47TH EUROPEAN MICROWAVE CONFERENCE 2017
The 47th European Microwave Conference

Duration: 08:30 - 17:50
Room: Kopenhagen

WS-10

Fan-out Wafer Level and 3D Packaging Technologies for RF and mm-Wave Applications: Available Technologies and Applications from Industry

Organisers:
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Mehmet Kaynak, IHP, Germany

Abstract
In recent years, significant efforts have been devoted on heterogeneous integration technologies. Cost and reliability issues delayed the availability and easy access of these technologies. However, there has been a wide use of these technologies for consumer electronics in these days. Specifically, FOWLP technologies providing very low parasitics and high level of integration became the key technology for both low and high volume applications.

In parallel, latest developments on both highly scaled CMOS and SiGe BiCMOS technologies allow the circuits to operate at mm-wave and sub-THz frequencies. Successful circuit demonstrations up to 500 GHz paved the way for new applications at mm wave frequencies. However, packaging of these circuits with very low parasitics and low form factor seem to be the main challenge these days. In this workshop, the technology and application aspects of 3D/FOWLP technologies will be discussed. The available technologies will be presented by research institutes and industrial foundries. The successful packaged circuit examples will also be presented with some future need of the industry. Lastly, Multi-Project-Wafer (MPW) access of different available technologies for research and prototyping will also be discussed.

Programme

08:30 - 09:15 Advanced Packaging Solutions for RF Applications
Tanja Braun, Fraunhofer IZM, Germany

09:15 - 10:00 Fan Out Wafer Level System in Package
Eoin O´Toole, Nanium, Portugal

10:10 - 10:50 Break

10:50 - 11:35 Advances in High Frequency and mm-Wave Packaging
Klaus Pressel, Maciej Wojnowski, Infneon, Germany

11:35 - 12:20 Si based Interposer and Packaging Technologies for mm-Wave and THz Systems
Mehmet Kaynak, IHP, Germany

12:30 - 13:50 Break

13:50 - 14:35 Packaging for Low-Cost Millimeter-Wave Sensors
Jürgen Hasch, Robert Bosch GmbH, Germany

14:35 - 15:20 Requirements, Design Flow and Use of FOWLP Technology in High Performance Mixed Signal ASICs for Test and Measurement Applications
Gerhard Kahmen, Rohde & Schwarz, Germany

15:30 - 16:10 Break

16:10 - 16:55 RF Design of Advanced System-Integration Platforms and Integrated Antennas for Emerging Wireless Applications
Ivan Ndip, Fraunhofer IZM, Germany

16:55 - 17:40 3D Integration and Packaging Techniques for Telecom and Sensing Applications
Tauno Vähä-Heikkilä, VTT, Finland