## E&ICT Academy, PDPM IIITDM Jabalpur

## Online Winter Faculty Development Programme
## Quantum Computing

### February 17 - 28, 2025 : Online live streaming

### Jointly Organized by

| MNIT Jaipur | IIITDM Jabalpur | NIT Patna | IIT Guwahati | IIT Roorkee |
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### Course Contents and Schedule

**[February 17 - 28, 2025, 08:00 AM – 10:00 AM, 5:00 PM to 7:00 PM]**

- Quantum Measurements Density Matrices: Positive-Operator Valued Measure; Fragility of quantum information: Decoherence
- Quantum Superposition and Entanglement; Quantum Gates and Circuits; No cloning theorem & Quantum Teleportation; Bell's inequality and its implications
- Quantum Algorithms & Circuits; Deutsch and Deutsch–Jozsa algorithms; Grover's Search Algorithm; Quantum Fourier Transform
- Shore's Factorization Algorithm; Quantum Error Correction: Fault tolerance; Quantum Cryptography; Implementing Quantum Computing: issues of fidelity
- Scalability in quantum computing; NMR Quantum Computing; Spintronics and QED approaches
- Linear Optical Approaches; Nonlinear Optical Approaches; Limits of the approaches; Future scope

### Coordinators

Dr. Dip Prakash Samajdar,
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### RESOURCE PERSONS

- Dr. Mani Madhukar, IBM India & his team

### Registration Details

**Registration link** – Please fill in the registration form using the following link:
https://forms.gle/i1gQZ9X9szKq4HcR9

**Registration fee: INR 500/-**
**Last Date for Registration: February 13, 2025**

Online payment details:
- Internet banking
  Beneficiary Name: PDPM IIITDM Jabalpur
  Bank Name: INDIAN BANK
  A/C No. : 50018692852
  IFSC Code: IDIB000M694

- UPI ID: iiitdmj@indianbk

**PDPM IIITDM JABALPUR**
**SCAN & PAY**



UPI ID : iiitdmj@indianbk

### Contact Details

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