

Duration: 08:30 - 12:30

Room: Neu Delhi

WW-02

Millimetre Wave Radar Sensor Design in Nanoscale RF-CMOS Technologies

Organiser:

Sorin P. Voinigescu, University of Toronto, Toronto, Canada

Abstract

This workshop will focus of the performance and reliability requirements of nanoscale RF CMOS technologies and the associated circuit topologies, design methodologies and system architectures suitable for future mm-wave automotive, gesture control, and ambient sensors. The workshop will discuss the PDSOI, FDSOI, and FinFET CMOS technology options and their performance, as well as provide examples of automotive radar, gesture control, and mm-wave RF ID transceivers in nanoscale CMOS technologies. The differences and similarities between SiGe BiCMOS and pure CMOS implementations will be covered as well as the roadmap for future advanced node RF performance.

Programme

08:30 - 08:40 Introduction

S. P. Voinigescu, University of Toronto, Canada

08:40 - 09:25 Silicon FDSOI and FinFETs for mm-Wave Applications

D. Hame, GlobalFoundries, Germany

09:25 - 10:10 Advanced CMOS for Millimetre-Wave Circuit Design

K. Yau, Broadcom, USA

10:10 - 10:50 Break

10:50 - 11:35 Technology-Related Circuit Design Challenges for HighEnd mm-Wave Radar Based Sensors

S. Trotta, Infineon Technologies, Germany

11:35 - 12:20 Meeting the Requirements of Future Automotive Radar Sensors with Advanced Nanoscale CMOS Technologies

M. Elkhoully, Robert Bosch GmbH, Germany

12:20 - 12:30 Ultra-Low-Power Millimetre-Wave Active Reflectors and Doppler Sensors: CMOS vs. SiGe BiCMOS

S.P. Voinigescu, University of Toronto, Canada