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ELECTRICAL & COMPUTER ENGINEERING
TEXAS A&M UNIVERSITY

S E M I N A R

Room M309 ANIN

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High-Precision SAR ADCs: Challenges and Precautions

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Abstract: Designing a speed and Bandwidth reconfigurable ADC is a decades-long challenging problem. This seminar will go through the problems associated with the design process of high-precision Successive Approximation Register Analog to Digital Converters (SAR-ADC). Charge leakage during the conversion process is addressed and mitigation methodologies and techniques are presented. Different trade-offs of the comparator design are explored then the DAC mismatches problem is investigated. Concepts behind DAC calibration will be presented and an emphasis will be put on a self-testing calibration technique.

Mohamed M. Elsayed is an Associate Staff Design Engineer at Silicon Laboratories and works in the area of wireless MCU for IoT applications. He received the Ph.D. degree from Texas A&M University in 2011 and the B.Sc. and M.Sc. degrees in electrical engineering from Cairo University, Cairo, Egypt, in 2002 and 2005, respectively. His research works spans the areas of sigma-delta ADCs, SAR ADCs, time-mode analog circuits and extremely low-power circuits for IoT applications. Dr. Elsayed holds two U.S. patents and has authored or coauthored several refereed journal papers·