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Address by Prof T. G. Sitharam, Director, IIT Guwahati on the occasion of 73rd Republic Day Celebrations at IIT Guwahati

IIT Guwahati to begin PG Certificate Programmes in Cybersecurity, Artificial Intelligence & Deep Learning in collaboration with Times Professional Learning

Indian Institute of Technology Guwahati, has signed an agreement with Times Professional Learning (TPL), to start Post Graduate Certificate Programme in Cybersecurity and Post Graduate Certificate Programme in Artificial Intelligence & Deep Learning. The programmes are intended to provide career enhancement and skill upgradation for working professionals as per the requirements of industry and the corporate world.

The courses are also aligned with The National Education Policy 2020's directives to Higher Education Institutes to play an active role not only in conducting research on disruptive technologies such as AI but also in creating initial versions of instructional materials and courses including online courses in cutting-edge domains.

The Post Graduate Certificate Programme in Cybersecurity is an eight months course and is intended to

provide career enhancement and skill upgradation as per the requirements of fast-moving job roles like network security specialist, cyber security analyst, cybersecurity architects, cyber security manager, and leading up to C-suite positions such as Chief Information Security Officer. The demand for cybersecurity domain experts has doubled in the last year amidst rising global concerns of security breaches and rapid digitalisation across organisations and institutions during the pandemic.

The Post Graduate Certificate Programme in Artificial Intelligence & Deep Learning is a nine-month course. It will provide candidates detailed understanding of AI and Deep Learning through a comprehensive curriculum. The programme focuses on fundamental and advanced learning through subjects like Python programming, data analytics, neural networks, computer vision, and image recognition, etc. It will help candidates prepare for competitive and



cutting-edge job roles such as AI and ML Engineer, Computer Vision Expert, Software R&D Engineer, Cloud Support Engineer, among others, that involve a high level of technical skill and training.

Speaking on the importance of skill upgradation in the domain of cybersecurity and AI, Prof. T. G. Sitharam, Director, IIT Guwahati, said, "AI-based technology has made rapid inroads through its seamless mechanisms and improved productivity through reduced human intervention. With the greater adoption of technology, there is a growing need for people with the best-in-class technical skill sets to meet demand. Our partnership with TimesTSW for these programmes will fulfil the requirements in AI and Cybersecurity across sectors. The curriculum is meticulously developed with foundational and advanced subjects to provide our learners with comprehensive knowledge leading across these specialised domains conforming to industry requirements. These programmes will enable professionals to upgrade their skills, knowledge about evolving technologies and upscale in their career graph."

Commenting on the launch of the programme, Anish Srikrishna, Chief Executive Officer, Times Professional Learning, said, "Artificial Intelligence and Deep Learning are revolutionising every industry across the globe, and this will be core across all their functions including supply chain and customer management. Digitalisation has become an integral part of our lives. However, it has increased our vulnerability and made us prone to frequent cyberattacks. There is an urgent need to build a robust cybersecurity force to overcome and foil cyberattacks, including malware, ransomware, and phishing attacks. Our Post Graduate Certificate Programmes in Artificial Intelligence & Deep Learning and Cybersecurity in partnership with Indian Institute of Technology Guwahati will create highly skilled and future-ready professionals to build competencies and excel in these domains."

Applicants who have a bachelor's degree with a minimum of 50 per cent marks and at least two years of work experience in IT or software development would be eligible for the course. Candidates will receive certificates issued by the Indian Institute of Technology Guwahati and Times TSW on completing the programme.

These programmes will address the industry requirements by providing a skilled workforce, helping working professionals to upskill, and enhancing their

repertoire of knowledge in the field of AI, DL, and cybersecurity. These programmes incorporate live instructor-led sessions conducted over the weekends by top experts from IIT Guwahati and TimesTSW faculty members along with industry experts. Students will take part in a Capstone project where they will demonstrate the skills, they have acquired by solving real-world business problems and include a five-day immersive learning experience at the IIT Guwahati Campus.

IIT Guwahati Researchers Develop novel Low-Cost Improved Natural Draft Charcoal Retort

Indian Institute of Technology Guwahati Researchers have developed a novel low-cost Improved Natural Draft Charcoal Retort (INDCR) to address the technological and capital investment challenges of Indian charcoal makers.

