



ISIC-2009

12th International Symposium on Integrated Circuits

14 -16 December 2009



Green Integrated Circuits and Systems

Call for Participation

14 –16 December, 2009 • Singapore

The International Symposium on Integrated Circuits (ISIC) dates back to 1985 and is now recognized as one of the major conferences in the highly important field of theory, design, and implementation of integrated circuits and systems. The theme of the ISIC-2009 is “Green Integrated Circuits and Systems” to promote more energy-efficient chip designs and the development of environmentally friendly circuits/systems techniques to reduce power dissipation. The ISIC-2009 will offer a rich program of the highest quality with distinguished invited speakers from all over the world and provide a broad forum of exchanges for researchers and IC designers. Please visit <http://www.ISIC2009.org>.

The program features two keynotes and one tutorial session by internationally renowned speakers. This year, there are five parallel sessions, covering wide range of topics, including:

- Analog IC
- Digital IC
- Mixed-Signal IC
- RF/MM-Wave IC
- Semiconductor Devices
- Fabrication and Assembly
- Testing and Yield Enhancement
- Reliability and Failure Analysis
- System-on-Chip (SoC)
- System-in-Package (SiP)
- Reconfigurable Systems
- Sensor Systems
- Logic and System Synthesis
- Simulation, Verification and Testability
- Signal Integrity/EMC/EMI
- Computer-Aided Design

Keynote speeches

Bram Nauta, The University of Twente, The Netherlands

Editor-in-Chief for the IEEE Journal of Solid-State Circuits

Analog and RF Circuits in Nanometer CMOS

Synopsis- From a system perspective, wireless transceivers are moving towards software defined architectures. This means that wideband and flexible radio frontends are needed which can receive and transmit many different radio standards. In this presentation several analog and RF circuit innovations will be given which take benefit from the properties of nanometer scale CMOS.

Frank P. Averdung, SÜSS MicroTec AG

President & CEO

More than Moore - the Challenges of 3 Dimensional IC Integration

Synopsis- The ITRS roadmap for CMOS ICs relies on the shrinking of chip structures which is also the traditional way to lower device costs. (“More Moore”). In order to continue with a business model that makes sense, many companies will have to turn to other methods to increase circuit density, such as 3-dimensional integration (“More than Moore”). This speech shall give a glance into the future of 3D IC activities and the need for organizations to participate in the R&D efforts to capitalize on the growth opportunities in front of us.

Full-day Tutorial (14 December 2009):

Wing-Hung Ki, The Hong Kong University of Science and Technology, China

Associate Professor

IC Design of Power Management Circuits

Synopsis: This short course will cover power management circuits such as switching converters, bandgap references, charge pumps and low dropout regulators. For switching converters, the topics are converter fundamentals; CCM, DCM and PCCM operation; voltage, current and V2 control; single-inductor multi-input multi-output converters; IC design techniques of (1) control loop circuits such as clock and ramp generator, error amplifier and compensation, on-chip current sensors and slope compensation; (2) power stage design and active diodes; and (3) peripheral circuits such as UVLO and OVP. For bandgap references, the topics are op-amp based and current-voltage-mirror based bandgap references, CMOS bandgap references with and without output buffers, trimming and resistor string design. For charge pumps, the topics are charge pump topologies, gate drive, reversion reduction, charge pumps with variable conversion ratio, and multi-phase charge pumps. Finally, design issues of low dropout regulators will be highlighted.

ISIC-2009 Conference Manager: Mary Teng

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