Second Workshop on Solid State Circuits - Design, Technology and Applications - IEEE SSC-DTA'2016

Oct. 19-21, 2016, Bucharest, Romania, "Politehnica" University of Bucharest, Leu Sedium EDIL

IEEE Solid State Circuits Society Romanian Chapter - SSCS-037 - has the honor to invite you to the II-nd Workshop on Solid State Circuits - Design, Technology and Applications - IEEE SSC-DTA, Oct. 19-21, 2016, in Bucharest, Romania, at "Politehnica" University of Bucharest, Leu Building, ERG-EDIL center, organized by Romanian Chapter SSCS037.

AIM

The workshop intends to:
- bring together foreign specialists, invited speakers from DL rooster of the IEEE SSC Society and Romanian specialists, young researchers and students;
- increase the visibility of the Romanian SSCS037 Chapter;
- offer bridges between the academia, research institutes and industry;
- disseminate and promote the scientific research results;
- open direct contact among the specialists;
- start developments in the new research areas, identifying possible consortia for larger projects and participations in International research programs.

Therefore we invite representatives both from academia and industry, to find together the way to a successful collaborative work.

THEMATIC

The usual demands in industry for the integrated circuits, envisages command circuits and solid state sensors for different applications (e.g. automotive industry, bioelectronics etc). New trends in micro-nano-electronic technology bring many advantages and can provide unexpected performances for industry. Therefore, a common forum is necessary.

Another optimization resources and costs saving come from the software tools that can enhance, improve and optimize the engineering processes. An integrated vision

from solid state structure -device - integrated circuit - systems - equipments are approached in curricular field of many universities, but also within many companies that are linked to market.

TOPIC

Topic is presented bellow, (but not limited):
➢ Integrated circuits design - tools and results;
➢ CMOS Transceiver Circuits for Short-Reach Optical Communication;
➢ Approximate sensing and computing towards always-on context-awareness;
➢ Parameters extraction - from devices extractors to integrated circuits datasheet collectors;
➢ New aspects, trends in the solid state technology (SiGe, SOI, SiC, Biomaterials on silicon, Organic electronics, TFT, etc);
➢ Applications and latest SSC demands.

DEADLINE

Please send us by email: cristian.ravariu@gmail.com

your Abstract (max. 300 words in a free Word template) and complete name and affiliation or simply express your intention of participation with/without presentation.

Deadline for Abstracts and intention of participation: Oct. 01, 2016

REGISTRATION FEE

- FREE for any IEEE members and for all students; free for all talkers;

- the Romanian participants from abroad have to pay only their membership IEEE fee to becomes IEEE + SSCS members for 2017.

PROVISORY PROGRAM

In a very large way, the program will be :

- Oct. 19, 2016, arrival of DL in Bucharest
- Oct. 20, 2016 (Thursday):
  • 09:00 - 09:15 registration of the participants;
  • 09:15 - 09:30 Chairman presentation;
  • 09:30 - 10:10 - Invited speaker - Distinguished Lecturer from SSCS rooster - Prof. Marian Verhelst, from Leuven University (KU Leuven), Belgium; talk: "Approximate sensing and computing towards always-on context-awareness"; 10:10 - 10:20 questions;
  • 10:20 - 10.40 - Invited talk from Industry - Seletron SRL Bucharest (Dr ing. Arhip Janel)
  • 10:40 - 11:00 - Invited talk from IMT Research Institute (Dr. ing. Catalin Parvulescu)
  • 11:00 - 11:20 - Coffee break;
  • 11:20 - 12:10 - Invited speaker - Distinguished Lecturer from SSCS rooster - Prof. Tony Chan Carusone, from Toronto, Canada - first talk: "CMOS Transceiver Circuits for Short-Reach Optical Communication". 12:10 - 12:20 questions.
  • 12:20 - 12.40 - Invited talk from Industry - Infineon Bucharest (Ing. Cristina Gorciu);
  • 12:40 - 13:00 - Photo remember of participants
  • 13:00 - 14:00 - Lunch
  • 14:00 - 16:00 - Students session: intention - Alex Topor, Vlad Placinta, Iasi, others .
  • 16:00 - End of session;
  • 19:00 - Social Dinner in old Bucharest center
- Oct. 21, 2016, (Friday)
  • 09:00 - 09:30 - Talk of Prof. Cristian Ravariu from Bucharest;
  • 09:30 - 10:00 - Talk of Prof. Florin Babarada;
  • 10:00 - 10.30 - Talk of Dr ing. Cristian Andriesei, AT&C TECHNOLOGY Company, Iasi, Romania and Vice-chair of the SSCS37 Chapter.

- 10:30 - 11:00 - Others invites - Iasi/Cluj
- 11:00 - 11:20 - Coffee break;
- 11:20 - 12:10 - Invited speaker - Distinguished Lecturer from SSCS rooster - Prof. Tony Chan Carusone, from Canada - second talk. 12:10 - 12:20 questions.
- 12:20 - 13:00 - a round table discussion between participants and DL and other invitees.
- 13:00 - 14:00 - Lunch
- 14:00 - 14:30 - Closing ceremony, awards for students/participants in free IEEE SSCS membership for 2017.

