

# 2<sup>nd</sup> IEEE Electron Devices Society Mini-Colloquium on MicroElectronics & 2<sup>nd</sup> IEEE Student Research Symposium @ UCR (ISRS-UCR)

The IEEE Electron Devices Society (EDS) Student Branch Chapter at UCR consists of both graduate and undergraduate students who have interests in electronics research. IEEE is "the world's leading professional association for the advancement of technology" and IEEE Electron Devices Society has its field of interests covering all aspects of engineering, physics, theory, experiment and simulation of electron and ion devices involving insulators, metals, organic materials, plasmas, semiconductors, quantum-effect materials, vacuum, and emerging materials. Specific applications of these devices include bioelectronics, biomedical, computation, communications, displays, electro and micro mechanics, imaging, micro actuators, optical, photovoltaics, power, sensors, MEMS/NEMS, nano and signal processing.

## PROGRAM

Time	Events
10:30 AM–12:00 PM	2 <sup>nd</sup> IEEE EDS MQ ON MICROELECTRONICS
12:00 PM–1:00 PM	2 <sup>nd</sup> ISRS-UCR POSTER FORUM with Coffee Break at EBUII 2 <sup>nd</sup> Floor Patio
12:30 PM–1:00 PM	Pizza Lunch & Best Paper Award Ceremony

**ISRS-UCR** is student research conference organized by students to offer a regular interactive forum for students to share their research results. Student presentation will be in posters. Both graduate and undergraduate students are welcome to present their papers at ISRS-UCR, which will be judged by the committee of faculty and IEEE guests for Best Student Paper Awards. Papers will be included in the Proceedings in CD-ROM.

Award Category	First Place	Second Place
Graduate	One: \$100 + Certificate	One: \$50 + Certificate
Undergraduate	One: \$100 + Certificate	One: \$50 + Certificate



### ESD's Middle Earth – Neither Device nor System Testing

**Dr. Nate Peachey** received his PhD in Physical Chemistry in 1994 from University of Nebraska–Lincoln and then was awarded a Director's Funded Postdoctoral Fellowship at Los Alamos National Laboratory. In 1996, he joined Atmel Corporation as process, technology development, device and circuit design engineer. He joined RF Micro Devices in 2005 as an ESD Design Manager in charge of ESD protection for all RFMD technologies including Si and GaAs; as well as RF antenna ESD protection. He published about 20 technical papers. In 2009, Dr. Peachey

was elected to the Board of Directors for the ESD Association. He is also involved in other activities within ESDA. Currently he is serving on the Technical and Administrative Support Committee (TAS) and is the work group chair for the Human Metal Model (HMM) work group 5.6. The culmination of this work was the release of the ANSI/ESD SP5.6-2009 HMM Standard Practice document late last year. Dr. Peachey is also one of the coauthors of the Industry Council on ESD's White Paper 3 that addresses system level ESD testing of devices and components.



### The Importance of ESD in the Electronic Industry - From today's microelectronics to future nano-structures

**Dr. Steven Voldman** received his B.S. in Engineering Science from University of Buffalo (1979); a first M.S. EE (1981) from Massachusetts Institute of Technology (MIT); a second degree EE Degree (Engineer Degree) from MIT; a MS Engineering Physics (1986) and a PhD in electrical engineering (EE) (1991) from University of Vermont under IBM's Resident Study Fellow program. He was with IBM for 25 years working on semiconductor device physics, device design, and reliability, hot electrons, leakage mechanisms, latchup and ESD. He has worked on both technology and product development in Bipolar SRAM, CMOS DRAM, CMOS logic,

Silicon on Insulator (SOI), BiCMOS, Silicon Germanium (SiGe), RF CMOS, RF SOI, smart power, and image processing. In 2008, he joined Qimonda DRAM team working on 70/58/48nm In 2009, he joined Intersil Corporation. He was chairman of SEMATECH ESD Working Group. He is Chairman of the ESD Association Work Group on TLP and VF-TLP and a member of the ESD Association Board of Directors. He initiated the "ESD on Campus" program at ESDA. He has 190 US patents. He authored five books on ESD protection and latch-up. Dr. Voldman is IEEE Fellow for "Contributions in ESD protection in CMOS, Silicon on Insulator and Silicon Germanium Technology".



### LED Backlighting Solutions for Energy Efficient Display

**Dr. Bin Zhao** received the BSEE degree from Tsinghua University, China in 1985 and the PhD degree from California Institute of Technology in 1993. He has been with SEMATECH, Rockwell International, Conexant Systems, Skyworks Solutions, and Freescale Semiconductor. His past work and experience have been involved with both VLSI technology development and analog/mixed-signal/RF IC design. In 1997, he fabricated the industry first Cu/low-k ( $k < 3$ ) dual-damascene interconnect by developing a successful fabrication process for the Cu/SiOCH low-k dual-damascene interconnect which has been widely used in today's high performance IC products. In his tenure with Conexant and Skyworks, he led and managed the design of analog

mixed-signal, power-management ICs and RF transceiver ICs for GSM, GPRS, EDGE, and WCDMA cellular handsets. Currently, he is the Director of Southern California Development Center, Freescale Semiconductor, Irvine, CA, where he leads the IC design and product development for consumer electronics and mobile communications. He has authored and coauthored more than 200 journal publications and conference presentations and holds more than 45 issued US patents. He is an IEEE Fellow and Vice President for IEEE Electron Devices Society. He is a recipient of the ECE Reader Award (2008), the Hearst Semiconductor Applications Award (2008), and the EDN Innovation Award (2009).

Date: April 2<sup>nd</sup>, 2010

Time: 10:30AM-1:00PM

Place: 2FL Patio EBUII

Paper Deadlines for  
2<sup>nd</sup> ISRS-UCR:

March 20<sup>th</sup>: Abstract

March 30<sup>th</sup>: posters  
(For the Proceedings)

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