



# चिंतन

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## IIT Guwahati starts School of Business, admission for MBA begins soon

Indian Institute of Technology Guwahati has commenced its academic activities at the newly initiated School of Business and will soon be admitting the first batch of students at its flagship programme, namely, the Masters of Business Administration (MBA).

The admission process for the MBA programme, will open in January 2022, and the first batch is expected to commence their studies from July 2022. The admission to the MBA programme will be in line with the admission process adopted by other IITs offering MBA programmes, with the requirement of opening this programme to prospective applicants who have qualified the Common Admission Test (CAT) 2021.

The website of the School of Business was recently launched by the Director of the Institute, Prof. T. G. Sitharam, in the presence of Prof. Varadraj B. Bapat (Member, Board of Governors, IITG), Padmashri Prof. Prahlada Rama Rao (Member, Board of Governors, IITG) and Prof. N. Viswanadham, Emeritus Professor and INSA Senior Scientist, IISc Bangalore. The website of the School is now accessible at: <http://www.iitg.ac.in/sob> where information related to all

academic activities and initiatives will be updated. Other dignitaries present on the occasion include, Prof. Nachiketa Tripathi (HSS, IITG), Prof. Siddhartha Pratim Chakrabarty (Mathematics, IITG), Prof. Deepak Sharma (ME, IITG), Prof. Sukhomay Pal (ME, IITG) and Prof. Parameswar K. Iyer (Dean-PRBR, IITG).

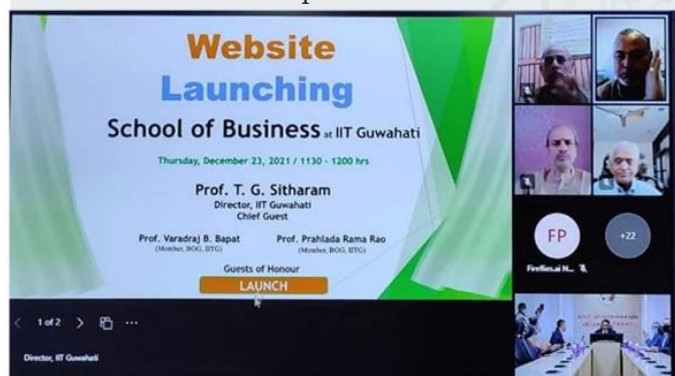
The admission process will take place in two stages. In Stage 1, the shortlisting of applications for the Personal Interview (PI) will be done. This will be followed by Stage 2, where the final selection will be made based on the PI, along with a few other parameters.

Speaking on the occasion, Prof. T. G. Sitharam, Director, IIT Guwahati highlighted that the establishment of the School of Business at IIT Guwahati was motivated by the idea of promoting and contributing to the subjects of management and entrepreneurship, amongst other emerging subjects. He emphasized the mission of the School to create an ecosystem in line with NEP2020, where learners from the diverse background can strive and acquire expert skills and knowledge in business management as well, while

also creating an opportunity for executives and technocrats to translate their ideas into tangible business solutions.

The Head of the School, Professor Laishram Boeing Singh mentioned that the primary goal of this newly established School is to impart business and management knowledge in conjunction with the right skills, to empower individuals striving towards achieving tangible entrepreneurial goals and utilize the diverse ecosystem existing at IIT Guwahati.

The School of Business, the first of its kind in the region, currently has several faculty members associated with it, from various Departments of IITG, who represent the various functional areas of management, including, Project Management, Organizational Behaviour, Human Resource Management, Finance, Economics, Operations Management, Information Systems, and Strategic Management. Some of the unique expertise offered by the School include niche areas of Business Analytics, Human Resource Analytics, and Sustainable Finance. Finally, in the spirit of the continued commitment of IIT Guwahati towards the improvement of its geographical neighbourhood, the School is expected to lend support to skill development and empowerment in the region, especially for small and women entrepreneurs.



The launch of the website of the school of business IIT Guwahati



Prof. T. G. Sitharam along with other faculties during the launch of the website of the school of business IIT Guwahati

## IIT Guwahati researchers develop cost-effective, highly efficient perovskite solar cells to produce electricity from sunlight

Indian Institute of Technology Guwahati researchers have developed hybrid perovskite-based solar or photovoltaic devices to produce electricity from the sunlight, which are highly efficient, cost effective, easy to manufacture and easily recyclable.

These devices were developed achieving power conversion efficiencies beyond 21% by utilizing economical solution-based photovoltaic device processing techniques at mild room temperature and realizing high ambient, thermal and optical stability.