LOCATION

Europe, Romania, Bucharest, address: B-dul Iuliu Maniu 1-3, Sector 6, Bucuresti, 061071.

Leu location of Faculty of Electronics Telecommunications and Information Technology, Block B, ERG-EDIL Center, Hall B025.

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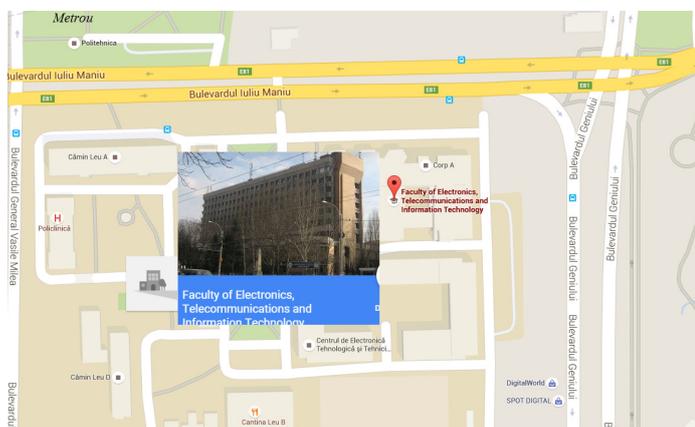
CONTACT

 If you have any questions please contact the organizers of this event:

- Chairman: Prof. Cristian Ravariu, Chair of SSCS37 Chapter, Faculty of Electronics Telecommunications and Information Technology ETTI, Phone: (office): +4021-4024840; Leu sedium, Building B, office: B108; Email: cristian.ravariu@gmail.com ; cr682003@yahoo.com ; cristian.ravariu@upb.ro ;

- Co-chairman: Prof. Florin Babarada, Faculty of Electronics Telecommunications and Information Technology ETTI, Phone: (office): +4021-4024886; Leu sedium, Building B, office: B025; Email: babflorin@yahoo.com ; florin.babarada@upb.ro

INVITED SPEAKERS FROM SSCS DL ROOSTER

1. **Prof. Marian Verhelst**
Dept. Electrical Engineering - MICAS
Kasteelpark Arenberg 10 - box 2443, 3001, KU Leuven, Belgium

Biography
Details can be finding on the SSCS link:
http://sscs.ieee.org/dl-program/distinguished-lecturer-roster

Title of presentation
Approximate sensing and computing towards always-on context-awareness

Abstract talk
Future mobile electronic devices will be equipped with more and more sensors that require always-on operation, to bring continuous context-awareness to the mobile device. Enabling this at near-zero-power budgets requires the device to exploit this context-information to dynamically tune its own performance and hardware configuration. Energy can dynamically be saved by continuously adapt sensing and processing circuitry to the observed operating context. This hardware context-awareness will be

crucial in achieving the necessary 10x energy improvement for further miniaturization of wearables and mobiles.

Enabling such context-scalability at the hardware level requires combining research on always-on context sensing, embedded machine learning, and reconfigurable computing. This talk will zoom in on two important building blocks of the context-scalable system: 1.) Context-aware sensing through self-adaptive sensor interfaces. 2.) Context-aware computing through dynamically-scalable approximate computing

2. Prof. Tony Chan Carusone

University of Toronto, Canada

Biography

Tony Chan Carusone received his Ph.D. in Electrical and Computer Engineering at the University of Toronto in 2002, and has been a faculty member there ever since. He co-authored the best paper at the 2005 Compound Semiconductor Integrated Circuits Symposium, the best student papers at the 2007, 2008, and 2011 Custom Integrated Circuits Conferences, the best invited paper at the 2010 Custom Integrated Circuits Conference, and the best young scientist paper at the 2014 European Solid-State Circuits Conference. He has served as Editor-in-Chief of the IEEE Transactions on Circuits and Systems II: Express Briefs, and as a member of the Technical Program Committee for several international conferences including the International Solid-State Circuits Conference. He currently serves on the editorial board of the IEEE Journal of Solid-State Circuits.

Prof. Chan Carusone is a regular consultant to industry in the areas of analog, mixed-signal, and communication integrated circuit design, and is an author, along with David Johns and Ken Martin, of the 2nd edition of the classic textbook "Analog Integrated Circuit Design".

Title of presentation

CMOS Transceiver Circuits for Short-Reach Optical Communication

Abstract talk

Optical links 1 – 100 metres in length require low cost, low power consumption and small size. Vertical cavity surface emitting lasers (VCSELs) can be arrayed inexpensively and can be directly modulated, avoiding the need for separate optical modulator components. VCSELs operating at 850nm coupled to multimode fiber offer a compact and inexpensive optoelectronic assembly, and are predominant for short reach optical communication. The key challenge for the transmitter circuit in such systems is to modulate single-ended VCSEL currents up to about 10mA at 25+Gb/s while maintaining bias voltages of approximately 2V across the VCSELs. At the receiver, a key challenge is to provide adequate sensitivity using photodiodes with wide (50um) aperture and, hence, large capacitance. Current commercial transceiver circuits are realized in SiGe BiCMOS, which is advantageous at both the transmitter and receiver, but CMOS offers the potential for higher levels of integration and lower power consumption. Our research efforts on low-power CMOS VCSEL drivers and optical receivers will be presented, including several 65nm CMOS designs.

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