About the Institute

Indian Institute of Information Technology, Kottayam is one among the IIITs that have been established as "Institutions of National Importance" by Ministry of Education, Govt. of India under the ambit of IIIT (PPP) Act 2017. The institute offers 4 year B.Tech and B.Tech(Hons) program with specialized courses covering all major research domains of Computer Science and Electronics and Communication Engineering. The students are admitted against the JoSAA/CSAB counselling against the JEE main rank list. Institute also offers MTech in CSE and PhD program in CSE, ECE and Mathematics.

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Prof. P. Mohanan, PIC Academics, IIITK

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FACULTY DEVELOPMENT PROGRAMME (ONLINE)
ON
RECENT TRENDS IN VLSI AND MEMS

June 3-7 2024

Organized by

I²CS Research Group
IIIT Kottayam

I²CS
Intelligent Integrated Circuits and Systems Research Group

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ABOUT THE PROGRAMME

This programme offers a fascinating opportunity to discuss the recent advances in design and implementation of VLSI & MEMS and facilitates cutting edge research in these areas. Advancements in VLSI and MEMS are revolutionizing electronics, particularly through heterogeneous integration in VLSI, merging CMOS, photonics, and MEMS for enhanced functionality, performance, and reduced size/power usage. This leads to complex SoCs for IoT & AI. MEMS research is focused on miniaturization, improved functionality, and reliability, resulting in multi-functional devices combining sensing, actuation, and communication. The convergence of VLSI and MEMS is creating advanced microsystems, promising smaller, smarter, and more integrated electronics.

ABOUT I²CS RESEARCH GROUP

The Intelligent Integrated Circuits and Systems (I²CS) Research Group at IIITK is a diverse group of faculty members, research scholars, and UG students. Our team consists of experts in the broad areas of VLSI Circuits & Systems including ASIC & FPGA, Embedded systems, Hardware Architectures, Hardware Security, AI/ML Accelerators, Semi conductor Devices, Analog/RF IC design, Signal processing & Instrumentation, Piezoelectric Sensors, Energy Harvesters, MEMS and allied areas. Research Lab is equipped with Cadence tool, Xilinx FPGA boards, Microchip SoC boards, Arduino boards and MatLab.

RESOURCE PERSONS

- **Prof. Santosh Kumar Vishvakarma, IIT Indore**
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- **Integrated Circuit Reliability and Quality : Challenges, Opportunities and Roadmap**
- **Power Management in Integrated Circuit**
- **In Memory computing using emerging nano devices**
- **Compute In Memory: Design and challenges for AI applications**
- **Mixed signal IC design - A/D Converters**
- **Radio Frequency Integrated Circuit Design**
- **MEMS sensors and Actuators**
- **Design, Simulation, fabrication, and testing of resonant micro pressure sensor**
- **Lab on a chip: Photonic devices for sensing applications**
- **Opportunities & Role of VLSI in state-of-the-art and emerging IoT Applications**