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Dr. Sharmila Sankar, Professor and Dean/SCIMS

Dr. W. Aisha Banu, Professor & HOD/CSE

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Dr. X. Arputha Rathina, Assoc. Professor/CSE

Dr. L. Arun Raj, Assoc. Professor/ CSE

Co-Coordinators

Dr. S. Syed Abdul Syed, Assoc. Professor/ CSE

Dr. S. Sharon Priya, Assoc. Professor/CSE

Resource Persons

Dr. Debanjen Konar,

Center for Advanced Systems Understanding,
HZDR Germany.

Dr. Arish Pitchai - Quantum R&D,

Senior Associate, PricewaterhouseCoopers,
Bangalore, India,

Dr. JayaKumar Vaithiyashankar,

BD Quantum Qiskit Advocate Mentor,
Bangalore, India

Dr. Sunil Kumar Mishra,

Department of Physics, IIT (BHU), India.

Dr. Sidhartha Bhattacharria,

Member of Russian Academy of Natural
Science, Principal Rajnagar Mahavidyalaya, India

Mr. Albert Einstein - Founder & CEO,

EinNel Technologies Chennai, India.

Dr. Pushpalatha M - HOD/CTECH,

SRMIST Kattankulathur, India.

Dr. Ishu Gupta - Scientist-D,

Institute of Information Technology,
Bangalore, India.

Dr. Manjula Gandhi .S,

Associate Professor, Department of Computing
Coimbatore Institute of Technology, India.

Important Dates

Last date for Registration : 13/10/2023

Date of Intimation : 14/10/2023

Registration Fees

External Faculty Member -Rs. 1000

Internal Faculty Member -Rs 750

PG Students & Research Scholars- Rs.500

Industry delegates -Rs. 2000

Account Details

Bank Name : Indian Overseas Bank

Account No. : 165701000005975

Account Name : CSE Association

Account Type : Savings Bank Account

Branch : Vandalur

IFSC Code : IOBA0001657

Registration Link

<https://tinyurl.com/yeyva2y5>

Register Here



Session Timing

10.00 AM to 12.00 PM.

2.00 PM to 3.30 PM.

Address for Correspondance

Dr. L.Arun Raj, Assoc. Professor/ CSE

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BSACIST, Chennai, India.

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2-WEEKS FACULTY DEVELOPMENT PROGRAM (FDP) ON RECENT TRENDS IN QUANTUM COMPUTING

16TH OCTOBER TO 31ST OCTOBER 2023



ORGANISED BY

DEPARTMENT OF CSE
SCHOOL OF COMPUTER INFORMATION
& MATHEMATICAL SCIENCES



About the Institution

Since 1984, B.S. Abdur Rahman Crescent Institute of Science and Technology is a renowned Quality Leadership Institution located at the greenest spot of Chennai near Tambaram. Through our long history of 38 years of excellence, the Institution has offered access to a wide range of academic opportunities. With 56 programmes, grouped under 12 different Schools, 31 Undergraduate programmes, 25 Postgraduate programmes, and Ph.D. (in all the departments), this institution is a rising stalwart in higher education with promising Quality, Security and Placement. We welcome students from all countries and our educational programmes are designed to equip the learners with virtual knowledge that helps them to achieve what they want to be and go where they want to go in the ladder of success.

About the Department

The Department of Computer Science & Engineering has been in existence since 1990 (30 Years of Excellence), Given the high demand for Computer Science professionals from the industry, the department offers four undergraduate programs namely B.Tech. Computer Science and Engineering, B.Tech. Artificial Intelligence & Data Science, B.Tech. CSE (Cyber Security), and B.Tech. CSE (Internet of Things). The department also offers post-graduate degree programme and Doctoral Degree Program in the field of Computer Science and Engineering. The undergraduate and postgraduate programs of Department of Computer Science & Engineering are approved by National Board of Accreditation, New Delhi.

About the Program

Experience the quantum revolution with our week-long Faculty Development Program (FDP) on Quantum Computing. Dive into the foundations, algorithms, and applications of this transformative technology. Gain practical skills through hands-on exercises and explore real-world use cases. Join us to unlock the potential of quantum computing and be part of the future.

About Quantum Computing

Quantum computing, a paradigm-shifting innovation, redefines information processing by employing the principles of quantum mechanics. Quantum computers use quantum bits or qubits, which are capable of simultaneously existing in multiple states due to superposition. This affords exponentially faster performance for complex calculations. Computational capability is further enhanced by entanglement, which is the relationship between the states of two qubits. The fields of optimization, materials science, quantum computing, and medicine development all benefit from quantum computing. Global initiatives are currently underway to surmount significant technical obstacles for usable quantum systems. The ramifications are far-reaching, and they signal the beginning of a new age in science and technology.

Topics to be Covered

- ♦ **Introduction to Quantum Computing**
- ♦ **Quantum Gates and Quantum Circuits**
- ♦ **Quantum Search Algorithms**
- ♦ **Quantum Fourier Transform and Shor's Algorithm**
- ♦ **Quantum Computing Hardware**
- ♦ **Quantum Computing Tools and Frameworks**
- ♦ **Quantum Machine Learning**
- ♦ **Quantum Optimization**
- ♦ **Quantum Cryptography and Secure Communication**
- ♦ **Quantum Computing in Industry and Research**

Course Outcomes

- ♦ Understand the distinctions between quantum computing and classical computing.
- ♦ Discuss the benefits and drawbacks of various methods for producing quantum bits.
- ♦ Describe the current industry and academic status of quantum computing.
- ♦ Create and operate quantum circuits to gain practical experience.
- ♦ Analyze the behavior of basic quantum algorithms.
- ♦ Create and simulate quantum circuits for practical learning.
- ♦ Simulate a simple quantum error-correcting code.
- ♦ Prove basic facts about quantum information channels.

Target Audience

This FDP is open to Faculty Members, Research Scholars, PG students and Industry Professionals in the relevant / allied disciplines.

