IISc Quantum Technology Initiative (IQTI)

The IISc Quantum Technology Initiative (IQTI) is a dedicated multi-disciplinary effort to indigenously develop various aspects of QT. It has brought together around 40 faculty members---physicists, material scientists, engineers, and computer scientists---for this purpose. IISc has been at the forefront of helping India develop past strategic missions (Indian nuclear technology and space technology programs were conceived and nurtured at IISc). It is in a similar position to lead India's effort in the practical implementation of Quantum Technology, with emphasis on the computing and sensing domains.

Focus on both short- and long-term quantum products

Combine service and in-house R&D at IISc

Accomplishments in in-house Quantum R&D

- *Development of a 4-qubit superconducting transmon quantum processor, with a coherence time ~ of 100μs. It can become part of a national training facility.*
- *Development of a van der Waals tunnel junction-based true random number generator on a chip (high-speed 0.16Mbps, room-temperature, record high min-entropy 0.983).*
- *New genre photon sources and detectors*
- *NV-center-based sensors, photonic waveguides on a chip, QKD with chip-integrated fiber optics.*

Accomplishments in Education and outreach

- *The M.Tech. in Quantum Technology program started in August 2021. The first batch of students has recently graduated and has been absorbed by industry.*
- *Quantum Technology has been approved as a minor subject option in the Bachelor of Science (Research) program, beginning with students in their third year during 2023-24.*
- *The software simulator for noisy quantum circuits developed at IISc was launched by MeitY as a free national educational platform in August 2021. https://qctoolkit.in*
- *Organization of industry conclave*
- *Establishment of the Quantum Research Park with funding from Govt of Karnataka*

MTech in Quantum Technology (First of its kind in India)

2-year course-based multi-disciplinary program, including an internship in the summer break and a project in the final semester.

Four thrust areas of specialization

- **Quantum Computation and Simulation**
- **Quantum Communications**
- **Quantum Measurement and Sensing**
- **Materials for Quantum Technologies**

Placements 2022

Internships 2021 & 2022

Industries and Startups, we extend a warm invite to be a partner of this consortium.

We invite contributions from corporates and philanthropists towards IQTI. CSR funds can facilitate Visiting positions, Fellowships/Chair Professorship, Schools/ Workshops/ Outreach, Research Projects, and Enrichment of MTech QT Lab.

For any queries, write to ***office.iqti@iisc.ac.in***

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YouTube https://www.youtube.com/@IQTI

Quantum Research Park (QuRP)

Hub for Quantum Computing and related technologies

Funded by Karnataka Innovation and Technology Society (KITS), Government of Karnataka

About QuRP

Quantum Research Park, a Hub for Quantum Computing and related technologies is a project administered by FSID (Foundation for Science Innovation and Development), IISc with support from KITS (Karnataka Innovation and Technology Society), Government of Karnataka. QuRP will encourage scientific inventions and innovations in the field of Quantum Computing and related technologies.

Goals of QuRP

- Create, maintain, and share world-class facilities with industries, startup partners, and academic users of Karnataka.
- Mentor and support translation of research in the wide area of quantum technologies and nurturing collaboration between industry and academia
- Support advanced skill development for students/academic scientists from Karnataka and Industry Partners.

Quantum Research Park (QuRP)

To create and inspire scientific innovations in the field of Quantum Computing and related technologies.

IQTI Industry Conclave

Skill Development

Q-Daksha Internship program

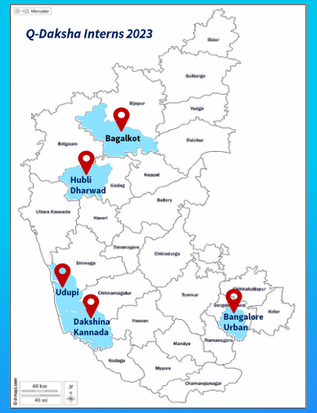
Popular science talks

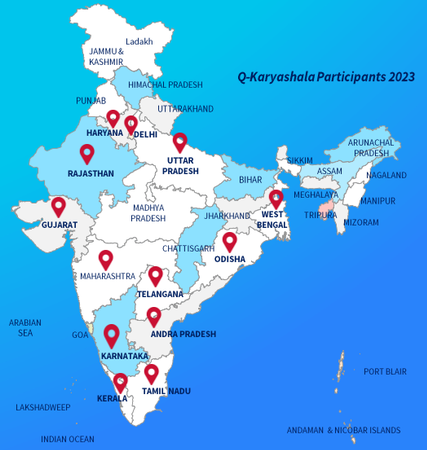
Special QuanTalks by Prof. Serge Haroche

Collaborations with state universities Coming soon!

Q-Karyashala workshop 2023

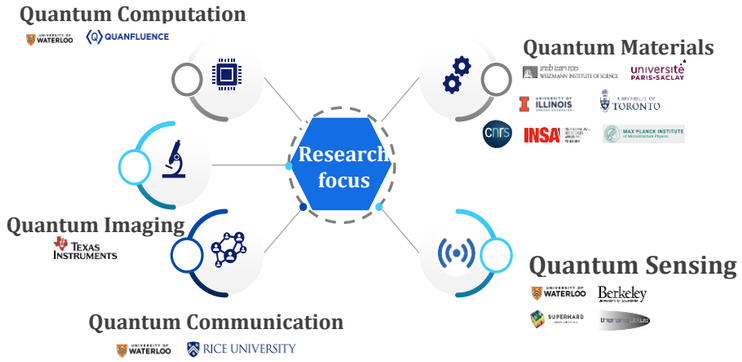
A total of 84 participants (57 from Karnataka and 27 from other states)





Collaborations through seed fund projects

Academics, Startups & Industries



Infrastructure Development

- **Quantum measurement & control systems**
- **Continuous Tunable Laser**
- **Closed cycle Optical Cryostat**
- **Pulsed ND Yag laser**

For more details, Kindly visit our webpage

For any queries, write to ***office.qurp@iisc.ac.in***