National Thermal Power Corporation (NTPC) Limited's New initiative Wing for Waste to Energy Projects, organised an open competition 'Green Charcoal Hackathon 2020, where IIT Guwahati innovators presented the INDCR as participants.' Upon further evaluation and mentorship by the NTPC officials, the developed reactor has been given an opportunity to be demonstrated at Township of NTPC Ramagundam Thermal Power Station, located in Telangana State to produce charcoal from Municipal Solid Waste (MSW) (5 tons/day).

Charcoal is widely used as a fuel for domestic and industrial heating applications. While most of the developed countries are producing industrial charcoal through the retort system, it was not available for Indian charcoal producers because of technological barriers and the need for higher capital investment.

Dr. Arunkumar Chandrasekaran and Dr. Senthilmurugan Subbiah, Professors in the Department of Chemical Engineering, IIT Guwahati, who were the lead innovators of the INDCR system, have filed an Indian patent for the design of this innovative reactor. The reactor's technical detail and its performance have been published in the reputed peer-reviewed journal Energy & Fuels Journal, American Chemical Society.

Highlighting the unique aspects of the developed reactor, Dr. Senthilmurugan Subbiah, Professor, Department of Chemical Engineering, IIT Guwahati, said, "The innovative reactor is proven to produce

high-quality charcoal from a wide range of feedstock, and it's designed to use its own feedstock as heating fuel. This reactor is portable to agricultural fields, and it is proven to convert all the agricultural waste to charcoal without the noxious gas emissions."

The developed charcoal retort reactor was installed and tested at Paramakudi, Ramanathapuram District, Tamil Nadu, with the fabrication help of M/s. Optima Heat Technologies, Paramakudi, Tamil Nadu.

The pilot-scale mobile charcoal production unit is 125 kg of input loading capacity with the two-phase mode of operation. The demonstration of the whole research consumed two years with more than 60 field trials having been carried out to ensure consistent yield and quality of charcoal.

Speaking about the technology transfer agreement between IIT Guwahati and Sanron Fuel Pvt. Ltd., New Delhi, and Samkitech Resources, Hyderabad Dr. Senthilmurugan Subbiah, Professor, Department of Chemical Engineering, IIT Guwahati, said, "This technology transfer will enable further research and development in IIT Guwahati to design a higher capacity reactor system to produce an industrial-grade charcoal irrespective of any input loading feedstock with a higher mass & energy yield and lower emissions."

Researchers from IIT Guwahati have chosen various biomasses such as *Prosopis juliflora*, *Casuarina equisetifolia*, *Bambusoideae*, Biomass briquettes, Wood pellets and Refuse-Derived Fuel (RDF) briquettes from Municipal Solid Waste (MSW) as the input feedstock for charcoal making process.

The definition of good quality charcoal depends on its end-user. Hence, the retort reactor has been developed to be capable of producing charcoal in higher mass yield (34%-42%), versatile quality of fixed carbon (76%-88%), higher energy content (6400-7200 kcal/kg), minimal noxious emission (2.65 kg of CO₂/kg of charcoal) and lesser carbonization time (4 hours).

Further, the reactor has the ability to control the process at any point in time during operation. It is user-friendly in terms of loading biomass/feedstock and unloading charcoal. Upon attainment of 270°C and upward, the volatile gases produced in the wood chamber, which are mainly low molecular weight

organic volatile compounds are redirected back into the combustion chamber for complete burnout and liberated as complete combustion products.

The retort system operates in an environmentally friendly way with very low emissions of Carbon Monoxide, Carbon Dioxide, Hydrocarbons, and particulate matter. Further, the charcoal produced from the retort reactor was used as a fuel in barbeque & blast furnace heating applications and as a sorbent in pharmaceutical wastewater treatment.



Research Team that develop the novel Low-Cost Improved Natural Draft Charcoal Retort

IIT Guwahati organises Industrial Interaction event, allows Virtual Incubation, and starts new grants and incubation to boost Entrepreneurship

Indian Institute of Technology Guwahati, is taking several steps to encourage start-up and entrepreneurial activities. Aimed to boost industrial interactions and start-up activities, Research and Industrial Conclave (RIC) is being organised from Jan 20 to 23, 2022. Technology Incubation Centre, IIT Guwahati allows virtual incubation, and student start-ups are permitted. New grants and incubation are being provided by IIT Guwahati Technology Innovation and Development Foundation.

