

## MEDICAL



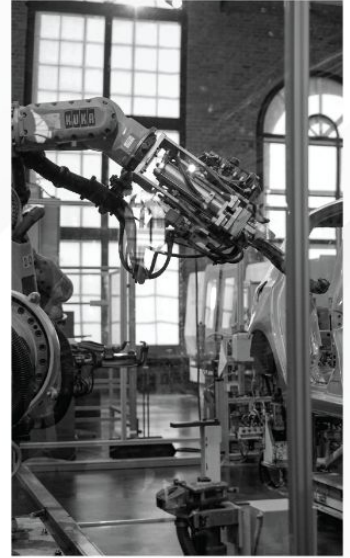
## AGRICULTURE

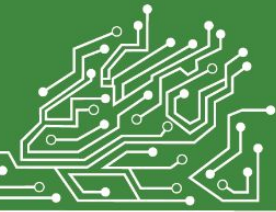


## INDUSTRY



## DEFENCE





सत्यमेव जयते

डॉ. एस. चंद्रशेखर  
Dr. S. Chandrasekhar



सचिव  
भारत सरकार  
विज्ञान एवं प्रौद्योगिकी मंत्रालय  
विज्ञान एवं प्रौद्योगिकी विभाग  
Secretary  
Government Of India  
Ministry of Science and Technology  
Department of Science and Technology

It is indeed a matter of great pleasure and privilege to extend grand wishes to IIT Delhi on the second anniversary of its Technology Innovation Hub (TIH) i.e. I-Hub Foundation for Cobotics (IHFC), which is being celebrated on June 13, 2022. It is heartening to see IHFC emerging as one of the active TIHs amongst the 25 TIHs created under the national Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) of the Department of Science and Technology, Government of India.

It is learnt that currently, IHFC has 23 on-going projects which includes 7 Grand Projects (GPs) in the areas of Rehabilitation Robotics, Healthcare Robotics, Medical Simulation, Human-Robot Interaction, Industry 4.0+, Intelligent Systems and Secured Communications. I am sure such GPs, with an expert professor for each of those as a coordinator, will make the group strong enough for any R&D to be undertaken under the respective area of research. The team at IHFC and the talent created therein would be able to contribute to the startup ecosystem of the country, thus helping in Nation building and contributing to the dream of India becoming "Atmanirbhar Bharat"

Best wishes for the 4th edition of the IHFC Newsletter "Cobotics News"



(S. Chandrasekhar)

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## Message from Director, IIT Delhi

I have great pleasure in writing this message for the 4th Cobotics News of IHFC, IIT Delhi. During the last two years Team IHFC has established its catalytic role in the domain of Cobotics by funding seven Grand Projects (GPs) with 23 individual projects from across the country led by twenty individual Institutes. We have also entered into a collaboration with the National Science Foundation (NSF) of the USA to have joint supplementary funding. This should strengthen our innovation ecosystem. IHFC is planning two state-of-the-art facilities in Medical Robotics and Drone Technologies. I am confident that these facilities would encourage doctors, technologists, and researchers to develop new ventures based on medical simulators and drone-based hardware and software.

Through IHFC, we can see the emergence of new technologies and ventures that can lead to post-pandemic growth and prosperity.