Among all the renewable energy sources, the energy from sun (solar energy) is considered to be the most sustainable due to its ample availability on the surface of the earth. Currently, inorganic solar cell (Silicon-based) is a major player in the market. However, this technology requires high-temperature processing that results in the high price of solar panels. Further, the recycling of solar panels is hazardous and complicated.

The perovskite solar cells (PSCs) research has experienced tremendous attention due to their exponential growth in terms of efficiencies achieved within a decade. However, the perovskite materials are extremely unstable towards ambient (humidity and oxygen) conditions that restrict their commercialization.

The research team at IIT Guwahati comprising of research scholars Rabindranath Garai (Department of Chemistry), Ritesh Kant Gupta (Centre for Nanotechnology), Arvin Sain Tanwar (Department of Chemistry), Maimur Hossain (Department of Chemistry) working under the supervision of Prof. Parameswar K. Iyer, Department of Chemistry and Centre for Nanotechnology and School for Health Science and Technology, IIT Guwahati, have achieved remarkable results in terms of efficiency and stability of the PSCs.

In this recent study of IIT Guwahati, published in the American Chemical Society journal *Chemistry of Materials*, 2021, 33, 5709-5717, charged conjugated polymers have been incorporated in photovoltaic devices as a passivation molecule to achieve defect-free high-quality perovskite solar cell devices.

The passivated defect-free device reveals a high efficiency of 20.17% with excellent reproducibility. Such polymer based passivation method effectively improved the long-term device stability by improving the hydrophobicity of the perovskite layer.

In another recent investigation of the IIT Guwahati team, published in The Royal Society of Chemistry journal *Journal of Materials Chemistry A*, 2021, 9, 26069-26076, the researchers demonstrated the development of solution-processed multi-dimensional (2D-3D) graded perovskites and the precise role of surface recrystallization to achieve very high efficiencies, stability, economical device scalability by mitigating the perovskite defects.

To achieve these remarkable performances, systematic design and development of functional molecules such as organic ammonium halide salt, 4-(aminomethyl) benzoic acid hydrogen bromide was used strategically to fabricate 2D-3D graded perovskite and investigated as device engineering and performance enhancement materials. 2D-3D graded device reveals an outstanding efficiency of 21.18% which are highly reproducible.

Moreover, the top 2D layer of the 2D-3D graded heterostructure efficiently improves the hydrophobicity and the corresponding device discloses almost negligible degradation under humid conditions. To check the practicality of these approaches, large-area devices with an active area  $\sim 2 \text{ cm}^2$  resulted in high efficiency of over 18%, that can be arranged in an array to fabricate larger photovoltaic modules on flexible or rigid surfaces including as transparent windows in buildings.

Speaking about these research output, Prof. Parameswar K. Iyer, mentioned that organic-inorganic hybrid PSCs have experienced rapid growth in terms of efficiency and stability due to the development of highly efficient functional materials combined with careful device engineering. The materials design can be tailored at the molecular level whereas the fabrication process is printable and solution-based, making the overall solar cell development process economical and scalable.

These results obtained from perovskite solar cells have performed well beyond the commercial inorganic solar cells panels which are available in the market presently. Also, these small and large area devices performances are among the best results

achieved using these classes of perovskite materials. Therefore, the strategies being developed have the potential to address the renewable energy challenges regarding the large-scale commercial fabrication of efficient and stable solar panels



Prof. Iyer (Centre) with research team

Prof. T. G. Sitharam, Director IIT Guwahati (right) accompanied by Prof. Parameswar K. Iyer, Dean, Public Relations, Branding and Ranking, called upon Hon'ble Chief Minister of Assam Dr. Himanta Biswa Sarma ji (center) on 4 December 2021 and discussed about various initiatives like NE Research conclave, establishment of Super speciality Hospital, drone port, drone technology center initiative, science teachers training program and other activities focussed on the development of Assam and the north-east region. IIT Guwahati expresses its gratitude for the support.



## Awards & honours



Congratulations to Prof. Kaustubha Mohanty, Professor, Department of Chemical Engineering, IIT Guwahati has been elected as Fellow of Biotech Research Society of India (BRSI) and has also joined the Editorial Board of Springer's

Biomass Conversion and Biorefinery Journal.



Prof. Swaroop Nandan Bora, Department of Mathematics, IIT Guwahati has been elected as the President of the Indian Society of Theoretical and Applied Mechanics (ISTAM) for the year 2022.

