

IMPORTANT DATES

Last Date to Register: 29.11.2024

Intimation of Selection: 30.11.2024

Online ATAL FDP Dates: 02.12.2024 - 07.12.2024

GUIDELINES

- Number of participants is limited to 150. ATAL FDPs are completely free for participants
- Selection of the participants will be based on first come first serve basis and based on their area of research work.

DETAILS OF REGISTRATION

Registration has to done only through <https://atalacademy.aicte-india.org/>. For more information, <https://atalacademy.aicteindia.org/FAQ>.

FREE REGISTRATION for all participants

ONLINE PLATFORM

The entire programme will be conducted through online mode. The details of online platform and meeting link will be communicated to the selected candidates through their registered email. Assessment on topics covered will also be done through online mode. Minimum 80% attendance and 60% Marks are required to earn certificate.

AICTE – TRAINING AND LEARNING (ATAL) ACADEMY

The Government of India in association with AICTE launched the ATAL academy in 2018. The Vision of ATAL academy is to empower faculty to achieve goals of Higher Education such as access, equity and quality.

ABOUT THE FDP

"Unveiling Quantum Computing from Qubits to Quantum Algorithms: An Interdisciplinary Engineering Perspective" is crucial in today's rapidly evolving technological landscape. Quantum computing promises to revolutionize fields ranging from cryptography to material science, yet its principles remain complex and often inaccessible. Conducting this Faculty Development Program (FDP) will bridge the knowledge gap for faculty and researchers, fostering a deeper understanding of quantum mechanics, qubit functionality, and quantum algorithms.

Participants will gain insights into the interdisciplinary nature of quantum computing, learning how to integrate these concepts into their teaching and research. This FDP will also facilitate collaborations, inspiring innovative research projects that leverage quantum technologies. This initiative not only enhances academic expertise but also positions institutions at the forefront of quantum research. FDP Timing: 6.00 P.M. to 9.00 P.M.

Topics to be Covered

1. Introduction to Quantum Computing: Principles and Paradigms
2. Impact of Quantum Computing on Modern Cryptographic Protocols used in Cloud Platforms
3. Quantum Hardware: Understanding Qubits and Quantum Gates
4. Quantum Ubiquity: Harnessing Quantum Computing for a seamless Digital Future
5. Quantum Programming: Tools and Languages (Qiskit, Cirq, etc.)
6. Quantum Machine Learning: Bridging Quantum Computing and AI
7. Quantum Reinforcement Learning
8. Wearable sensors for next gen quantum health monitoring
9. Photon statistics and quantum phase distribution over the fiber-optic link in the presence of phase noise
10. Quantum Algorithms: Transforming Computation and Solving Intractable Problems
11. Quantum Circuits and VLSI Design: Challenges and Innovations



R.M.K. COLLEGE OF ENGINEERING AND TECHNOLOGY



(An Autonomous Institution)

R.S.M. Nagar, Puduvoyal - 601 206

Approved by the AICTE, New Delhi / Affiliated to Anna University, Chennai
All Eligible Programs are accredited by NBA / Institution accredited by NAAC with "A" Grade
An ISO 21001: 2018 Certified Institution



AICTE-ATAL Sponsored Six Days
Online Faculty Development Program
on

**"UNVEILING QUANTUM COMPUTING
FROM QUBITS TO QUANTUM
ALGORITHMS: AN
INTERDISCIPLINARY ENGINEERING
PERSPECTIVE"**

02.12.2024 to 07.12.2024

Organized
by

**DEPARTMENT OF ELECTRONICS ENGINEERING
(VLSI Design and Technology)
and
DEPARTMENT OF COMPUTER SCIENCE AND
ENGINEERING**



ABOUT THE INSTITUTION

R.M.K. College of Engineering and Technology was established in the year 2008 by Lakshmikanthammal Educational Trust. The College is approved by All India Council for Technical Education (AICTE) New Delhi and Affiliated to Anna University, Chennai. The College is accredited by NAAC and all the eligible programmes are accredited by NBA. Our Institution enables the forefront of learning, bringing together aspiring individuals to advance the boundaries of knowledge and potential in this world. With the erudite approach and dedication to embark upon the technological challenges in a critical and methodical way, our institution has obtained autonomous status from the academic year 2021-2022 onwards. Also, our Institution is ISO 21001 : 2018 Certified.

