IIT Madras and Mphasis collaborate to accelerate applied research in Quantum Computing

Mphasis grants Rs. 21 Crore to IIT M for fundamental and applied research in quantum technologies and to set up a Quantum Lab, that address real-world business and societal challenges

Chennai, 22 July, 2022

Indian Institute of Technology Madras and Mphasis an information technology (IT) solutions provider specializing in cloud and cognitive services, sign a Memorandum of Understanding (MoU) to:

- Create a hub for quantum science and technology that produces top-quality graduates
- Promote fundamental and applied research in quantum technologies
- Democratize access to education in quantum technologies
- Assist start-ups aligned to relevant domains and
- Develop and attract talent to the quantum ecosystem by offering a limited number of high-value top-up scholarships to students who excel in research
- Support higher education and students whose research in quantum science and specific quantum architectures will be recognized and have a significant societal impact.

This initiative is funded by Mphasis F1 Foundation, (the CSR arm of Mphasis) with a grant of Rs. 21 crores over five years. Countries all over the world are increasingly seen investing in Research & Development (R&D) in the field of Quantum. The partnership will fortify India's leadership in quantum information, develop comprehensive training, and create quality resources for education and training in quantum computing. Together, IIT M and Mphasis, would enable the development and attraction of talent to the quantum ecosystem by offering a limited number of high-value top-up scholarships to students who excel in research, full-time foreign students, and post-doctoral researchers, who will be offered globally competitive remuneration along with accessible and curated course materials.

Additionally, the collaboration will democratize quantum learning through training programs tailored to specific industries, online certification programs through the National Programme on Technology Enhanced Learning (NPTEL), and continuing education through IITM's web enabled MTech program on Quantum Science and Technology (QuST). "This partnership will create a consortium of Government, Academia, and Industry that will focus on research, bringing together multidisciplinary teams to solve challenges currently limiting the industrial applications of quantum science and technologies. This hub or quantum centre will also collaborate with global universities and disseminate its research findings through workshops, peer-reviewed papers, and conferences," said, **Prof. Mahesh Panchagnula, Dean (Alumni and Corporate Relations), IIT Madras.**

"Quantum technology is at the brim; revolutionizing Quantum computing, sensing, and communication is leading to the emergence of new businesses and business models. Our collaboration with IIT Madras and the Government of India will enable us to harness the vast potential of quantum computing, enabling top capabilities and skills development for the future," said **Srikanth Karra, Chief Human Resources Officer (CHRO), Mphasis.** "The collaboration tangibly demonstrates our ambition to bring the most innovative, breakthrough solutions and invest in capabilities early on to

stay ahead of the curve. Building a cohesive industry for quantum computing necessitates a concentrated effort to develop the ecosystem across sectors and that is what we aim to achieve with our partnership," he added.
Elaborating on the projects to be taken up by this program, **Prof. Anil Prabhakar, Department of Electrical Engineering, IIT Madras,** said, "Over a period of five years, the research will primarily focus on the expanses of Quantum Optimization, Quantum Finance, Quantum Chemistry, Quantum Communication, Quantum Error Correction and Quantum Tomography. The lab built through this partnership will harness the potential of quantum technologies and uncover the areas expected to achieve early gains with quantum computers and migrate real-world use cases onto quantum computers. It will also evaluate the societal needs and consequences of having access to quantum computers and employ quantum computers for basic research".

With this core objective, an 'Industry-Academia Conclave' was also organized today (22nd July 2022) – as one of many events under this partnership, bringing together various stakeholders in Quantum Technology, witnessing participation from Pfizer, Goldman Sachs, KLA, Mphasis, Larsen & Turbo Infotech (LTI), IBM amongst others.
At this industry-academia conclave, leading companies focused on the emerging field of quantum computing and academic researchers working in quantum, exchanged information and ideas, helping each other understand market demand and research developments, respectively. Academic research in this domain is now becoming increasingly relevant and valuable to the ecosystem thus paving way for greater involvement by technology companies in applied research.

"Mphasis is at the forefront in using quantum computers for machine learning, optimization, and simulation problems. We envision quantum computing as a significant driver in solving future business problems. The research focus would be around the domains of information, communication, and computing. It will bring together faculty from different engineering and science disciplines and focus on enhancing industrial applications of quantum science and technologies," said **Ramanathan Srikumar, Chief Solutions Officer, Mphasis.**

"The law allows CSR funds to be deployed in scientific research. While some CSR initiatives may provide immediate gratification, they may not provide sustainable results in the long-term. Investing in socially relevant scientific research will lead to outcomes that can have a structural impact and will benefit a larger number of people in the long run. Mphasis certainly recognizes this, and we are grateful to them for taking this very progressive step as part of their CSR agenda," said **Kaviraj M G, Chief Executive Officer, Office of Institutional Advancement- IIT M.**

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About Mphasis

Mphasis' purpose is to be the "Driver in Driverless Car" for Global Enterprises by applying next-generation design, architecture, and engineering services, to deliver scalable and sustainable software and technology solutions. Customer centricity is foundational to Mphasis, and is reflected in the Mphasis'Front2Back™ Transformation approach. Front2Back™ uses the exponential power of cloud and cognitive to provide hyper-personalized (C=X2C2TM=1) digital experience to clients and their end customers. Mphasis' Service Transformation approach helps 'shrink the core' through the application of digital technologies across legacy environments within an enterprise, enabling businesses to stay ahead in a changing world. Mphasis' core reference architectures and tools, speed and innovation with domain expertise and specialization, combined with an integrated sustainability and purpose-led approach across its operations and solutions are key to building strong relationships with marquee clients. Click hereto know more. (BSE: 526299; NSE: MPHASIS)

ABOUT IIT MADRAS

Indian Institute of Technology Madras (IITM) was established in 1959 by the Government of India as an 'Institute of National Importance.' The activities of the Institute in various fields of Science and Technology are carried out in 16 academic departments and several advanced interdisciplinary research academic centres. The Institute offers undergraduate and postgraduate programmes leading to B.Tech., M.Sc., M.B.A., M.Tech., M.S., and Ph.D., degrees in a variety of specialisations. IITM is a residential institute with more than 600 faculty and 9,500 students. Students from 18 countries are enrolled here. IITM fosters an active entrepreneurial culture with strong curricular support and through the IITM Incubation Cell.

Recognized as an Institution of Eminence (IoE) in 2019, IITM has been ranked No.1 in the 'Overall' Category for the fourth consecutive year in India Ranking 2022 released by National Institutional Ranking Framework, Ministry of Education, Govt. of India. The Institute has also been ranked No.1 in the 'Engineering Institutions' category in the same Rankings for seven consecutive years – from 2016 to 2022. It was also adjudged as the 'Top innovative Institution' in the country in Atal Ranking of Institutions on Innovation Achievements (ARIIA) in 2019, 2020 and 2021. ARIIA Ranking was launched by the Innovation Cell of Ministry of Education.

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