a unique event that took place on November 30, 2023. About 10 eminent doctors across the country participated in the Doctor's Conclave and a parallel INUP-i2i Hackathon was conducted where 13 group of participants across the country competed for a handsome prize money of Rs. 50000/- sponsored by Royal Society of Chemistry for the innovated idea in the field of "5G & 6G Technologies" and "Design & Packaging". On the final day Industrial Conclave was held where 4 speakers/entrepreneurs shared their journey, experience and encouraged the youth attending the talks.

The last day was dedicated to the concluding and valedictory function, during which the winners received their prizes. In addition, participants received 12 best oral presentation awards and 14 best poster awards from the American Chemical Society (ACS) and the Royal Society of Chemistry (RSC). Prof. Akshai Kumar A.S. closed the conference with his concluding remarks.

MoU/ MoA

- **Imperial College London and IIT Guwahati** signed an MoU effective from 17th May 2023. This MoU is at present for a period of 5 years and its further extension will depend on a review that will take place at the end of 3rd year. The two Parties wish to work together to explore the possibilities for cooperation in education and research within Imperial College/Department of Physics and the IIT Guwahati/Department of Physics] respectively with respect to the development, testing and dissemination of research-grade microscopy for established and novel imaging modalities and applications with an emphasis on widening access to such capabilities to lower-resourced communities. To the extent feasible, both institutions will encourage direct contact and cooperation between their faculty members, students, departments and research institutes as appropriate under the terms of this MoU. The coordinator at the Imperial College, London is Professor Paul M W French and the coordinator at IIT Guwahati is Bosanta R Boruah.
- **IIT Guwahati signed MoU with National Highways & Infrastructure Development Corporation Limited** on 25th May 2023 to establish the basis of collaboration between both the parties such that the NHIDCL and IIT Guwahati can take up various activities for common interest such as sharing knowledge on innovative ideas and technologies in the field of highway engineering. Initiated by Dr. Teiborlang Lyngdoh Rynthiang, Dept of Civil Engineering, IIT Guwahati.
- **MoU was signed with M/s Primary Healthtech Pvt. Ltd. Research Park, IIT Guwahati** on 25th May 2023 for collaboration among researchers and raise the efficiency of operations by bringing in researchers from elsewhere in the country. Initiated by Head of Centre for Nanotechnology, IITG.
- **IIT Guwahati signed MoU with M/s Symbica Private Limited, Guwahati** on 30th May 2023 for collaboration with IITG on research, product/process development, intellectual property landscape. Initiated by Head of Centre for Nanotechnology, IITG.
- **IIT Guwahati signed MoU with M/s AGT biosciences (OPC) Pvt. Ltd. Mirza, Assam** on 7th June, 2023. This MoU aims to utilize the technological expertise, supervision and joint research. Initiated by Dr. Lingaraj Sahoo, and Dr. Siddhartha Sankar Ghosh Dept. of Biosciences & Bioengineering (BSBE) IITG.
- **IIT Guwahati signed MoU with Amity Institute of Nanotechnology, UP** on 8th June 2023 to promote cooperation in education and R&D activities between the two institutions under the INUP-i2i program sponsored by MeitY, GoI, hereby affirm their intent to promote such academic collaborations and to participate in various academic endeavours. Initiated by Head of Centre for Nanotechnology, IITG.
- **MoU was signed between IIT Guwahati and National Engineering College, Tamil Nadu** on 8th June, 2023 to promote cooperation in education and R&D activities between the two institutions to affirm their intent to promote such academic collaborations and to participate in various academic endeavours. Initiated by Head of Centre for Nanotechnology, IITG.
- **IIT Guwahati and Pandit Deen Dayal Energy University, Gandhinagar** signed MoU on 8th June, 2023. Initiated by Head of Centre for Nanotechnology, IITG.
- **MoU was signed between IIT Guwahati and M/s Altanostics Labs Pvt. Ltd., Uttar Pradesh** on 8th June, 2023 to foster rural entrepreneurship. Initiated by Head of Centre for Nanotechnology, IITG.