Prof. Rangan Banerjee

Director  
IIT Delhi

## Message from Project Director, IHFC

We are almost out of the COVID pandemic and started interacting physically by visiting all institutes from where we have about 23 Principal Investigators (PI). I personally visited few of those, namely, IIT Madras, Dr. MGR Educational and Research Institute, Chennai, IIT Kanpur, and IIIT Allahabad. They were very much enriching personally in terms of seeing what the PIs are doing to achieve their targets. We were able to see their facilities and other activities which would enable IHFC in future to tap other resources as well. For example, IHFC may be ready to invest in some of the good start-ups, etc. As a continuation of our research funding, I am also happy to share that we got about 20 proposals under NSF-IHFC joint call for supplement funding. While the approved projects will benefit directly from the additional fund for the exchange of knowledge, students, and faculty between the two countries, others will be able to continue interacting with their US counterparts using IHFC fund. In terms of our MCC (Medical Cobotics Centre) with IIIT Delhi and DTP (Drone Technology Park) at our Sonipat campus, we are moving with full swing, which should be ready in the next couple of months. I am quite confident that we will be able to report some successful events in our next newsletter. Finally, I am happy to share that IHFC moved to a new office located at the Research and Innovation Park of IIT Delhi's Hauz Khas Campus, a newly constructed state-of-the-art facility in the heart of the city of New Delhi. Let me invite all of you who are interested with our Technology Innovation Hub on Cobotics that was incorporated as a Section-8 (non-for-profit) company on June 13, 2020.

Jai Hind!



**Prof. Subir Kumar Saha**

Project Director, IHFC and  
Professor, Dept. of Mechanical  
Engineering, IIT Delhi

## Message from CEO, IHFC

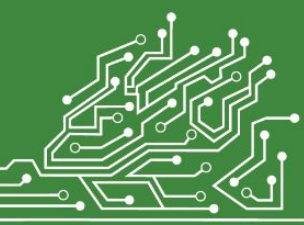
When I look at the year gone by, it really fills me with hope for the wonders which will be happening at IHFC. The year 2022 has begun with much gusto with some collaboration and partnerships being established with some of the best in the industry in the arena as well medical, AI, ML, and robotics. The pandemic situation taught us a lot and most of all it taught us how human intervention along with machines is a must for smooth functioning across all arenas of life. The year 2021 saw us forging some fantastic associations and partnerships sad launching some great programs in this space. With our latest alliance with some of the best collaborations with global players in their fields to expertise in ML, AI, and cobotics to getting an honourable mention in the White House press release as one of the main chosen hubs for this project by the government. It's been major coup for IHFC. This year we are looking at incubating many more start-ups and the latest being one in the EduTech arena with Rancho Labs. The TRYST festival of Technology and Management gave us a huge insight as to what the future generations of India are going to bring to the table in the future. To elaborate the importance of how technology should become an integral part of our learning from school itself, IHFC has also collaborated with CISCE and BOE to co-collaborate and recreate the syllabus for schools including cobotics and robotics as major areas of study for the young gen. All this has just geared us up further to invite more related start-ups and innovations. We are planning to have at least 10 -17 start-ups incubated with us by end of this year and our aim is to grow 3 times with each passing year and offer the industry innovative products and services that will be beneficial to mankind. Lets co-innovate together.



**Mr. Ashutosh Dutt Sharma**

Chief Executive Officer (CEO)  
IHFC, IIT Delhi





## IHFC collaborates with National Science Foundation (NSF), USA



In a fantastic collaboration, I-Hub Foundation for Cobotics (IHFC) - Technology Innovation Hub (TIH) of IIT Delhi and National Science Foundation (NSF), USA have joined hands together for the joint progress of activities under TIH of IIT Delhi and NSF. The main areas of focus is to expand frontiers in Collaborative Robotics (Cobotics) research and development. NSF will provide supplemental funding to the selected Principal Investigators (PIs), who would submit a plan for doing meaningful research and development along with one of the IHFC Principal Investigators in the technology domain of Cobotics. NSF released a Dear Colleague Letter (DCL) to this effect on February 7, 2022. IHFC Principal Investigators will collaborate with NSF on seven Grand Projects in the following technology/applications domains: (1) Drone Applications, (2) Healthcare Robotics, (3) Human-Robot Interaction, (4) Industry 4.0 & Beyond, (5) Intelligent Sensing & Secured Communications, (6) Rehabilitation Robotics, (7) Medical Simulators. The following are the key highlights of the collaboration:

- NSF, USA, and Indo-U.S. Science and Technology Forum (IUSSTF) jointly organized a two-day workshop with IHFC on March 15 and March 22 to facilitate the interaction between the PIs from IHFC and NSF.
- IHFC and NSF jointly received 19 joint applications from IHFC and NSF PIs by April 25, 2022.
- All applications are being reviewed by the expert committee at IHFC
- A joint evaluation has been organized by NSF and IHFC on May 27, 2022, to finalize the list of proposals to be funded.



