

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: Prof Massimo Bruno Alioto

Research Seminar

TOPIC	:	High-Speed ADC Innovations: Architectures, Circuit Techniques & Calibration
SPEAKER	:	Prof Pieter Harpe Eindhoven University of Technology, The Netherlands
DATE	:	Wednesday, 28 October 2026
TIME	:	3:00PM-4:00PM
VENUE	:	E3-06-01

ABSTRACT

Applications such as communication continuously demand ADCs operating at higher speed (tens of GHz) while maintaining adequate energy efficiency. Making progress in this performance region is hampered by aperture limitations and auxiliary components like the input network and the clock drivers. Fortunately, technology scaling, hybrid ADC architectures, and advanced calibration methods have contributed to performance improvements. In this presentation, the main design challenges are reviewed, and recent state-of-the-art high-speed ADC examples are highlighted. The presentation will cover hybrid ADC architectures, innovative circuit techniques, calibration methods, and auxiliary circuits, all in the context of high-speed ADCs.

BIOGRAPHY



Pieter Harpe, Eindhoven University of Technology, The Netherlands

Pieter Harpe received the MSc and PhD degrees from the Eindhoven University of Technology, and then he worked for several years at imec on ultra low-power ADCs. In 2011, he joined Eindhoven University of Technology, where he is currently an Associate Professor and lead of the Resource Efficient Electronics Lab. His main activities are on low-power analog and mixed-signal circuits. Dr. Harpe is TPC member for ISSCC and A-SSCC, Associate Editor for TCAS-I, SSCS AdCom Member-at-Large and SSCS Distinguished Lecturer.