

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 2: Advances and Recent Trends
SPEAKER	:	Prof. Andrea Ballo
DATE	:	Wednesday 7th of October
TIME	:	4 PM to 5 PM
VENUE	:	E3-06-03

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 2 – Advances and Recent will build on these fundamentals and explore advanced charge pump architectures. Techniques for improving efficiency, reducing area and power consumption, and increasing voltage conversion capability will be examined. Attention will be given to low-voltage and ultra-low-power operation. Recent developments for energy harvesting, wireless power transfer, battery-less IoT, and flexible electronics will be highlighted. The seminars will conclude with current challenges and emerging research directions in integrated charge pump design

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.