

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: <https://cde.nus.edu.sg/ece>

Area: Integrated Circuits & Embedded Systems (ICES)

Host: Professor Massimo Alioto

Research Seminar

TOPIC	:	Integrated Charge Pump Circuits – Part 1: Basics and Modelling
SPEAKER	:	Prof. Andrea Ballo
DATE	:	Tuesday 6th of October
TIME	:	4PM to 5PM
VENUE	:	E3-06-01
ABSTRACT		
Integrated charge pumps are fundamental building blocks for voltage conversion and multiplication in modern low-power integrated systems. This two-part seminar will cover charge pump circuits from fundamental principles to advanced architectures and emerging applications. Part 1 – Basics and Modelling will introduce classical charge pump topologies and their operating principles. Analytical models for voltage conversion, charge transfer, output resistance, efficiency, and voltage losses will be presented. The effects of parasitic capacitances, device limitations, and circuit sizing will also be discussed.		
BIOGRAPHY		
	Andrea Ballo is a Research Fellow and Adjunct Professor of electronic devices and integrated power electronics at the University of Catania, Italy. His current research interests include low-voltage low-power analog circuit design and analog and mixed electronics for energy harvesting applications. In 2026 he received the Italian National Scientific Qualification for the position of Full Professor and he is in the Stanford/Elsevier Top 2% Scientists List from 2023.	