IIT Guwahati along with IIT Guwahati Research Park is organising 'Research and Industrial Conclave (RIC)

- Integration 2022 from Jan 20 to 23. This is an Amalgamation of Academia, Industry & start-ups. To boost industrial interactions and start-up activities, for the first time, industrial interaction and entrepreneurial events are included with the annual research conclave.

Earlier only graduates were allowed to have their start-up incubate at IIT Guwahati Technology Incubation Centre (IIT Guwahati TIC). Now onwards, the institute has also allowed incubation of IIT Guwahati student's start-up at IIT Guwahati Technology Incubation Centre including allowing virtual incubation as well. The institute signed MoUs with iDEX (Defence Innovation Organisation) and PSU such as OIL INDIA, NRL to fund the start-ups. It also has tie-ups with nationalised and private banks for providing loans to the incubated start-up. It also runs a special scheme for women entrepreneurs. IIT Guwahati has recently incorporated a section- 8 company, IIT Guwahati Technology Innovation, and Development Foundation (IITG TIDF). The company has two divisions. Through its TIH division, the IITG TIDF provides a grant of up to 10 lakhs for the start-up working on underwater exploration and incubating them in the TIC. Through its BioNest division, it directly incubates bio-related incubators.

To encourage the entrepreneurial activities among the students, the institute Director, Prof. T. G. Sitharam has constituted a committee headed by Dean, Industrial Interactions & Special Initiative (II&SI) to give course credit to the students for their entrepreneurial activities.

Speaking on the significance of the initiatives, Prof T.G. Sitharam, Director IIT Guwahati says, "As stated by our honourable Prime Minister we are in the golden era of start-up, being one of the leading institute for research and innovation, IIT Guwahati wishes to contribute to create start-up friendly ecosystem. I invite the entrepreneurs to join our Technology Incubation Centre and Research Park, where we provide not only the technical mentorship but also access to our resources and opportunities to work with our faculties and students to develop new technologies."

Also to commemorate the national start-up day, IIT Guwahati organized a special panel discussion on 'Success of a start-up: Opportunities and Challenges'.

TIC Incubation process: The start-up can apply through email inchargetic@iitg.ac.in. It will be evaluated by a committee. Based on the committee's recommendation, Dean, Industrial Interactions & Special Initiative who is the president of the council of management of TIC will approve the start-ups for incubation. Start-up has to choose a faculty mentor. An agreement will be signed. The incubation period will be up to 2 years

Research Park Incubation:

The start-ups, MSMEs, and others can apply online on the website <https://respark.iitg.ac.in/>.

Awards and honours



Prof. Sandip Paul, Department of Chemistry, IIT Guwahati has joined as an Editorial Advisory Board member of the Journal of Chemical Information and Modeling (JCIM) (an ACS publication).

Mr. Rajnandan Choudhury Das, Research Scholar, Department of Physics has been selected for the prestigious SHYAMA PRASAD MUKHERJEE (SPM) Fellowship in Physical Science based on his excellent performances in the CSIR-UGC-NET exam held in June - 2019, followed by the interview. This fellowship is awarded to toppers of CSIR-UGC JRF (NET) awardees to commemorate the birth centenary year (2000) of Dr. Shyama Prasad Mukherjee, who was the first Vice-President of CSIR in the Independent India; CSIR has instituted a special fellowship, namely, "DR. SHYAMA PRASAD MUKHERJEE (SPM) FELLOWSHIP".

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.

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.

IIT Guwahati Researchers Develop 3D Printing Technology to cut Concrete Use By 75%

Indian Institute of Technology Guwahati researchers (Dhrutiman Dey, Dodda Srinivas and Bhavesh Chaudhari) have developed a 3D printed urban furniture using construction material made from local industrial wastes.

Researchers from the Sustainable resources for Additive Manufacturing (SReAM) at IIT Guwahati have developed new cementitious mix compositions, amenable for 3D printing. The concrete printer jointly developed by IIT Guwahati and DELTASYS E FORMING is capable of printing components up to 1 m long, 1 m wide and 1 m tall. The complete cycle for 3D-printed urban furniture took about 20 minutes to complete.