MoU/ MoA

- **SAMEER – Society for Applied Microwave Electronics Engineering and Research** – a registered society under the Ministry of Communications and Information Technology, Government of India and IIT Guwahati signed a MoA on 20th June, 2023. The MoA was signed between Prof. Vimal Katiyar, Dean R&D, IIT Guwahati and Dr. P. Hanumantha Rao, Director General, Society for Applied Microwave Electronics Engineering and Research, IIT Campus, Powai, Mumbai. The main objective behind this was to introduce 6G: THz Test Bed with Orbital Angular Momentum and Multiplexing. Initiated by Dr. Ratnajit Bhattacharjee, Dept. of Electronics & Electrical Engineering (EEE) and Dr. Mahima Arawatia, Dept. of Electronics & Electrical Engineering (EEE), IIT Guwahati.
- **IIT Guwahati signed MoU with GMR Institute of Technology, Rajam** on 21st June 2023. The objective behind this was to promote cooperation in education and R&D activities between the two institutions under the INUP-i2i program sponsored by MeitY, GoI, hereby affirm their intent to promote such academic collaborations and to participate in various academic endeavours. The MoU was signed between Prof. Vimal Katiyar, Dean R&D, IIT Guwahati and Dr. Pammi Sri Venkata Narayana, Associate Dean – R&D GMR Institute of Technology, Rajam, Andhra Pradesh. Initiated by Dr. Dipankar Bandyopadhyaya, Professor, Dept. of Chemical Engineering, IIT Guwahati.
- **A MoU was signed between IIT Guwahati and University of Science & Technology, Meghalaya (USTM)** on 21st June 2023. The objective was to promote cooperation in education and R&D activities between the two institutions under the INUP-i2i program sponsored by MeitY, GoI, hereby affirm their intent to promote such academic collaborations and to participate in various academic endeavours. The MoU was signed by Prof. Vimal Katiyar, Dean R & D, IIT Guwahati and Ms. Aniu Hazarika of USTM, Meghalaya. Initiated by Dr. Dipankar Bandyopadhyaya, Professor, Dept. of Chemical Engineering, IIT Guwahati.
- **IIT Guwahati signed MoU with MeitY (Ministry of Electronics and Information Technology Electronics)** on 23rd June, 2023 at IIT Guwahati for the project entitled “Design and Development of AI/ML Co-Professor and Post Quantum Cryptography Co-Professor (An initiative towards Electronics System Design and Manufacturing in North-East Region) to be implemented by IIT Guwahati. Initiated by Dr. Gaurav Trivedi, Dept. of Electronics & Electrical Engineering (EEE), IIT Guwahati.
- **A MoU was signed between IIT Guwahati & Jal Jeevan Mission, Guwahati** on 28th June 2023 at IIT Guwahati. The purpose behind this was for the project on “Incorporation of advanced technology (through retrofitting) for the removal of Fluoride from the Raw water of ground water source of existing 3 (three) PWSS at 1) Nizbogai 2) Rajapara 2 and 3) Sakhati at Boko area in Kamrup District of Assam. It was signed by Prof. Vimal Katiyar, Dean – R&D, IIT Guwahati and Mission Director, Jal Jeevan Mission, Government of Assam. Initiated by Dr. Mihir Kumar Purkait, Dept. of Chemical Engineering, IIT Guwahati.
- **IIT Guwahati signed MoU with Unit of Science and Educational Development (UNISED)** on 10th July, 2023 at IIT Guwahati. It was signed by Prof. Vimal Katiyar, Dean- R&D, IIT Guwahati and Dr. R. N. Lenka Director, (Pedagogy, Research & Innovation) UNISED INDIA.
- **IIT Guwahati signed MoU with North- Eastern Hill University (NEHU)** on 11th July, 2023 at IIT Guwahati. It was signed by Prof. Vimal Katiyar, Dean- R&D, IIT Guwahati and Prof. A. S. Dixit, Director, R&D Cell, North- Eastern Hill University, Shillong, Meghalaya, India. The objective was to promote cooperation in education and R&D activities between the two institutions under the INUP-i2i program sponsored by MeitY, GoI, hereby affirm their intent to promote such academic collaborations and to participate in various academic endeavours. Initiated by Head of Centre for Nanotechnology.

