ENERGY/POWER ANALOG CIRCUIT CHALLENGES WORKSHOP

Sponsors: SRC Texas Analog Center of Excellence, University of Texas-Dallas, and IEEE Circuits & Systems Society Dallas Chapter
September 28 and 29, 2009,
University of Texas at Dallas in the Texas Instruments Auditorium

BACKGROUND

Energy- and Power-managed analog, digital, and radio-frequency (RF) integrated circuits (ICs) have the potential for both enabling state-of-the-art and enhancing expensive and difficult-to-replace technologies at low cost using minimal space. Ground-breaking research in this area is therefore needed to energize and power long-lasting in situ micro-scale devices such as wireless micro-sensors, biomedical implants, and portable microelectronics and to better-manage light-emitting-diode (LED) displays, computers, and servers, all of which find applications in military, space, medical, security, and consumer markets. The objective of this workshop is to identify analog, power, and energy circuit research challenges that have the potential of enabling, integrating, and/or extending the operational life of otherwise short-lived and necessarily bulky solutions. Perspectives derived from the workshop will be used to formulate the scope of a nationwide call for research proposals in October. Areas of particular interest include (but are not limited to): (1) LED Lighting and Displays, (2) Portable Energy and Power, (3) Energy Harvesting, and (4) Computer and Server Power.

AGENDA

Monday, September 28, 2009
10:45 a.m. – Shuttle leaves from Hyatt to TI Auditorium in ECSS
11:00 – Check In (pick up badge, agenda, and box lunch) in TI Auditorium Foyer
12:00 – Lunch in TI Auditorium Foyer
01:00 – Welcome and Announcements, Gabriel A. Rincón-Mora, Georgia Tech
01:55 – Smart Metering Solutions and Future Challenges in Integrated Solutions, Anand Dabak, TI
02:35 – Opportunities for Integration in Power Management of Computer Servers, Prof. Khai D. T. Ngo, Virginia Tech
03:15 – Semiconductor Challenges for Motor Control, Paul Emerson, TI
03:55 – Break for 15 minutes
04:10 – LED Backlight for Energy Efficient Displays, Bin Zhao, Freescale (WebEx)
05:30 – Harvesting Ambient Energy in Miniaturized Systems, Prof. Gabriel A. Rincón-Mora, Georgia Tech
06:10 – Leave for Cocktails at Natural Sciences & Engineering Research Lab (NSERL) Building (walking distance)
07:30 – Dinner in NSERL’s 3.204
09:15 – Shuttle leaves UTD for Hyatt

Tuesday, September 29, 2009
7:15 a.m. – Shuttle leaves from Hyatt to TI Auditorium in ECSS

Texas Analog Center of Excellence
07:30 – Continental Breakfast in TI Auditorium Foyer
08:15 – Welcome and Announcements, Gabriel A. Rincón-Mora, Georgia Tech
08:20 – Power Management IC Designs for Efficient DVS On-Chip Operations, Prof. Dongsheng Ma, University of Arizona
09:00 – The Challenges of Wireless Power Design and Interoperability, David W. Baarman, Advanced Technologies Group
09:40 – Next Generation Portable Solutions: Creation of the Total Mobile System, Wayne Chen, Triune Systems
10:20 – Break for 10 minutes
10:30 – Integrated Power Management – The Case for Switched Capacitor Conversion, Prof. Seth Sanders, UC-Berkeley (WebEx)
11:10 – Full Monolithic Integration of DC/DC Power Management: Challenges and Advances, Dr. Ashraf Lotfi, Empirion
11:50 – Breakout Session Instructions and Organization, Bill Gross, TI
12:05 – Groups Assemble in assigned work rooms (box lunches provided): ECSS 4.910 & 3.503; ECSN 2.704 & 4.728
01:30 – Reassemble in Auditorium for Group Reports and Discussion
02:30 – Texas Analog Center of Excellence (TxACE) & Concluding Remarks, Kenneth K. O, TxACE Director, UTD
02:45 – Adjourn
03:15 – Shuttle leaves UTD for Hyatt

LOGISTICS

REGISTRATION: Please register on-line at: http://ecs.utdallas.edu/txace/. There will be no on-site registration. Seating is limited. Interested persons from the SRC member companies may attend the workshop via teleconference service/WebEx. Teleconference/WebEx slots are limited.

HOTEL: Rooms for attendees have been reserved at the nearby Hyatt North Dallas for $85 per night. Hotel registration can be accomplished at: http://northdallas.hyatt.com/groupbooking/dfwndutda2009. To receive the special rate identify the meeting as “Energy/Power Analog Circuit Challenges Workshop” organized by UTD.

SHUTTLE SERVICE – HOTEL TO/FROM UTD:

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<tr>
<th>Date</th>
<th>Leaves Hyatt</th>
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<tr>
<td>09/28</td>
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CONTACTS

Workshop Chair: Gabriel Rincón-Mora, (404) 385-2768, rincon-mora@ece.gatech.edu
Local Arrangements Chair: Hoi Lee, (469) 826-6050, hoilee@utdallas.edu
Logistics Chair: Dinesh Bhatia, (214) 732-7875, dinesh@utdallas.edu
Logistics Contact: Donna Kuchinski, (972) 977-9682 (TxACE Admin Assistant)

Technical Program Committee:

- Dinesh Bhatia, UTD
- Joe E Brewer, U Florida
- Marco Corsi, TI
- David Freeman, TI
- Doug Garrity, Freescale
- William Grose, TI
- Hoi Lee, UTD
- Kenneth K. O, UTD
- Gabriel Rincón-Mora, Ga Tech

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