

**Area / Group Name: VLSI Circuits and Systems**

VLSI circuit design is the process of designing a large computer chip or IC, using CAD tools on a workstation or a personal computer. Advances in VLSI have today enabled most systems to become compact, highly reliable and deliver data at high speed. CMOS technology has become a dominant analog technology because of good quality capacitors and switches. Furthermore with growing CMOS VLSI, current-mode analog design techniques play an important role in successfully exploiting this technology in the analog domain. As a consequence many of the early current-mode circuit techniques are enjoying a new beginning and a new generation of current-mode analog building blocks and systems. Nowadays, in modern microelectronics and very large scale integration design, current conveyors are the most widely used current-mode active elements. With the recent and rapid upsurge in the areas like hardware software co-design, this research group is created to cater the needs in research in both hardware and software areas, bridging the gap between academia and industry.

Researchers working in this group focus on core concepts and advancements in Low power CMOS design, Analog circuits and systems, Low power VLSI, High frequency CMOS Design, Device Modelling, Current-mode active filters, FinFET, CNTFETs, CMOS-MEMS and Analog electronics for biomorphic solutions. Currently, 14 faculty members are working in this broad area. Six Ph.D.s have been completed in the area and 11 more are in progress. More than 100 research papers in reputed International Journals and many more conference papers, book chapters have been published in this area by the faculties and students of the department of ECE, JIIT.