Concrete 3D printing is gaining momentum in the building and construction industries. Recent developments in this field such as 3D printed modular houses, pedestrian footbridges, office buildings, public schools, low-cost toilet units have the potential to initiate a paradigm change in the practice of construction.

The IIT Guwahati Research Group used a specially-developed printable concrete containing industrial wastes as binders to build 3D printed furniture with a seating height of 0.4 m, a width of 0.4 m, and arch-shaped support that was modelled and sliced using SolidWorks and Simplify3D, respectively. The entire unit was printed layer by layer at an 80 mm/s speed, with each layer having a 10 mm height. After the unit was printed, it was covered by moist gunny bags for 7 days to cure before being used.

Traditionally, these structures were mold casted which requires more concrete material, labour, and formwork preparation. However, with 3D concrete printing, optimized designs are printed with 75 per cent less concrete and without the need of mold.

Speaking about this Research, Dr. Biranchi Panda, Department of Mechanical Engineering IIT Guwahati, said, "We showcased how material-efficient structures can be produced in our lab scale 3D printer. Our goal is to design high performance concrete mixes made from industrial wastes for printing of such complex structures."

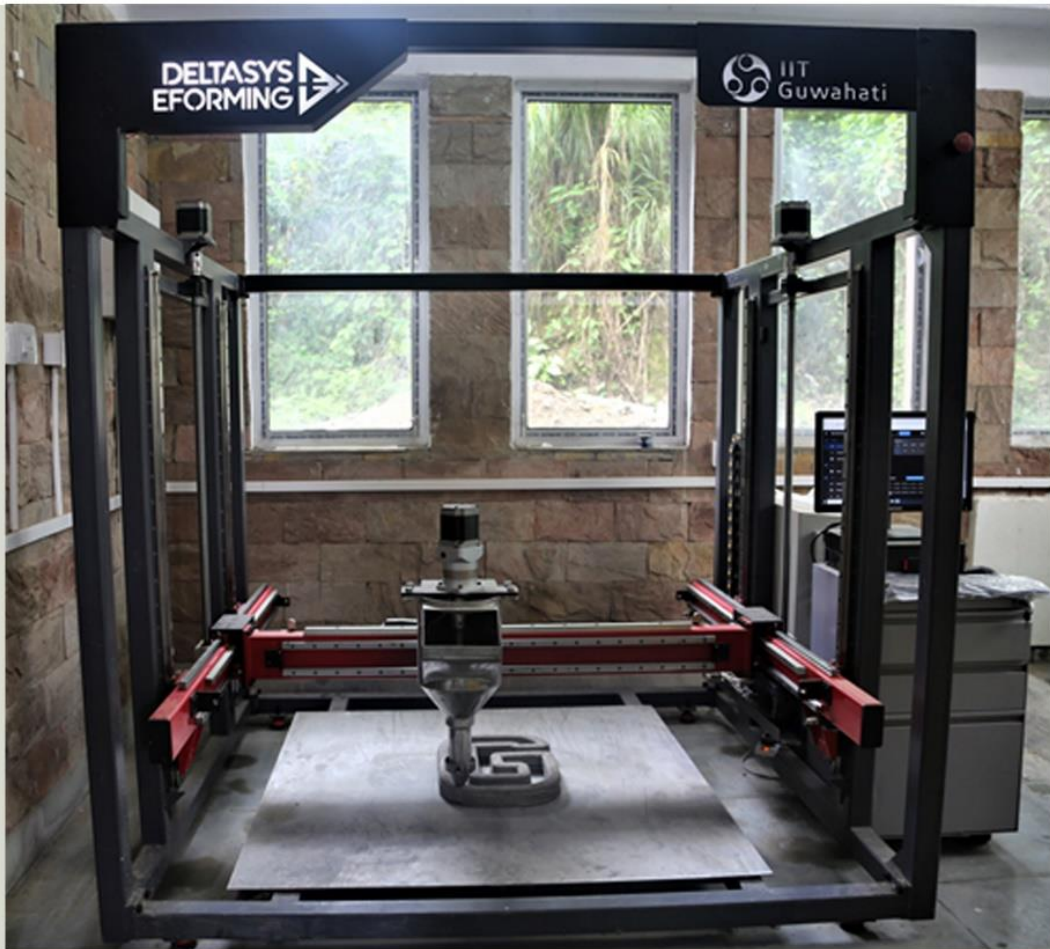
The team is now exploring underwater concrete printing and the possibility of printing functional reinforced concrete using low carbon materials. Developments related to process automation, advanced print head design are the ongoing project in the PI team, funded by the Department of Science and Technology (DST), India.