An accomplished researcher in ocean and coastal engineering and differential equations, Prof. Bora is the first person from North East India to hold this coveted post in 66 years of history of ISTAM. Researchers from various branches of science and engineering are part of ISTAM which has been instrumental in providing a platform to researchers working in various disciplines of mechanics.



Prof. T. G. Sitharam, Director, IIT Guwahati, was conferred with Honorary Fellowship by the Indian Geotechnical Society during IGS-2021 for his outstanding contribution to Geotechnical Engineering and society.



Prof. P. K. Giri has been elected as a Fellow of the West Bengal Academy of Science & Technology (WAST).

Mr. Chandu Patra has been awarded the Best Rapid Presentation & Poster Award at the International Conference on Biotechnology for Resource Efficiency, Energy, Environment, Chemicals and Health (BRE3CH-2021). This international conference was organized by CSIR-INDIA, CSIR-Indian Institute of Petroleum Dehradun and The Biotech Research Society-India (BRSI).

This was awarded under the category of flash talk and poster presentation for the poster entitled "Polypyrrole doped activated carbon for efficient removal of emerging antibiotic contaminant from simulated wastewater setups".

Mr. Apurba Das, Department of Physics, won the Persistent Systems Case Prize of Rs. 5 Lakhs in the National Bio Entrepreneurship competition, one of the topmost winners from students' team for their Electro-active scaffolds designed from biocompatible and bioactive ceramics for rapid healing of complex bone fractures (<https://www.ccamp.res.in/17-startups-and-5-student-innovator-teams-take-home-winners-title-ccamp-birac-national-bio> ; <https://www.biovoicenews.com/nbec-2021-declares-the-names-of-17-startups-5-students-as-winners/>)

Mr. Samik Mitra, Department of Physics, won the PANE Young Researchers Award for the best oral presentation in the ASTROPHYSICS & COSMOLOGY (AC) section of the conference held at Tripura University during 15-17 December 2021 (<https://pane2021.wordpress.com/awards/>)



## REPORT ON ALUMNI AWARD 2021

The Institute's Alumni Award 2021 was held online on 8 december 2021. This event was hosted by the Alumni and External Relations office of IIT Guwahati and assisted by the Student Alumni Interaction Linkage team of IIT Guwahati. The Director, IIT Guwahati, Prof. T.G. Sitharam attended the event as the Chief Guest and announced the winners of the awards.

Mr. Aman Mathur, the President of IIT Guwahati Alumni Association chaired the event as the Guest of Honour.

The event Dean, Alumni and External Relations, Prof. Mihir Kumar Purkait inaugurated the session and welcomed the august audience. The event was also attended by the Dean, Resource Generation & Finance and Associate Dean, Alumni and External Relations, Prof. Rajib Kumar Bhattacharjya.

The winners of IIT Guwahati Alumni Awards 2021 were:

- o Mr. Archit Gupta, CEO, Clear Tax. Mr. Gupta has been awarded with the Distinguished Alumni Award and honoured with a citation, trophy and a shawl.
- o Dr. Ankit Garg, Associate Professor in the Department of Civil and Environmental Engineering at Shantou University has been awarded with the Young Alumni Achiever Award and honoured with a citation and a trophy.

The winners shared their experiences at IIT Guwahati and expressed their gratitude to their alma mater for recognising their achievements. Mr. Archit Gupta encouraged the present students and alumni of the Institute to take up entrepreneurship for a better future and help in building up the nation. Dr. Garg in his address emphasised on the need for collaboration for dissemination of the culture of scientific research worldwide. He urged the students and alumni of the Institute to be a part of research journey and thereby contribute fruitfully to the society.

Mr. Archit is a graduate from IIT Guwahati in Computer Science and Engineering in 2006, the founder and CEO at clear tax. Inspired by Silicon Valley's start-up environment, he decided to solve people's problems and serve his country through his start-up clear tax.



Archit has a unique ability to identify opportunities in areas that would at first look tedious and it thus led to ClearTax which has put the Indian startup ecosystem in global spotlight and built the foundation of FinTech innovation in India.

Archit belongs in that rare category of outstanding individuals who excel in every domain, showcasing the highest levels of creativity, technical vision, leadership, execution, innovation, and mentoring. His work has received significant recognition as an outstanding entrepreneur, including the prestigious Fortune India's 40 under 40 list.



