

# Open Quantum 2023

An open house on April 14, 2023 at Jaypee Institute of Information Technology, Noida

Quantum scientists around the world celebrate 14th April as the World Quantum Day in commemoration of Planck constant whose value is  $\sim 4.14 \times 10^{-15} \text{eVs}$ . The World Quantum Day aims at promoting the public understanding of Quantum Science and Technology around the World. In consonance with the theme, and one of the objectives of the QuEST program of ICPS, DST, India, the Department of Physics and Materials Science & Engineering, JIIT, Noida is organizing a program for BSc/MSc/BTech/MTech students and teachers involved in teaching them on 14<sup>th</sup> April 2023 with an aim to expose them to the recent developments in the area quantum technologies with specific attention to experimental optical quantum information and achievements

## COMPETITIONS FOR THE STUDENTS

- Scientific Essay Writing (3-6 pages on any topic related to quantum technology and its applications; essays are to be sent to [sandeep.mishra@mail.jiit.ac.in](mailto:sandeep.mishra@mail.jiit.ac.in) in PDF by 10<sup>th</sup> April, 2023)
- Poster Presentation (On any topic related to quantum enhanced science and technology, initial posters are to be sent to [sandeep.mishra@mail.jiit.ac.in](mailto:sandeep.mishra@mail.jiit.ac.in) in PDF by 10<sup>th</sup> April, 2023. Selected posters are to be printed and presented during the event).
- Quiz (Topic: Quantum mechanics and its applications; it will happen at the venue)
- Circuit making using Qiskit (It will happen at the venue; quantum circuit making tasks will be given to participants; they have to bring their laptop)

## OPEN HOUSE

A guided visit to the quantum technology-related research and teaching labs of JIIT, Noida will be organized and the excitement of quantum computing and communication will be shared with the participants. Participants will get an opportunity to see the working of basic experiments including, Franck Hertz experiment, determination of Planck's constant, Spectrometers and their applications. Following advanced experiments will also be shown:

- Implementation of BB84 protocol
- Elitzur Vaidman Bomb testing,
- Use of vibration free optical benches
- Quantum random number generators,
- A fiber based scheme for the implementation of quantum key distribution (specifically, COW protocol), how key rate changes with distance.

Basic knowledge required to understand these experiments will be provided through 3 initial talks provided by the eminent speakers engaged in QuEST program.

## LECTURES BY EMINENT SPEAKERS

An introduction to the emergent field of Quantum Technologies will be provided to enable the participants to understand the activities happening in our lab. Further, it will motivate the young students to explore what can they do at their UG and PG labs, and using cloud-based quantum computers.



Dr. Bhaskar Kanseri,  
IIT, Delhi



Dr. Joyee Ghosh,  
IIT, Delhi

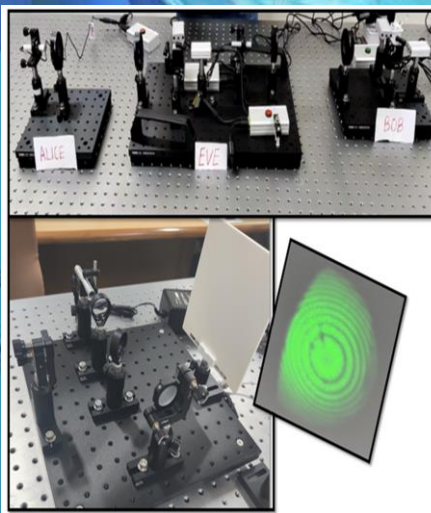


Prof. Anirban Pathak,  
JIIT, Noida

Other Resource persons:

A) Dr. Sandeep Mishra, JIIT Noida

B) Dr. Abhishek Shukla, University of Hasselt, Belgium



All participants will be given certificates.



**Link for Registration**  
**(last date 11<sup>th</sup> April):**

<https://forms.gle/V8GMXiDuftgesUwbA>

**There is no registration fee**



Convener

**Prof. Anirban Pathak**  
anirban.pathak@jiit.ac.in

**Prof. Papia Chowdhury**  
papia.chowdhury@jiit.ac.in

**Timing: 10 am to 4 pm**

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