ACHIEVEMENTS OF OUR INSTITUTION

- Ranked in the band range of 201-300 by NIRF Engineering category- 2024.
- Established AICTE IDEA Lab with a Project cost of Rs. 1.31 Crore.
- RMK Group of Institutions, Received Tamil Nadu India Excellence Group of Institutes for Prompting Industry Academia Interface in the World Education Summit 2024 held at Dubai.
- Ranked in the band range of 51-100 by NIRF Innovation category 2023 (ARIIA).
- Received Bharatiya Vidya Bhavan National Award for Best Engineering College for the Best Overall Performance in 2015.
- Secured 181 Anna University Ranks including a Gold medal.
- Received 3.5-Star rating for 2022-23 activities from Institute Innovation Cell, Ministry of Education, Govt. of India.
- Recognized by MSME Business Incubator for projects worth Rs. 1.5 Crore.
- Awarded by the British Council for the highest number of BEC Exam takers in South Asia.
- Received Best Performance in Youth Red Cross Unit Award from the Indian Red Cross Society.
- Ranked 9th among the top Private Engineering Colleges in Tamilnadu for Placements by Times Engineering Universities and Institutes Ranking Survey 2023.
- Secured 97th Rank in Outlook - Drshti ranking of Best Professional Colleges in 2018.
- Ranked 69 among the top 170 Engineering Institutes in India by the Times Engineering Institute Ranking survey 2023.
- Received a total grant of Rs. 3,22,03,754 from various Funding Agencies.

ABOUT THE DEPARTMENTS

Electronics Engineering (VLSI Design & Technology):

This department was established in 2024 and committed to step forward in the field of VLSI domain through quality education, innovative research, and strong industry connections. This specialized new department focuses on the design, verification and testing aspects of VLSI systems that are crucial for developing sophisticated integrated circuits used in various modern electronic devices. The department's primary objective is to provide students with a comprehensive understanding of VLSI technologies, encompassing the entire lifecycle from conceptual design to final testing.

Computer Science and Engineering:

This department was established in the academic year 2008-09. It maintains excellent academic and Placement records since inception. Students are actively participating in five Center of Excellence (CoE) such as Big Data, Cloud, Mobility, Information Security, Full Stack Development co-sponsored by top ITMNCs. Our department facilitates Technology enabled learning and students are actively participating in NPTEL and Coding/Project competitions across the country. The department has extensive interactions with Professional Bodies such as CSI, ISTE and ICTACT.

The department has been accredited by NBA, New Delhi.

TARGET AUDIENCE

The Faculty Members of the AICTE-approved institutions, research scholars, PG Scholars, participants from the Government, Industry and staff of host institution can attend the FDP.

ADDRESS FOR COMMUNICATION

Dr. K. Ramar, M.E., Ph.D., FIE.,
Professor (CSE) and Dean Research,
&
Co-ordinator AICTE-ATAL FDP
R.M.K. College of Engineering and Technology, R.S.M
Nagar, Pudukottai – 601 206,
Gummidipoondi Taluk, Tiruvallur District,
Tamil Nadu, India.

Chief Patrons

Thiru. R.S.Munirathinam, EX. MLA Founder Chairman
Tmt. Manjula Munirathinam, Chair Person
Thiru. R.Jothi Naidu, Director
Thiru. R.M.Kishore B.E., MBA(UK), Vice Chairman
Thiru. Yalamanchi Pradeep BE, MS, Secretary
Dr.Durgadevi Pradeep B.E., MBA, Ph.D, Vice Chairperson
Tmt. Sowmya Kishore B.E., Management Trustee
Dr.M.S.Palanichamy, Advisor
Thiru. T.Pitchandi, IAS (Rtd.), Advisor
Thiru. V.Manoharan, Advisor

Patrons

Dr. N. Suresh Kumar, M.E., Ph.D., Principal
Dr. K. Sivaram, M.Tech., Ph.D., Dean Academics
Dr. K. Ramar, M.E., Ph.D., FIE., Dean Research

Coordinator



Dr. K. Ramar, M.E., Ph.D., FIE.,
Professor (CSE) and Dean Research, RMKCET.

Co-Coordinator



Dr. M. Subadra Murugan, M.E., Ph.D., M.I.E.,
Professor and HOD, Electronics Engineering (VLSI Design and
Technology), RMKCET.

CONTACT DETAILS

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RESOURCE PERSONS



Dr. Arun B. Alosious
Assistant Professor
Department of Electronics and Electrical
Engineering
Indian Institute of Technology Guwahati,
Guwahati, Assam.



Er. Setu Parimi
Chief Technology Officer
Risk Profiler Inc
London, UK



Dr. D. H. Manjaiah
Senior Professor, CSE &
Director of PMEB
Mangalore University,
Mangalore, Karnataka.



Dr. K. Srinivasan,
Assistant Professor, School of
Quantum Technology, Defence
Institute of Advanced
Technology, Pune,
Maharashtra



Dr. S. Manjula Gandhi
Associate Professor, Coimbatore
Institute of Technology,
Coimbatore, Tamil Nadu.



Dr. R. Sumithra
Senior Data Scientist,
Titan, Group of Tata,
Bangalore, Karnataka.



Dr. Rame Gowda Dinesh,
Principal Engineer, Samsung
Electronics, Bangalore,
Karnataka



Dr. Rana Pratap
Senior Project Associate,
Dept of Electrical Engineering,
Indian Institute of Technology Madras,
Chennai, Tamil Nadu



Dr. Shanmuga Sundar Dhanabalan
Senior Lecturer
School of Computing
Engineering and Mathematical
Sciences, LA Trobe University,
Melbourne, Australia.

