

Departmental Seminar

Seminar Title	: Efficient Hybrid Charge Pump Circuit for Low-Voltage Energy Harvesting Applications.
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Venue	: VLSI Lab
Date and Time	: 03 Jan 2025 (06.15PM)
Abstract	: This paper introduces a hybrid charge pump model to enhance efficiency by minimizing voltage losses. The core principles of charge pump operation and the significance of capacitive and switching components are highlighted throughout the design process. The design strategies for reducing charge transfer losses and boosting overall circuit efficiency are also discussed. A comparison of voltage conversion ratios of existing charge pump circuits such as the Dickson charge pump, Wu-Chang charge pump, and Fibonacci charge pump is presented. The proposed circuit is designed with a 0.18 μm process, providing an output of 19.88 V with an input of 1.8 V and 17.33 V for an input of 1 V.