

INOX Group and IISc sign MoU for setting up of INOX Quantum Materials Lab

The partnership would advance research in the fields of semiconductor and quantum technologies, driving innovation in academia & industry

The Lab would house a Molecular Beam Epitaxy unit that would be commercialized, for creating fault-tolerant quantum material, making the research affordable and accessible

The research would reduce reliance on costly imported equipment and help develop skilled talent in the country, strengthening its position globally

INOX Group's ventures - INOX Air Products and INOX India Ltd – will contribute towards the development of the Lab as a CSR initiative

Mumbai, 16th October 2024. INOX Group, a diversified Indian conglomerate, and Indian Institute of Science (IISc), India's premier scientific research institution, have signed a Memorandum of Understanding for setting up of INOX Quantum Materials Lab. The Lab would come up at the Centre for Nano Science and Engineering facility at IISc. The Lab is set to focus on the development of topological semiconductors, a critical material for achieving fault-tolerant quantum computing, which will enable the creation of robust and error-resistant quantum states, which holds key to the future of Quantum technology.

With an aim to build an indigenous Molecular Beam Epitaxy (MBE) unit that would be commercialised, the Lab would mark a significant leap towards making advanced semiconductor and quantum technology more accessible and cost-effective in the country. The initiative would address the high cost involved in importing equipment, but would also foster the development of skilled human resources in India. The endeavours would not only benefit the semiconductor industry, but would also further the research around quantum technology, topological insulators, epitaxial ferromagnetic semiconductors, and other quantum materials. IISc would also offer internship opportunities to undergraduates from premium institutes carrying out research in related fields. The Institute would also conduct annual workshops on quantum technologies, besides encouraging publication of research papers and participation in global conferences. Over and above the research, the contribution made by INOX Group would be comprehensively used for developing the lab infrastructure, to development of individual tools, and ensuring technology transfer for the benefit of the industry, as well as society.

Commenting on the development, **Siddharth Jain, Director – INOX Group** stated, "At INOX, we believe in the power of innovation and its ability to drive future progress. Our contribution towards building the INOX Quantum Materials Lab at IISc Bangalore reflects our commitment to advancing scientific research and supporting India's leadership in cutting-edge quantum technology, and allowing it set new benchmarks and trends. Would like to express my gratitude towards IISc for giving us this opportunity to play a role in advancing country's intellectual prowess in futuristic technologies. We are feeling immensely proud about the prospect of working closely with an Institute, which has nurtured some of the brightest and the most erudite Indian science scholars the world has seen."

Professor Srinivasan Raghavan, Chair of CeNSE at IISc, stated, "In line with our motto, 'from science to systems to society,' we are thrilled to partner with INOX Group to build a Molecular Beam Epitaxy unit which would be commercialised. This collaboration marks a significant step in making advanced technologies more affordable and accessible, while driving research in quantum technology and materials. With INOX Group's support, we will enhance our lab infrastructure, develop essential tools, and promote technology transfer, ultimately benefiting both industry and society."

INOX Group's ventures - INOX Air Products and INOX India Ltd – will contribute towards the development of the LAB as a CSR initiative. INOX Air Products is India's largest industrial gas manufacturing company, while INOX India Ltd is a leading global manufacturer of cryogenic equipment and solutions. Through their products and solutions, both companies are playing a pivotal role nationally and globally, towards building the application of Quantum technology and strengthening the semiconductor industry.

About INOX Group

INOX Group is a diversified Indian conglomerate with activities spanning Manufacturing Industrial & Medical Gases, Cryogenic Equipment, LNG Storage & Distribution Equipment as well as the largest Movie Cinema chain in India, PVR INOX. The Group has a track record of contributing to the nation by building successful and sustainable business over the past eight decades, distinguished by integrity, delivery and good governance. The Group employs more than 10,000+ individuals at 200+ business units across India, through its Companies, INOX Air Products, INOX CVA and PVR INOX Ltd. Read more about the Group on www.inoxgroup.com

About CeNSE:

The Centre for Nano Science and Engineering (CeNSE), established in 2010, is dedicated to advancing interdisciplinary research at the nanoscale. The center focuses on a wide range of areas including materials science, electronics, MEMS/NEMS, photonics, nano-bio, brain-inspired computing, quantum technologies, and solar cells. CeNSE invites individuals with innovative and transformative ideas to visit and collaborate with its faculty, welcoming partnerships from both academia and industry.

CeNSE is home to the National Nanofabrication Centre (NNfC), a cutting-edge facility that features 14,000 square feet of class 100/1000 cleanrooms. Additionally, it hosts the Micro Nano Characterization Facility (MNCf), which offers comprehensive electrical, optical, mechanical, and material characterization capabilities. The Packaging and Systems Facility (PASf) provides the infrastructure necessary to package fully processed MEMS wafers into functional devices. These national user facilities are accessible to external researchers at affordable rates, fostering wider collaboration.

CeNSE's faculty includes 19 core members and over 40 associate members from various departments at IISc. Through its Industry Affiliate Program (IAP), CeNSE connects with industry partners to address complex challenges, establish collaborative research initiatives, and develop technologies and skills in nanoscience and engineering. The program also facilitates access to the center's centralized research facilities and resources. For more information, visit www.cense.iisc.ac.in

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