



IEEE Toronto Section - Events

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Seminar Announcement

These events are organized by various sub-sets of the IEEE Toronto Section. The contact person listed below is the volunteer who has arranged this event. Please use the e-mail link provided if you have any questions, suggestions, or concerns.

Titles	Designing Analog and RF circuits for Ultra-low Supply Voltages
Speaker	Dr. Peter Kinget Columbia University, New York
Day and Time	Thursday, January 17, 2008, 4:00 p.m. – 5:00 p.m. Refreshments will be provided
Location	Room BA 1180 Bahen Centre for Information Technology University of Toronto - St. George Campus 40 St. George Street map - code BA
Organizer	Solid-State Circuits Chapter
Contact	Dustin Dunwell, E-mail: address
Abstract	<p>Many trends in IC technology and its applications are driving the supply voltage for integrated circuits down into the sub-1V region. Whereas important advantages for ultra-low voltage digital circuits have been demonstrated, the design of ultra-low voltage analog and RF integrated circuits poses a lot of challenges and require the rethinking of many basic analog circuit blocks. We will discuss these challenges and also opportunities for designing analog and RF integrated circuits to operate from ultra-low supply voltages down to 0.5V. Solutions ranging from exploiting the 4-terminals of the MOS device or the threshold voltage dependence on channel length, to the use of circuit topologies that require only stacks of two devices are discussed. The realization of full analog and RF system functions including 0.5V continuous-time filters, 0.5V pipelined and continuous-time sigma-delta ADC and 0.5V 2.4GHz RF receivers and synthesizers is demonstrated and the enabling architecture modifications are introduced. The techniques and results developed in this research aim to enable ultra-low voltage analog and RF circuits both in the context of relatively large threshold voltages, e.g., $V_T =V_{DD}$, as well as lower threshold voltages.</p>
Biography	<p>Peter R. Kinget received an engineering degree in electrical and mechanical engineering and the Ph.D. in electrical engineering from the Katholieke Universiteit Leuven, Belgium.</p> <p>He has worked in industrial research and development at Bell Laboratories, Broadcom, Celight and Multilink before joining the faculty of the Department of Electrical Engineering, Columbia University, NY in 2002. His research interests are in analog and RF integrated circuits and signal processing using nanoscale CMOS technologies.</p> <p>He has been an Associate Editor of the IEEE Journal of Solid State Circuits (2003-2007) and is currently serving on the Technical Program Committees of the International Solid-State Circuits Conference and the European Solid-State Circuits Conference.</p>

<http://www.ee.columbia.edu/~kinget>

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