

**A Report on Five Days FDP on
"Exploring the Quantum Frontier: An In-Depth Investigation of Quantum Computing and its Revolutionary Applications"**

**Organized by Department of Computer Science & Technology
January 29, 2024 - February 2, 2024**

The Department of Computer Science & Technology, MITS and Faculty Development Program (FDP) cell, JNTUA in association with ISTE AP section jointly organized a 5-Day FDP program titled " Exploring the Quantum Frontier: An In-Depth Investigation of Quantum Computing and its Revolutionary Applications " January 29, 2024, to February 2, 2024, at Madanapalle Institute of Technology & Science, Madanapalle. The registration started at 9.00 a.m. in the Seminar Hall B. The Inauguration started by 9.30 a.m. at Seminar Hall B, MITS. Senior Professor Dr. R. Subramanian from Pondicherry University graced the occasion as the Chief Guest, Dr. Aravinda S from IIT Tirupati was the Guest of Honor. The Vice principals, Deans, HoDs, Faculty & Staff members from various departments, External participants from various institutes and Students were participated in inauguration ceremony.



Fig. 1 Inauguration Ceremony

Mr. Naveen Asst. The professor anchored the entire inauguration ceremony. He welcomed the Coordinator, HoD, Vice Principal, Resource person and Chief guest to the Dais. The program started with a prayer song and with the lighting of a lamp. Dr. M. Sreedevi, HOD, Department of Computer Science & Technology, MITS, has given the opening remarks about the FDP program. Dr. P. Ramanathan, Vice Principal, MITS, has delivered a welcome note to the dignitaries and highlighted the institute's achievements, facilities and wished all the participants to attend the FDP program and learn new things. Chief Guest Senior Professor Dr. R. Subramanian, Pondicherry University delivered a speech on the importance of learning the new technology in align with industry standards. Guest of Honour, Dr. Aravinda S, IIT Tirupati delivered a speech on quantum information and quantum chaos. Dr. K. Dinesh, Coordinator proposed a vote of thanks by mentioning his gratitude to Vice Chancellor of JNTUA, Prof. G. V. R Srinivasa Rao, Director, FDP Cell, Prof. B. Eswara Reddy Garu, Management of MITS, Principal, Vice Principal, HOD, and Various committee members. After a short tea break, FDP session started as per the schedule.

Day 1: January 29, 2024

- **Sessions 1 & 2: Dr. R. Subramanian elucidated the basic concepts of quantum computing, emphasizing the mathematical formulation of quantum mechanics.**



Fig 2: Resource Person: Dr R Subramanian, Pondicherry University

- **Sessions 3 & 4: Dr. Aravinda S explored quantum information and quantum chaos, laying the foundation for quantum computational and communication advantages.**

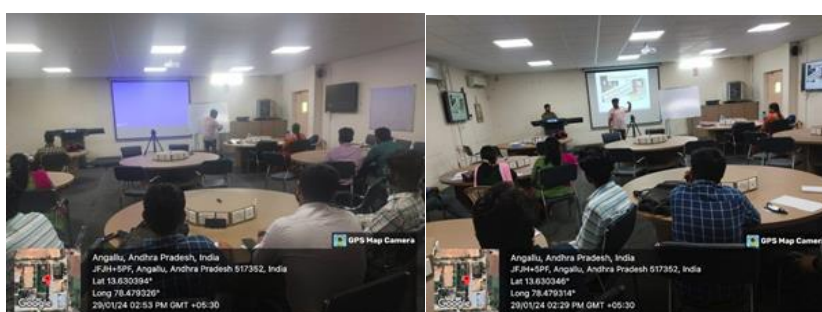


Fig 3: Resource Person: Dr. Aravinda S, Indian Institute of Technology Tirupati.

Day 2: January 30, 2024

- **Session 5: Dr. T. Kalaipriyan discussed quantum gates and qubits, highlighting the differences between classical and quantum information on single systems.**



Fig 4: Resource Person: Dr. T. Kalaipriyan, VIT Chennai.

- **Session 6: Dr. Rajakumar Arul delved into quantum key distribution, elucidating its significance in secure communication protocols**