

IIT Madras joins IBM Quantum Network

- The first Indian institution to join the IBM Quantum Network

- IIT Madras to advance quantum computing skill development and research for the industries in India

CHENNAI/BENGALURU, INDIA, SEPTEMBER 12, 2022 - IBM today announced that [Indian Institute of Technology Madras](#) (IIT-Madras) becomes the first Indian institution to join the IBM Quantum Network to advance quantum computing skills development and research in India. As a member of the IBM Quantum Network, IIT Madras will get cloud-based access to IBM's most advanced quantum computing systems and IBM's quantum expertise to explore practical applications, and realize the wide-ranging benefits of this technology for business and society.

IIT Madras' Centre for Quantum Information, Communication and Computing (CQuICC) will focus on advancing core algorithms in research areas like Quantum Machine Learning, Quantum Optimization, and applications research in finance. They will use IBM Quantum services alongside the open-source Qiskit framework to explore areas such as quantum algorithms, quantum machine learning, quantum error correction and error mitigation, quantum tomography, and quantum chemistry, and to also advance and grow the quantum computing ecosystem in the country. Researchers from IIT Madras will contribute to the advancement of research in the application of quantum computing with support from IBM Research India in such domains that are relevant to India.

The field of quantum science and technology is a cutting-edge area of research at IIT Madras. At CQuICC, IIT Madras focuses on developing various facets of quantum technologies including secure quantum communications, quantum sensing and metrology, as well as quantum computing and quantum information theory.

"This collaboration with the IBM Quantum Network marks an exciting new phase for our Center. It builds on our successful collaboration on quantum computing education, last year, and promises to open up new avenues and directions for research and innovation," said Dr. Anil Prabhakar, professor, Department of Electrical Engineering, IIT Madras.

"Becoming a part of the IBM Quantum Network will provide our faculty direct access to state-of-the-art quantum hardware and software. It enables us to use our interdisciplinary expertise to tackle some of the challenging problems in the domain of quantum computing today. In short, it gives us a unique opportunity to play an active and direct role in this quantum revolution of our times," said Dr. Prabha Mandayam, associate professor, Department of Physics, IIT Madras.

"We welcome IIT Madras to the IBM Quantum Network. This is an exciting time for us to work together and leverage each other's expertise to drive breakthroughs in the field of quantum computing. The collaboration will

open new avenues to work with industry partners to accelerate research, make quantum real and create a vibrant quantum ecosystem in India. We believe the joint work will contribute towards India's National Mission on Quantum Technologies and Applications to grow and prepare India for the future, further advancing India as one of the global powerhouses in computing," said Mr. Sandip Patel, managing director, IBM India.

IBM and IIT Madras have a long association in education and research areas like Artificial Intelligence and Machine Learning. Last year, IIT Madras joined IBM's Quantum Education Program to provide its students and faculty access to IBM quantum learning resources, quantum tools, and quantum systems for education and research purpose. In August last year, IBM Quantum and IIT Madras also jointly offered a course on quantum computing on the NPTEL Platform to over 10,000 participants.

IIT Madras joins more than 180 members of the IBM Quantum Network, a global community of Fortune 500 companies, start-ups, academic institutions, and research labs working with IBM Quantum technology to advance quantum computing and explore practical applications. The IBM Quantum team and its global ecosystem of network organizations are researching and exploring how quantum computing will help a variety of industries and disciplines, including finance, energy, chemistry, materials science, optimization, and machine learning.

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 specializations. 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 the Atal Ranking of Institutions on Innovation Achievements (ARIIA) in 2019, 2020 and 2021. ARIIA Ranking was launched by the Innovation Cell of the Ministry of Education.

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About IBM

For more information, visit: <https://research.ibm.com/quantum-computing>.

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