Dr. Ankit Garg, graduated with a degree in Civil Engineering from IIT Guwahati in 2010, Dr. Ankit Garg is an Associate Professor in the Department of Civil and Environmental Engineering at Shantou University (STU). He has

completed his PhD from Hong Kong University of Science and Technology (HKUST). He has published more than 90 Web of Science publications and is a proud recipient of a prestigious International award from British Civil Engineering Associations UK. His perseverance and a proactive attitude helped in establishing people to people exchange. He was the main organizer of the 1st Indo-China Research Webinar series featuring more than 5000 participants in 16 technical sessions and 12 guest speaker highlights. Currently, he is presiding over the National Natural Science Foundation of China Project.

Mr. Neeraj Kumar, General Secretary, Student Alumni Interaction Linkage Cell, IIT Guwahati addressed the gathering and requested the alumni community to lend a helping hand to the present students of IIT Guwahati, as and when appealed for.

The event ended with a vote of Thanks from the Head of the Section, Alumni and External Relations, IIT Guwahati

## Memorandum of Understandings



IIT Guwahati signed MoU with University of St. Andrews

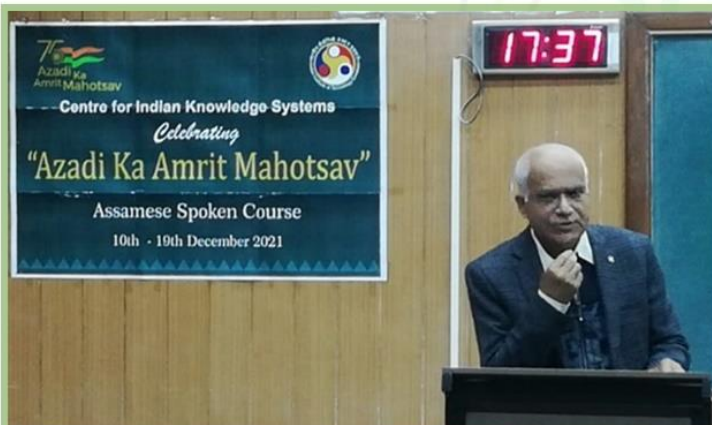


IIT Guwahati signed MoU with National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata.



IIT Guwahati signed MoU with NIT Sikkim.

1994 – 2019  
years



Sahitya Akademi award-winning writer, former DGP of Assam and president of Assam Sahitya Sabha, Dr. Kuladhar Saikia was invited by Head of Centre Prof. U.S. Dixit to visit and interact with the Faculty members and Students who joined the Spoken Assamese Course conducted by Centre for Indian Knowledge Systems, IIT Guwahati.





## Celebration of International Day of Persons with Disabilities 2021 in IIT Guwahati

Equal Opportunity cum Special Reservation Cell of Indian Institute of Technology Guwahati has organised a programme on the occasion of the International Day of Persons with Disabilities, on 3 December at the Mini Auditorium of the Institute itself. This time the day was observed with the theme: "Leadership and participation of persons with disabilities toward an inclusive, accessible and sustainable post-COVID-19 world".

Shri Debeswar Bora, Commissioner for Persons with Disabilities, Govt. of Assam and Shri Kishor Mohan Bhattacharyya, Assistant Professor, Dept. of History, Gauhati University was invited as Chief Guest and Guest of Honour for the programme. Prof. T. G. Sitharam, Director, Prof. S. K. Kakoty, Dy Director of IIT Guwahati, Prof. S. K. Majumder, Chairman and Prof. Anil K. Saikia, Former Chairman of the Cell was also present at the programme.

The celebration was started with lighting of lamp and the Institute Anthem. At the very beginning, the Chairman presented a welcome address to the Dignitaries and the faculties, staff and students who attended the programme.

The Director addressed his speech on the theme of the programme and various perspective and problems facing by the physically challenged people. Further, the Dy. Director, in his lecture has delivered a detailed purview of various initiative taken for Accessible India Campaign movement of Govt. of India as well as implementation of the Rights of Persons with Disabilities Act., 2016. The Former Chairman also shared his personal experience and various opportunity provided to the PwD students, during his tenure as the Chairman.

Further, Guest of Honour Shri Bhattacharyya, who himself an icon for the physically challenged, has delivered a very inspiring speech, giving examples of the various achievement accomplished by the physically challenged people around the world.

And lastly, the Chief Guest has portrayed in his lecture, a present scenario about the various policies implementing by the Govt. of Assam and he also has requested the stakeholders of the institute for help and advice in preparation of the govt. policies for the welfare of the Physically Challenged people.

The programme was ended with the vote of thanks by Mr. Gunamani Das, Head of the Equal Opportunity cum Special Reservation Cell.





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