Highlighting the unique aspects of this research, Prof. T. G. Sitharam, Director, IIT Guwahati said, "3D printing of concrete can be a technological solution for reducing carbon footprint in building and construction industry. From Indian context, techno-economic analysis must be carried out that take into account not only the environmental sustainability but also aspects relating to cost, quality, labor, and maintenance associated with 3D printing."

The research team believes that the on-demand, on-site 3D concrete printing will definitely have a global impact on versatile construction applications and multi-billion-dollar market worldwide. The future jobs will be marshalled into design, automation, servicing, and maintenance of the digital systems.



From Left- DODDA SRINIVAS, PhD Scholar; Dhrutiman Dey, PhD Scholar; Bhavesh S. Chaudhari, Project Staff



The concrete printer jointly developed by IIT Guwahati and DELTASYS E FORMING



3D Printed Concrete furniture

IIT Guwahati Drones start-up part of Republic Day event

Drones developed by Indian Institute of Technology Guwahati start-up, Drones Tech Lab performed at a drone show at the Republic-Day event in Kamrup, the first of its kind in the north-east region.

The drones developed by IIT Guwahati start-up Drones Tech Lab have been successfully providing solutions in several domains such as disaster management, agriculture, survey, and mapping.

Drones Tech Lab, one of the start-ups at IIT Guwahati Research Park has been at the forefront, technologically and creatively, in promoting disaster management caused by Cyclone Amphan by offering drone technology to aid frontline workers.

Over the years, these drones have been notable for being instrumental in handling some main challenges in the North East and Eastern parts of India. First, Majuli has the issue of incessant flooding, which not only leads to loss of lives and properties but also erodes a significant part of the island. Secondly, the Kolkata Municipal Corporation faces dengue challenges every year, which results in the loss of lives as well.

To solve these problems, a drone-based mapping solution integrated with post-process kinematics was deployed to aid absolute accuracy and remove the need for GCPs (Ground Control Points) for absolute precision. With this drone solution, along with mapping payload and GIS (Geographical Information System) software, they covered 5 - 6 sq. km in one day compared to 1 - 1.5 sq. km if they had used traditional methods. Also, they deployed a combination of mapping drone and heavy payload drone solutions capable of spraying 10 - 16 liters of liquid over 6 - 7 acres of area uniformly within 9 - 10 minutes.

Speaking about the participation of IIT Guwahati start-up Drones Tech Lab, Prof. T. G. Sitharam, Director, IIT Guwahati mentioned that since the inauguration of the Drone Centre at IIT Guwahati, there have been several projects where the use of drones is sought for faster data collection, whether it is a land survey, river mapping, agriculture, and healthcare and disaster management. IIT Guwahati will maximize its efforts to provide drone-based services to the state and the region considering the difficult terrain. The present drone show at the R-day event will help in publicising this technology for the benefit of the masses.

Mr. Biswajit Dey, Drones Tech Labs, mentioned that he and his team were elated to be part of the Research Park at IIT Guwahati which has facilitated its participation R-day drone show event and other projects with the district authorities. We would like to provide drone services to the region with all the expertise available with us and expand our reach to all possible sectors. This will greatly benefit the population in enhancing various services in shorter time with higher efficiency.

Extending their solution portfolio to the domain of Survey and Mapping, Drones Tech Lab has catered to different markets encompassing several Indian States which includes Karnataka, Jharkhand, West Bengal, Assam, Meghalaya to name a few. The Survey and Mapping conducted finds applications in various domains which range from mining activities, wherein using drones the exact volume of mine can be assessed with absolute accuracy. Apart from that, one aspect wherein Drones Tech Lab has revolutionized the Survey industry is using their solutions to do various land surveys for different departments.

Drones Tech Lab, has, by using drones as a platform has designed solutions which finds many useful applications in the field of agriculture which is of immense importance as far as eradicating the pest issue at the ground level is concerned. Their drone based solution can identify and indemnify different pests at a pace of one hectare/4 hours using their custom build solutions which involves drone platform, multiple band sensors and AI based application tools. The concerned area of pestation is then sprayed with necessary fertilizers, again with their specially designed UAV/Drones for the North East Terrains, spraying only at the area of pestation, thereby eliminating pests entirely, with safety of crops and humans intact!





