

# WORKSHOPS AND SHORT COURSES

Duration : 09:00 to 18:20      Sept 6, 2015



## WS12

### SiGe for mmWave and THz

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#### **Organisers**

Thomas Zimmer, University of Bordeaux, France

#### **Abstract**

This workshop will cover SiGe HBT technologies as well as SiGe enabled mm-wave and THz applications. In fact, nowadays SiGe technologies have passed the 600 GHz barrier in terms of maximum oscillation frequency and the 700 GHz barrier is foreseen to fall in 2015. Intrinsic advantages of SiGe HBTs such as co-integration with CMOS permit to design compact, reliable and cost efficient systems for mm-wave applications.

The workshop comprises 4 sessions: In the first session, the world-leading SiGe technologies from Europe will be presented. The second sessions addresses compact modelling and design challenges for mm-wave and THz devices and circuits. In the third sessions, radar related innovative design concepts will be introduced. In the last session, end users will give insights about application challenges and potential solutions for qualified products.

#### **Programme**

**9:00 - 09:10 Welcome**

**9:10 - 09:40 Advances in SiGe BiCMOS Technology for mm-Wave Applications in the DOTSEVEN Project**

*Klaus Aufinger, Infineon, Germany*

**9:40 - 10:10 55nm SiGe BiCMOS for Optical, Wireless and High-Performance Analog Applications**

*Pascal Chevalier, STMicroelectronics, France*

**10:10 - 10:40 Optimization of vertical doping profiles for high-speed SiGe HBTs**

*Holger Rücker, IHP, Germany*

**10:40 - 11:20 Coffee Break**

**11:20 - 12:05 Impact of physical effects and compact modeling on mm-wave circuit performance**

*Andreas Pawlak, Dresden University of Technology, Germany*

**12:05 - 12:50 Challenges in Modeling, Design, and Characterization of Terahertz Circuits in Silicon**

*Ullrich Pfeiffer, University of Wuppertal, Germany*

**13:00 - 14:20 Lunch Break**

**14:20 - 15:05 From Adaptive Modulation Schemes towards Software Defined Radar (SDR)**

*Andreas Stelzer, Johannes Kepler University Linz, Austria*

**15:05 - 16:00 Concepts for Highly Integrated Automotive Radar Circuits**

*Rainer Stuhlberger, Infineon - DICE GmbH & Co KG, Austria*

**16:00 - 16:30 Coffee Break**

**16:30 - 17:15 Beyond 10 Gbit/s mm-wave wireless communication using SiGe BiCMOS transceivers**

*Erik Öjefors, SiversIMA, Sweden*

**17:15 - 18:00 Application challenges and potential solutions for robust radar sensors**

*Dirk Steinbuch, Bosch, Germany*

**18:00 - 18:20 Open discussion and concluding remarks**