MoU/ MoA

- **A MoU was signed between IIT Guwahati and CSIR- Central Road Research Institute, New Delhi** on 22nd July, 2023 at IIT Guwahati. The purpose was to promote cooperative research and to facilitate the exchange of ideas, the development of new knowledge, and to enhance high quality research acumen. The major thrust of the research on which the parties will cooperate is traffic engineering, transportation engineering, pavement materials and associated Civil Engineering areas. Initiated by Dr. Akhilesh Kumar Maurya, Dept. of Civil Engineering, IITG.
- **MoU between IIT Guwahati and North Eastern Development Finance Corporation Ltd. (NEDFI)** was signed on 31st July, 2023 at IIT Guwahati for consultancy services for carrying out "Survey and Studies on Remediation of Microplastic on shorelines of Brahmaputra River. Initiated by Dr. Vimal Katiyar, Dept. of Chemical Engineering, IIT Guwahati.
- **IIT Guwahati signed MoU with National Rural Infrastructure Development Agency (NRIDA) under Ministry of Rural Development (MoRD), Govt. of India** on 7th August, 2023 at IIT Guwahati. The objective behind this was to cooperate and jointly participate in performance evaluation of the roads constructed/ being constructed under PMGSY using new technologies. Initiated by Dr. Anjan Kumar S, Dept. of Civil Engineering, IITG.
- **IIT Guwahati signed MoU with Border Roads Organisation (Research and Development Establishment), Ministry of Defence, Govt. of India** on 31st August, 2023 for the research work entitled, "STUDY AND TRIAL OF MARGINAL MATERIAL AS PER IRC SP 89 (PART II) 2018 FOR STABILIZATION OF SUB BASE/BASE FOR ROADS OF BRO PROJECTS". Initiated by Dr. Anjan Kumar S, Dept. of Civil Engineering, IITG.
- **MoA between IIT Guwahati and Department of Biotechnology (DBT)** was signed on 6th September, 2023. This Memorandum of Agreement defines the role and responsibilities of the participating agencies, monitoring and other matters related to the Injectable silk-based hydrogel system loaded with chemotherapeutic agent to treat canine mammary gland neoplasms. Initiated by Dr. Biman B Mandal, Dept. of Biosciences and Bioengineering, IITG.
- **IIT Guwahati signed MoU with National Institute of Technology, Meghalaya** on 22nd September, 2023 at IIT Guwahati to promote cooperation in education and R&D activities between the two institutions under the INUP-i2i program sponsored by MeitY, GoI, hereby affirm their intent to promote such academic collaborations and to participate in various academic endeavours. Initiated by Dr. Dipankar Bandopadhyay, Professor, Dept. of Chemical Engineering, IITG.
- **IIT Guwahati signed MoU with Tezpur University** for academic & research collaboration on 12th October, 2023. The MoU was signed between Prof. P.K. Iyer, Officiating Director, IIT Guwahati and Prof. Shambhu Nath Singh, VC, Tezpur University at IIT Guwahati. This MoU aims at fostering collaboration in the field of research and recognizing the potential benefits that joint efforts can bring to their respective academic and research communities. Initiated by Dr. Vimal Katiyar, Dept. of Chemical Engineering, IIT Guwahati.

Awards/ Achievements



Prof. Tharmalingam Punniyamurthy (Dept. of Chemistry)

Received the Prestigious JC Bose Fellowship Award.



Prof. B. Anand (Dept. of Biosciences & Bioengineering)

Received the S. Ramachandran- National Biosciences Award for Career Development.



Dr. Binoy Krishna Hazra (Dept. of Physics)

Received the INSPIRE Faculty Fellowship Award for 2023-2028.



Dr. Biranchi Panda (Dept. of Mechanical Engineering)

Dr. Panda and his team won the 2nd Runners Up in TATA Steel Grand Finale Material NEXT 4.0 Competition.



Dr. Debanga Raj Neog (Mehta Family School of Data Sciences & Artificial Intelligence)

Received the Young Scientist Award 2023 by the Assam Science & Technology and Environment Council under the Science, Technology & Climate Change department, Government of Assam.

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