

Open Bipolar Workshop

3 October 2013, Bordeaux



Chair: T. Zimmer (*IMS Lab Univ. Bordeaux*)



Research in Europe on Bipolar Circuits and Technology

- RF2THz
 - Catrene
 - Cluster for Application and Technology Research in Europe on NanoElectronics
 - www.catrene.org/
- DOTSEVEN
 - 7th Framework Programme (European commission)
 - Integrated Project, section ICT: Information and Communication Technologies
 - <http://cordis.europa.eu/fp7/ict/programme/>



RF2THz at a glance

- The project CATRENE RF2THZ CT209 aims at the establishment of silicon technology platforms for emerging Radio Frequency (RF), Millimeter-Wave (MMW) and TeraHertz (THz) consumer applications.
- Duration:
 - 42 months: from 01.07.2011 to 31.12.2014
- Consortium:
 - 32 partners from 5 European countries
- Total effort:
 - 237.35PA
- Coordinator: Jean-Louis Carbonero (ST Microelectronics)



DOTSEVEN at a glance

- Development of a SiGe HBT technology with cut-off frequency ($f_{\max}$) around 700 GHz (0.7 THz).
 - Demonstration of manufacturability and integratability with CMOS
 - Demonstration of capabilities and benefits of 0.7 THz SiGe HBT technology by benchmark circuits and system applications in the 0.1 to 1 THz range
- 6 European countries, 13 partners
- 42 months duration: from 01.10.2012 to 31.03.2016
- EC grant: 8.600.000€ for a budget of ~12M€
- Coordinator:
 - Rudolf Lachner – INFINEON,
 - Deputy : Klaus Aufinger – INFINEON
 - Technical Director: Michael Schroter, University Dresden, San Diego



Overview

- Open Bipolar Workshop dedicated to Research in Europe on bipolar circuits and technology
- 3 sessions (with 3 speakers each)
 - Session 1: Technology (8h30-10h30)
 - Coffee Break: 10h30-11h00
 - Session 2: Modelling and Characterization (11h00-13h00)
 - Lunch Break: 13h00-14h00
 - Session 3: Design and demonstrator (14h00-16h00)
 - 16h00: End of the Open Bipolar Workshop OBip
 - 16h15-17h45, Internal RF2THz&DOTSEVEN Workshop
 - The Future of Bipolar in Europe, what's at the horizon 2020?
- Download the slides @:
<http://www.iee.et.tu-dresden.de/iee/eb/res/dot7/dot7.html>
Or send a mail: thomas.zimmer@ieee.org



Session 1: Technology (8h30-10h30)

- Alexander Fox, IHP (DOTSEVEN) (8h30-9h00, 10 minutes discussion)
 - *SiGe HBT Technology Development in the DOTSEVEN Project*
- Pascal Chevalier, ST Microelectronics (RF2THz): (9h10-9h40, 10 minutes discussion)
 - *A 55-nm BiCMOS Platform for Optical and Millimeter-Wave Systems-on-Chip*
- Dieter Knoll, IHP (RF2THz): (9h50-10h20, 10 minutes discussion)
 - *BiCMOS integration of photonic components*



Session 2: Modelling and Characterization (11h00-13h00)

- Michael Schröter, University of Dresden (DOTSEVEN) (11h00-11h30, 10 minutes discussion)
 - *Latest developments of HICUM/L2 for mm-wave applications*
- Bertrand Ardouin, XMOD Technologies (DOTSEVEN): (11h40-12h10, 10 minutes discussion)
 - *Tools and environment for Sub-Thz circuit design*
- Sebastien Fregonese, CNRS, (RF2THz): (12h20-12h50, 10 minutes discussion)
 - *Electro-Thermal Device Characterization & Modelling*



Session 3: Design and demonstrator (14h00-16h00)

- Marco Spirito, University of Delft (DOTSEVEN) (14h00-14h30, 10 minutes discussion)
 - *Building blocks and system architecture for mm-wave imaging radar*
- Olivier Tesson, NXP (RF2THz): (14h40-15h10, 10 minutes discussion)
 - *Passive integration and Packaging for mm-wave applications*
- Wolfgang Templ, Alcatel Lucent (RF2THz): (15h20-15h50, 10 minutes discussion)
 - *Application Scenarios from RF2THz*



Brainstorming

- **16h15-17h45, Internal RF2THz&DOTSEVEN Workshop**
 - *The Future of Bipolar in Europe, what's at the horizon 2020?*



Acknowledgement

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 - DOTSEVEN project supported by the European Commission through the Seventh Framework Programme for Research and Technological Development.
 - RF2THz project supported by the European EUREKA Program CATRENE and the French Ministry for Economics and Industry
- Thanks to the BCTM committee for hosting this WS.
- And special thanks to JB for local arrangement!