The drones developed by IIT Guwahati start-up Drones Tech Lab

IIT Guwahati researchers shed light on the mystery of dark matter using neutrinos

Indian Institute of Technology Guwahati Researchers have found distinctive similarities between the nature of Dark Matter and Neutrinos. In the endeavour to unfold the nature of dark matter, a trio of theoretical physicists, Professor of Physics Arunansu Sil and two of his Ph.D. students Arghyajit Datta and Rishav Roshan of IIT Guwahati, Physics Department find that the origin and production of dark matter can actually be connected to the origin of neutrino mass. The work has recently been published in the leading international journal, Physical Review Letters.

For decades, physicists speculate the presence of 'dark matter' in our Universe. Though its existence is inferred from its gravitational effect on visible matter, supposed to make up 27 % of the Universe, very little is known about it as no direct evidence in support of dark matter could be found so far indicating it as an exotic type of matter. At the same time, among all the known particles in nature, neutrinos are perhaps the most elusive particles. There are three flavours of neutrinos according to the Standard Model of particle physics, the immensely successful theoretical framework describing matter and interactions in nature. This Standard Model predicts the neutrinos as massless. However, during late 90's, it was found that neutrinos do have tiny mass, the exact magnitude of which is still unknown.

Neutrinos are somewhat distinctive from other particles in the Standard Model as it is the only fermion which is of 'left-handed' type, related to its spin projection. The mystery of neutrino mass may be related to the lack of its right-handed counterpart. In fact, the present work of the team shows that the lightest right-handed or sterile neutrino, provided it exists as a part of a popular neutrino mass generation mechanism, having a mass of order a kilo to a mega electron-volts can be the dark matter candidate.

Highlighting the unique aspect of their work, Prof. Arunansu Sil, Department of Physics, IIT Guwahati said, "Although strongly hinted by several astrophysical observations, the lack of any direct evidence of dark matter particles suggests that it has a very feeble interaction with ordinary matter. Our proposal provides a clue to such a miniature interaction by showing that its smallness is connected to the lightness of the neutrino mass (smallest one) which is uniquely predicted to be in the pico electron-volt range."

Arghyajit Datta added "Apart from explaining the dark matter and tiny neutrino mass, the same construction also addresses the third mystery: why there is more matter than anti-matter in the Universe? The two remaining sterile neutrinos, other than the dark matter one, in the model are responsible for such an asymmetry."

Rishav Roshan elaborated on it saying "We here take an interesting step ahead by showing for the first time that in fact the entire dark matter content of the Universe can be produced from the decay of the mediators of the weak force in nature and the Higgs boson in the early Universe and can easily obey cosmological bounds."

Prof. Sil explained the importance of the work saying "The work bridges the three most prominent and long-standing mysteries of particle physics and cosmology within the most minimal extension of the Standard Model which can be falsifiable in ongoing and future experiments."

Attempts were there in the past also to use such sterile neutrinos as dark matter; however, those are currently under severe constraints from the non-observance of X-ray signal and cannot satisfy the observed dark matter density due to the difficulty associated with their production in the early Universe.



Nobel Laureate Prof. Lars Peter Hansen delivers keynote speech at IIT Guwahati's 'Research and Industry Conclave- Integration 2022'

Indian Institute of Technology Guwahati and IIT Guwahati Research Park jointly organized the First edition of 'Research and Industrial Conclave (RIC) - Integration 2022' which was organized from 20th to 23rd January to strengthen the academic and industry interactions.

The Students' Academic Board (SAB) under Academic Affairs was a key organizer on behalf of IIT Guwahati. A set of nine events were held under the banner of RIC-2022, including research presentations, start-up pitching and fundraising, panel discussions on topics of social and scientific relevance, and immersive workshops.

Inaugurating the Conclave on 20th January 2022, Prof. T. G. Sitharam, Director, IIT Guwahati, highlighted the objectives of the first-ever Research and Industrial Conclave Integration 2022 and the steps taken by IIT Guwahati to boost industrial interactions, entrepreneurship, research and innovations.

Speaking on the occasion, Prof. S. K. Kakoty, Deputy Director, IIT Guwahati, pressed upon the need for a closer relationship between academia and industry.