**Technology Innovation Hubs (TIHs) of India discussed during the meeting between Prime Minister of India, Sh. Narendra Modi and President of USA, Mr. Joe Biden at Tokyo.**

The details of the talk are available on this link: <https://www.whitehouse.gov/briefing-room/2022/05/24>

## CoboTalks: A Monthly Seminar Series

1 12th Jan 2022



**Dr. Chinmoy Bhattacharya**  
Retd. Scientist  
DRDO

**Title:** Frequency Modulated Continuous Waves (FMCW) - A new paradigm for radar sensors

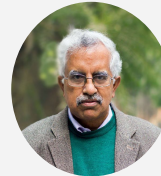
2 9th Feb 2022



**Prof. Jayanta Mukhopadhyay**  
Dept. of CSE,  
IIT Kharagpur

**Title:** Healthcare as Homecare

3 9th March 2022



**Prof. M. Balakrishnan**  
Dept. of CSE,  
IIT Delhi

**Title:** Mobility Challenges of Visually Impaired in Unstructured Public Spaces

4 13th April 2022



**Prof. Dinesh Manocha**  
Dept. of CSE,  
Univ. of Maryland

**Title:** Robot Operations in UnControlled Environments

5 11th May 2022



**Prof. Emilia Fridman**  
Dept. of EES,  
Tel-Aviv Univ.

**Title:** Using Delays for Control

**Meeting held between IHFC, IIT Delhi and key stakeholders to understand the role of IHFC in incubating the country's future unicorns**

## iCoboTalks: A Monthly Industrial Seminar Series

1 16th Feb 2022



**Dr. Chayan Sarkar**  
Scientist,  
TCS Research

**Title:** Natural Language Task Understanding for an Embedded Agent

2 16th March 2022



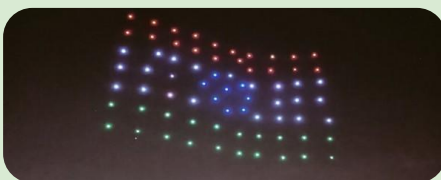
**Mr. Tanmay Bunkar**  
Co-Founder,  
Botlab Dynamics

**Title:** Precision Flying with 1000 Drones

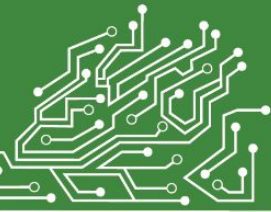


**Women's Day celebrated by IHFC**

**IHFC supported Botlab Dynamics for its 1000 drone light show on Republic Day**







**Prof S.K. Saha**, Project Director, IHFC said, “We are delighted to join hands with the CISCE for developing syllabus for robotics and AI for schoolchildren in India.”

**Ashutosh Dutt Sharma**, CEO, IHFC, while emphasizing the need to build the country’s capability in robotics and upcoming technologies, said the IHFC’s endeavour was to reflect the principles of experiential learning and theory aspects while developing the curriculum.

## IHFC join hands with CISCE for designing school curriculum

The Council for the Indian School Certificate Examinations (CISCE), a school education board, signed a memorandum of understanding (MoU) last month with the I-Hub Foundation for Cobotics (IHFC) to design a curriculum for schools affiliated with the CISCE in upcoming technologies. Subjects such as robotics, artificial intelligence (AI), machine learning (ML) and data science will be introduced at ICSE (Classes 9 and 10) and ISC (Classes 11 and 12) levels. The IHFC will help CISCE by using its expertise to revamp the current STEM courses, for reinforcing these 21<sup>st</sup> century skills, which is in line with the New Education Policy launched by the Ministry of Education, Government of India. It is expected that the students will appear in exam with these new subjects in Indian Certificate of Secondary Education (ICSE) in 2025 and in Indian School Certificate (ISC) in 2026, as informed by secretary, CISCE. IHFC may also play a key role in executing the same in more than 2700 schools affiliated to CISCE and provide them with guidance to implement the same.



