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FACULTY OF APPLIED SCIENCE

Electrical and Computer Engineering

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PROFESSOR

Shahriar Mirabbasi

Analog and mixed-signal intergrated circuits and systems design, integrated circuit design with an emphasis on high-speed data communication and signal processing applications.

Shahriar Mirabbasi received the BSc in electrical engineering from Sharif University of Technology in 1990, and the MASc and PhD in electrical and computer engineering from the University of Toronto in 1997 and 2002, respectively. Since August 2002, he has been with the Department of Electrical and Computer Engineering, UBC where he is currently a Professor.

Dr. Mirabbasi and his team's research interests include analog, mixed-signal, and RF integrated circuit and system design for wireless and wireline data communication, data converter, sensor interface, and biomedical applications.

Research Areas

Communication Systems

Computer and Software Systems

Research Groups

System-on-Chip (SoC)

Courses

ELEC 401

Analog CMOS Integrated Circuit Design

Design and analysis of analog integrated circuits, with emphasis on CMOS design techniques. Gain stages, opamp design, frequency compensation, oscillators, A/D, D/A converters, PLL, DLL.

ELEC 201

Circuit Analysis I

The fundamentals of analysis of lumped linear time-invariant circuits; network theorems; operational amplifiers; first order circuits; DC analysis of diodes, BJT and FET circuits. [4-2*-1*]

ELEC 204

Linear Circuits

Basic concepts and analysis techniques in the context of electric and electronic circuits including Bode plots and the Laplace transform. Treatment of RLC circuits, phasors, op-amps. Introduction to nonlinear circuit elements, diodes, BJT, FET circuits. [4-0-1] Prerequisites MATH 152 - Linear Systems AND ONE of PHYS 102 PHYS 153

EECE 571Z

CMOS Design for Optoelectronics Applications

Course Structure/Operation This is a one semester course involving lectures, projects and exams. In the previous years, this used to be only a project-based course (since September 2013). Learning Objectives By the end of the course, it is expected that students will be able to:

EECE 571C

Electrical Engineering Seminar and Special Problems - CMOS DSGN APPS

EECE 588

Analog Integrated Circuit Design


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Analysis and design emphasizing CMOS implementations. Gain stages, biasing circuits, comparators, sample-and-hold circuits, switched-capacitor circuits, Nyquist-rate and oversampling A/Ds and D/As, oscillators, PLLs.

Latest Publications

2008	Low-voltage bulk-driven mixer with on-chip balun Conference Paper <i>Circuits and Systems, 2008. ISCAS 2008. IEEE International Symposium on</i>
2008	Low-power 1V 5.8 GHz bulk-driven mixer with on-chip balun in 0.18 μm CMOS Conference Paper <i>Radio Frequency Integrated Circuits Symposium, 2008. RFIC 2008. IEEE</i>
2008	SoC energy savings = reduce+reuse+recycle: A case study using a 660MHz DC-DC converter with integrated output filter Conference Paper <i>Electrical and Computer Engineering, 2008. CCECE 2008. Canadian Conference on</i>
2008	Design of an active-inductor-based termination circuit for high-speed I/O Conference Paper <i>Circuits and Systems, 2008. ISCAS 2008. IEEE International Symposium on</i>
2008	A 10Gb/s active-inductor structure with peaking control in 90nm CMOS Conference Paper <i>Solid-State Circuits Conference, 2008. A-SSCC '08. IEEE Asian</i>

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