ATAL Online 6 Day Faculty Development Programmes 2024-25 Schedule

FDP Thrust Area: Quantum Computing

FDP Title: "Unveiling Quantum Computing from Qubits to Quantum Algorithms: An Interdisciplinary Engineering Perspective"

Start Date: 02.12.24

End Date:07.12.24

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
<p>6:00PM to 6:30PM</p> <p>Inaugural Session</p>	<p>6:00PM to 7:30PM</p> <p>Session 3</p> <p>Quantum Hardware: Understanding Qubits and Quantum Gates</p> <p>Dr. R.Sumithra Senior Data Scientist, Titan, Group of Tata, Bangalore, Karnataka Years of Exp:10</p>	<p>6:00PM to 7:30PM</p> <p>Session 5</p> <p>Quantum Programming- 1: Tools and Languages (Qiskit, Cirq, etc.)</p> <p>Dr. K.Srinivasan Assistant Professor, School of Quantum Technology, Defence Institute of Advanced Technology, Pune. Maharashtra Years of Exp:12</p>	<p>6:00PM to 7:30PM</p> <p>Session 7</p> <p>Quantum Machine Learning: Bridging Quantum Computing and AI</p> <p>Dr. Rame Gowda Dinesh Principal Engineer, Samsung, Bangalore, Karnataka Years of Exp: 25</p>	<p>6:00PM to 7:30PM</p> <p>Session 9</p> <p>Wearable sensors for next gen quantum health monitoring</p> <p>Dr. Shanmuga Sundar Dhanabalan Senior Lecturer, School of Computing, Engineering and Mathematical Sciences, LA Trobe University, Melbourne, Australia Years of Exp:10</p>	<p>2:00PM to 3:30PM</p> <p>Session 11</p> <p>Quantum Algorithms - 1: Transforming Computation and Solving Intractable Problems</p> <p>Dr. S. Manjula Gandhi Designation & Organization: Associate Professor, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu Years of Exp:20</p>
<p>6:30PM to 8:00PM</p> <p>Session 1</p> <p>Introduction to Quantum Computing: Principles and Paradigms</p> <p>Dr.Arun B. Aloshious Assistant Professor Department of Electronics and Electrical Engineering Indian Institute of Technology Guwahati Guwahati , Assam Years of Exp:10</p>	<p>7:30PM to 9:00PM</p> <p>Session 4</p> <p>Quantum Ubiquity: Harnessing Quantum Computing for a seamless Digital Future</p> <p>Dr. D. H. Manjaiah Senior Professor& Director of PMEB Dept of Computer science, Mangalore University, Mangalore, Karnataka. Years of Exp:30</p>	<p>7:30PM to 9:00PM</p> <p>Session 6</p> <p>Quantum Programming - 2: Tools and Languages (Qiskit, Cirq, etc.)</p> <p>Dr. K.Srinivasan Assistant Professor, School of Quantum Technology, Defence Institute of Advanced Technology, Pune. Maharashtra Years of Exp:12</p>	<p>7:30PM to 9:00PM</p> <p>Session 8</p> <p>Quantum Reinforcement Learning</p> <p>Dr.Arun B. Aloshious Assistant Professor Department of Electronics and Electrical Engineering Indian Institute of Technology Guwahati, Assam Years of Exp:10</p>	<p>7:00PM to 9:00PM</p> <p>Session 10</p> <p>Photon statistics and quantum phase distribution over the fiber-optic link in the presence of phase noise</p> <p>Dr Rana Pratap Senior Project Associate, Dept of Electrical Engineering, Indian Institute of Technology Madras, Chennai, Tamil Nadu Years of Exp:10</p>	<p>3:30PM to 5:00PM</p> <p>Session 12</p> <p>Quantum Algorithms -2: Transforming Computation and Solving Intractable Problems</p> <p>Dr. S. Manjula Gandhi Designation & Organization: Associate Professor, Coimbatore Institute of Technology, Coimbatore, Tamil Nadu Years of Exp:20</p>
<p>8:00PM to 9:30PM</p> <p>Session 2</p> <p>Impact of Quantum Computing on Modern Cryptographic Protocols used in Cloud Platforms</p> <p>Er. Setu Parimi Chief Technology Officer Risk Profiler Inc London, UK Years of Exp:12</p>					<p>5:00PM to 6:30PM</p> <p>Session 13</p> <p>Quantum Circuits and VLSI Design: Challenges and Innovations</p> <p>Dr. Rame Gowda Dinesh Principal Engineer, Samsung, Bangalore, Karnataka Years of Exp:25</p>
					<p>6:30PM to 7:30PM</p> <p>Online test & feedback</p>
					<p>7:30PM to 8:00PM</p> <p>Valedictory Session</p>