Duration: 09:00 – 13:00
Room: N108

**WS-02**
**High Efficiency mm-Wave Power Amplifiers for 5G**

Organisers:
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¹University of California, Davis, ²Cardiff University, ³Politecnico di Torino

**Abstract**
In this workshop, speakers from leading industries and universities will present state-of-the-art results in advanced power amplifiers for 5G wireless communications. The 5G communication system offers high data rate up to 10 Gbps and potentially deploys beamforming techniques with high device density and dense base-station deployment. These unprecedented demands require new-generation power amplifiers (PAs) operating at millimeter-wave bands and delivering high linear power with wide-bandwidth and high efficiency yet with a highly reduced size and cost. Therefore, broadband linear PAs with high efficiency at high PAPR, supporting higher order modulation, are among the most critical components for 5G. The workshop will include a wide range of presentations highlighting the recent trends and the state-of-the-art developments of power amplifiers in different semiconductor technologies from K-band to E-band. In addition, several advanced circuit architectures to achieve high efficiency will be presented, encouraging the audience to ask questions and discuss results.

**Programme**

**mm-Wave PAs in CMOS Technologies**
Patrick Reynaert¹
¹KU Leuven MICAS

**Broadband, Linear, and High-Efficiency mm-Wave Power Amplifiers and Co-Designs with Antennas --- The Unreasonable Quest for “Perfect” mm-Wave PAs and Some Reasonable Solutions**
Hua Wang¹
¹Georgia Institute of Technology

**Integrating Doherty Power Amplifiers in K-band**
Roberto Quaglia¹, Vittorio Camarchia³
¹Cardiff University, ³Politecnico di Torino

**Millimeter-Wave High Efficiency Doherty Power Amplifier**
Anh-Vu Pham¹
¹University of California, Davis
MMW 5G PA with Build-in Broadband Linearizer
Tian-Wei Huang¹
¹National Taiwan University

Comparison of Different Designs of mm-Wave PA for Application in 5G Base Stations
Maurizio Pagani¹
¹Huawei