## IHFC partnered with SoSe for school curriculum design

IHFC recently has partnered with **Schools of Specialized Excellence (SoSe)** to develop a revised curriculum which is more in tandem with the current education needs for the students. The need today is for all students to be adept in the subject of Robotics, Automation, Machine Learning etc. With this in mind, SoSe has put IHFC in-charge of redesigning the syllabus which will be more progressive and industry-relevant in terms of Robotics and Automation. The whole idea is to curate teaching material and content for ease of learning for students and teachers.



## MoU signed with Medekom for Medical Cobotics Center

IHFC, the Technology Innovation Hub of IIT Delhi and Medekom Ventures Private Limited signed an MOU to collaborate to develop India’s first Medical Cobotics Center (MCC). This center will provide a platform for front-line healthcare staff, doctors and surgeons to experience and practice on simulation equipment to handle medical emergencies. This MCC will bring more engagements and innovations towards cost-effective and efficient products in the medical stream. This is our next big leap in jumpstarting Cobotics in Indian Healthcare.



## MOU signed with eClerx for automation solutions

IHFC, the Technology Innovation Hub of IIT Delhi and eClerx, a global leader in business process management, change management and data-driven insights supported by intelligent automation, recently forged a mutually beneficial alliance to jointly invest and co-create innovative solutions in the area of Artificial Intelligence/ Machine Learning, Intelligent Automation, and Mobility Solutions. The joint efforts will focus on building solutions in the area of image recognition, speech recognition, natural language processing, text mining, and intelligent automation. eClerx looks at this as an opportunity to leverage the skillsets and resources of IIT Delhi to augment its product stack and provide cutting-edge solutions to its clients. Apart from these above-mentioned technologies, the partnership will also explore advancements in data engineering, blockchain and metaverse to build customer-relevant IPs. An MOU was signed in the eminent presence of Prof Subir Kumar Saha, Mr. Ashutosh Dutt Sharma, Mr. Narender Gaur representing IHFC and Mr Sanjay Kukreja representing eClerx, to this effect.



## IHFC partnered with TRYST, Technology Festival of IITD

I-Hub Foundation for Cobotics (IHFC) collaborated with TRYST 2022, the Technology Festival of IIT Delhi as its innovation partner. As part of its efforts to establish Drone Technology Park, IHFC sponsored the featured event Indian Drone Racing League (IDRL). The event attracted drone pilots, enthusiasts, youth, and members of the drone industry. As part of the engagement, IHFC reached out to the youth and talked about Cobotics (Collaborative robotics) under the NMICPS and other establishments of IHFC. The activities and initiatives of IHFC were shared with TRYST participants, which includes, briefing on the Grand Projects, pre-seed incubation program, CoboTalks and skill development.



## IHFC New Office

## IHFC opened its new office at Research and Innovation (R&I) park of Indian Institute of Technology, Delhi.

The office opening was attended by all key members and the inauguration was done by IHFC CEO, Mr. Ashutosh Dutt Sharma in a traditional Indian way by seeking the blessings of Lord Ganesha.

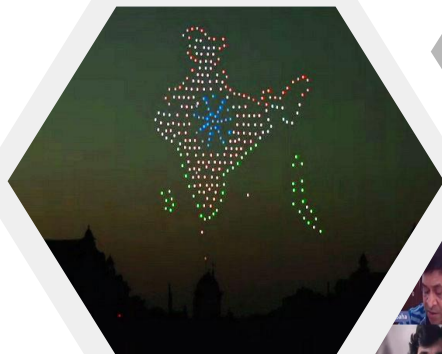




IHFC



SoSE



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