STIMESI Training course program

IMEC: RF-SiP design and RF system integration

IMEC, Belgium, 4-6 October 2006

Abstract

IMEC's multilayer thin-film (MCM-D) technology enables the integration of high-Q inductor, resistor, and capacitor components, suitable for high frequency (>50 GHz) operation, with standard CMOS and other process derived circuits.

In this course, a broad range of issues related to RF SiP design and RF system integration will be covered. This course is oriented towards designers of RF ICs and PCBs, who increasingly face complex design issues involving a range of novel packaging and interconnect technologies.

The focus of the course will be on on-chip and off-chip passive components, circuit design and antenna integration. A number of tutorial exercises and examples will be carried out during the training course, under the guidance of skilled RF SiP designers from IMEC.

Topics

Day 1
The first day of this course will include an introduction to the MCM-D technology. Following this, an overview of the extensive microwave design library, containing parameterised cells for automatic layout generation, will be presented. Subsequent to this, hands-on training in the use of the Agilent ADS design tools with the technology library will take place. In this session, participants will work through design tutorials for RF SiP filter and Wilkinson power Splitter applications.

Day 2
The second day of the course will cover the design of passive circuits using the technology library. In addition, the use of electromagnetic field simulators in the RF SiP environment will be illustrated. Following this, guided exercises demonstrating the modelling of a Lange coupler and a flip chip transition will be carried out. Finally, attendees will work through design tutorials for a narrowband low noise amplifier (LNA), based upon flip chip mounted Pseudomorphic High Electron Mobility Transistor (PHEMT) technology, and planar antennas.

Day 3
The morning of the third day is scheduled to cover above IC circuit design with hands-on tutorial exercises on Voltage Controlled Oscillator (VCO), LNA circuits, and high Q-inductors.

What is STIMESI?
The goal of the STIMESI Stimulation Action is to stimulate European universities and research institutes to adopt MEMS and SiP technologies. The more experienced universities already active in MEMS design/technology will be assisted to increase their MEMS research activities and to design and fabricate more MEMS circuits and SiP components. Additionally other universities not currently active in this area will be given guidance to help them bootstrap their MEMS/SiP teaching and research activities.

Who should attend?
All Europractice member universities and research institutes that want to begin or strengthen their teaching and/or research activities in MEMS/SiP technologies. Also companies having interest in using MEMS in future products are invited to attend.

www.stimesi.org
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REGISTRATION FORM

Return this form to IMEC by fax to: +32 16 281 584 or by e-mail (e-copy) to Wendy.Fannes@imec.be

Name : ....................................................................................................................... .......................  
Affiliation : ................................................................................................................ ..............................  
Address : .................................................................................................................... ..........................  
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Signature : .................................................................................................................. ............................  

Location
IMEC, Kapeldreef 75, B-3001 Leuven, Belgium

Fees:
- Attendance is free for members of universities and research centers from all 25 EU countries and Norway, Iceland, Lichtenstein, Israel, Bulgaria, Croatia, Romania, Switzerland and Turkey. In case the course is overscribed, access is limited to one participant per institute and on first-come basis
- Companies: 300 € (excl. 21% VAT)
- Fee includes all lectures, course notes, lunches and refreshment breaks. Hotel accommodations and meals other than lunches are not included in the course fee.
- Cancellation by a participant between 2 and 14 days before the start of the course is subject to a 200 € administration fee. A 300 € fee will be charged for cancellation within 48 hours of the start of the course or for those who do not attend.

Participants that need hotel accommodation need to book hotels themselves.
A complete list of available hotels in Leuven are available on www.leuven.be