



About NIT Sikkim

The National Institute of Technology Sikkim is an institution set up by an Act of Parliament in the year 2009 as a part of the 11th Five-year Plan to impart high quality technical education and to carry out research and development in the field of science and technology in the state of Sikkim. The Institute has also been accorded the status of an institute of national importance by the Government of India keeping in view the role of the organization in developing highly skilled personnel in the field of science and technology. NIT Sikkim, since its inception has been functioning at Ravangla, South Sikkim.

About TEQIP III

The Technical Education Quality Improvement Programme aims to upscale and support ongoing efforts of Government of India to improve quality of technical education and enhance existing capacities of the institutions to become dynamic, demand-driven, quality conscious, efficient and forward looking, responsive to rapid economic and technological developments occurring both at national and international levels.

The Project, Third phase of Technical Education Quality Improvement Programme (referred to as TEQIP-III) is fully integrated with the Twelfth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions with a special consideration for Low Income States and Special Category States and support to strengthen few affiliated technical universities to improve their policy, academic and management practices.

About the Program

Quantum information and computation is one of the most important areas of research in the present age. The subject stands at the crossroads of physics, computer science and mathematics. The workshop aims to provide, students, teachers and researchers working in diverse fields of physics, computer science and mathematics, an introduction to various topics in the field of quantum information and computation, both theoretical and experimental. The discourse has been conceived to be at the level of “the theoretical minimum”, for the chosen topics. The following topics are likely to be covered.

1. Quantum mechanics (primer)
2. Fundamental aspects of quantum theory and quantum information
3. Bipartite and multipartite quantum systems: Entanglement
4. Quantum communication
5. Quantum cryptography
6. Open quantum systems
7. Quantum error correction
8. Many-body physics and quantum information
9. Measurement-based quantum computation and topological quantum codes
10. Experimental realizations using NMR
11. Experimental realizations using ultracold gases
12. Superconducting quantum circuits

The purpose of the workshop is to provide the participants an idea about the wide scope of the field of quantum information and computation.

Workshop Duration: 5th October to 17th October 2020

Registration Fees: NIL (Funded by TEQIP III – NIT Sikkim)

Registration at: <https://forms.gle/HjgrojoTThCX6erK8>

Registration open for: Students, teachers and researchers working in the fields of physics, computer science and mathematics

RESOURCE PERSONS



Prof. Arun Kumar Pati is a physicist working at Harish-Chandra Research Institute, Prayagraj. He works in the areas of quantum information theory, quantum computation, general quantum theory, and foundations of quantum theory.

Website: <http://www.hri.res.in/~akpati/>



Prof. Archan S Majumdar is a physicist working at S. N. Bose National Centre for Basic Sciences, Kolkata. His research areas are quantum information, foundations, general relativity & cosmology.

Website: http://people.bose.res.in/faculty/fac_new/archansmajumdar.html



Prof. Aditi Sen De is a physicist working in the area of quantum information and computation at Harish-Chandra Research Institute, Prayagraj. Her research interests include quantum communication, detection and quantification of quantum correlations, interface of many-body physics with quantum information science.

Website: <http://www.hri.res.in/~aditi/>



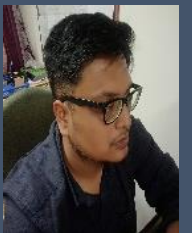
Prof. Ujjwal Sen is a physicist working at Harish-Chandra Research Institute, Prayagraj. His main interests are quantum information and computation, and its interface with many-body physics.

Website: <http://www.hri.res.in/~ujjwal/>



Prof. T. S. Mahesh is a physicist working at IISER, Pune. His research areas are NMR spectroscopy, quantum information, optimal control and artificial intelligence.

Website: <http://www.iiserpune.ac.in/~mahesh.ts/index.html>



Prof. Indranil Chakrabarty is a physicist working at International Institute of Information Technology Hyderabad. He works in the areas of quantum information theory, quantum foundation, quantum cryptography, quantum communication and network.

Website: <https://www.iiit.ac.in/people/faculty/indranilchakrabarty/>



Prof. R. Prabhu is a physicist working at Indian Institute of Technology Dharwad. His research areas are quantum information theory, quantum communication and quantum optics.

Website: <https://www.sites.google.com/view/prabhurama/>



Prof. Ramij Rahaman is mathematician working at Presidency University, Kolkata. His research areas are mathematical aspects of quantum computation & information, quantum cryptography, quantum protocols, properties of multipartite hilbert spaces, generalized nonlocal correlations, quantum error correcting code, classical code and cryptography.

Website: <https://www.presiuniv.ac.in/web/staff.php?staffid=411>



Prof. Kanhaiya Pandey is a physicist working at IIT, Guwahati. His research areas are atomic, molecular and optical physics, laser cooling and trapping of atoms, BEC, many body physics, atomic coherence, EIT, magnetometry, spectroscopy and frequency metrology of optical-atomic transitions.

Website: https://www.iitg.ac.in/phy/fac_homepage.php?email=kanhaiyapandey@iitg.ac.in



Prof. Amit Kumar Pal is a physicist working at IIT, Palakkad. His research involves various aspects of quantum information science and quantum technologies.

Website: <https://iitpkd.ac.in/people/amit>



Prof. Sandeep K. Goyal is a physicist working at IISER, Mohali. His research areas are quantum optics and quantum information theory.

Website: <http://www.iisermohali.ac.in/faculty/dps/skgoyal>



Prof. Prabha Mandayam is a physicist working at IIT, Madras. Her research area is quantum information and computing.

Website: <https://physics.iitm.ac.in/prabhamd>



Prof. Baladitya Suri is a physicist working at IISc, Bangalore. His research areas are quantum computation and information with superconducting circuits, scalable quantum computation architectures, quantum acoustics with superconducting circuits, single photon and phonon generators and detectors, quantum measurement and control.

Website: <http://iap.iisc.ac.in/people/balasuri/>

ORGANIZING TEAM

Chief Patron: Prof. M. C. Govil, Director

Patron: Dr. Ranjan Basak, Coordinator, TEQIP-III

Coordinator: Dr. Anindya Biswas

Co-Coordinator: Dr. Md Nurujjaman

Advisory Committee: Dr. Achintesh Narayan Biswas

Dr. Sangram Ray

Organizing Committee: Dr. Anindya Biswas

Dr. Md Nurujjaman

Dr. Pratyay Kuila

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