The Chief Guest of the ceremony was the renowned economist and Nobel Laureate Prof. Lars Peter Hansen who delivered an insightful lecture on the macroeconomic consequences of uncertain climate change.

Eminent dignitaries including the Dean of Academic Affairs, Dean of Industrial Interactions and Special Initiatives (II&SI), the Chairpersons of IIT Guwahati Technology Incubation Centre and SAB IITG, and the conveners of RIC 2022 made their brief address.

Five distinguished institute speakers engaged with the participants for the next three days, sharing collaborative problem-solving experiences from various industries.

Prof. V Ramgopal Rao, Director, IIT Delhi, spoke with attendees to connect academic R&D with product requirements and fulfil Atma Nirbhar Bharat's needs.

Dr. Bhupati Kumar Das, former Managing Director of Numaligarh Refinery Ltd, spoke about the

prospects and challenges in promoting industry-academia collaborations. On the following day, Padmashree recipients Dr. Kunal Konwar Sarma and Dr. Anil Gupta delivered a lecture on 'Human-Elephant Conflict Mitigation: Some Thoughts' and 'Encountering the Dominant Research Trends: Outliers, Deviants and Disruptors', respectively. Prof. Subimal Ghosh's lecture was on the topic 'Global and Regional Climate Change and Improving Climate Services.'

The Scientific event witnessed a spirited competition among over 400 young researchers from across the country, who presented their work in the oral, poster, and three-minute thesis formats. Nearly fifty competitors emerged as winners from diverse departments and specializations and were awarded certificates and cash prizes worth INR 1 Lakh.

In addition, a select range of twenty-five speakers invited by different departments of the institute presented talks on pertinent issues and scientific advancements. Department of Biotechnology, Gov. of India funded North East Center for Biological Sciences and Healthcare Engineering (www.iitg.ac.in/necbh), IIT Guwahati organized workshops on patent filing, research article writing, deep learning, and artificial intelligence by acclaimed experts from the respective fields were also part of the four-day endeavour.

Shri. Bhaskar Jyoti Phukan, Director (Technical), Numaligarh Refinery Ltd inaugurated the industrial vertical of the Conclave by innovative virtual lighting of the lamp and talked on the need for innovation in green energy. The NewGen IEDC, IIT Guwahati organized a hackathon and panel discussions on the sector such as e-mobility, agriculture, healthcare, food technology and entrepreneurship.

The one-month entrepreneurship development program that was organized as pre-conclave by NewGen, IEDC, IIT Guwahati partnering IIT Guwahati Technology Incubation Center ended with a start-up pitching. As post conclave activity, the IndSol program, which provides an opportunity for academicians and innovators to work on industrial problems will continue.

The Conclave came to a successful conclusion with the valedictory ceremony held on 23rd January, where Prof. Anupam Saikia - the first Chairman of SAB - recollected the experience of organizing the first research conclave in 2015. Prof. Biman B Mandal,

Prof. K. V. Krishna, and Prof. P. Muthukumar felicitated the winners. Prof. Nelson Muthu and Prof. Ganesh Narayan shared the RIC 2022 journey milestones. Prof. G. Krishnamoorthy Dean, II&SI, IITG and Professor-in-charge of the research park lauded the contribution of everyone, in particular the students, in successfully organizing the first-ever RIC Integration 2022. He further stated for the first time, IITG and IITG research park partnered with industry (NRL), banker (Canara Bank), industrial federation (FICCI), society (IIT Guwahati Technology Incubation Center), Council (ASDC) and Start-up India to organize an event and the partnership will be strengthened further to fulfil the society's need. RIC 2022 was a milestone in promoting interdisciplinary collaborations among multiple stakeholders of scientific progress, including researchers, industries, and government agencies. The institute is eager to hold versions of the Conclave in the upcoming years.



A Panel Discussion on the occasion of National Start-up Day on 17 January 2022 with the theme "Success of a Start-up: Opportunities and Challenges"



A 'Covid-19 Vaccination Center for Children" was inaugurated by Prof. A. Srinivasan, Interim Registrar of IIT Guwahati in presence of Prof. P. K. Iyer, Dean Public Relations, Branding and Ranking and others functionaries of the Institute on 4 January 2022 for children of age between 15 to 18 Years.



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