



**IEEE SOLID-STATE
CIRCUITS SOCIETY**
Where ICs are in IEEE

October 2016

EDUCATION



Upcoming Webinar

**"The Last Untapped Spectrum:
Should Industry Care About
Terahertz?" , Presented by Dr.
Ehsan Afshari**

**Tuesday, November 1 @ 12:00 PM
EST.**

***Professional Development Hours can
be requested for this webinar. See
news section for more details***

[CLICK HERE TO REGISTER!](#)

Dr. Afshari will be available during the webinar to answer any questions. Please follow the link to register for the webinar which is free and open to all SSCS members.

Abstract:

There is an increasing interest in low cost THz systems for medical imaging, spectroscopy, and high data rate communication. Recent results in the lower THz frequencies (<1THz) suggests that standard CMOS/BiCMOS processes can compete with compound semiconductors for some applications.

In this talk, we present a few "real" applications for the CMOS THz systems as well as a few "fake" ones. Next, we discuss major challenges in realizing these systems in CMOS. Moreover, we show several novel methods to overcome these challenges to generate mW-level powers with relatively low noise using oscillators, amplifiers, and frequency multipliers. Next, we show how similar approaches can result in >100 mW at terahertz frequencies using GaN HEMT devices. Finally, we show how we can realize more complicated systems such as 2-D phased arrays and coherent imaging systems in silicon.

Bio:

Ehsan Afshari was born in 1979. He received the B.Sc. degree in Electronics Engineering from the Sharif University of Technology, Tehran, Iran and the M.S. and Ph.D. degree in Electrical Engineering from the California Institute of Technology, Pasadena, in 2003, and 2006, respectively. In August 2006, he joined the faculty in Electrical and Computer Engineering at Cornell University as an Assistant Professor, and was promoted to Associate Professor in 2012. In Fall 2016, he joined the Electrical Engineering and Computer Science department at The University of Michigan at Ann Arbor, as an Associate Professor. His research interests are mm-wave and terahertz electronics and low-noise integrated circuits for applications in communication systems, sensing, and biomedical devices.

Upcoming Distinguished Lecturer Events in November

	SPEAKER	CHAPTER	TOPIC
November 1	Peter Kinget	SSCS Macau	"RF Circuit and System Innovations to Enable a New Generation of Wireless Terminals: Field Programmability, Ultra-high Linearity, and Compressive Spectrum Scanning" For more details, please click here.
November 4	Dennis Sylvester	SSCS Singapore	"Ultra-low Power IC Design 101" For more details, please click here.

November 10	Osama Shana'a	SSCS Malaysia	Topic TBD For more details, please click here.
November 15	Albert Theuwissen	SSCS Benelux	Topic TBD For more details, please click here.
November 21	Carlo Samori	SSCS Austin	"Phase Noise in LC Oscillators: From the Basic Concepts to Advanced Topologies" "DTC-based digital PLLs" For more details, please click here.
November 23	Carlo Samori	SSCS Toronto	"Phase Noise in LC Oscillators: From Basic Concepts to Advanced Topologies" For more details, please click here.
November 25	Tom Lee	SSCS Chile	Topic TBD For more details, please click here.
November 29	Makoto Ikeda & Hideto Hidaka	SSCS Indonesia	Topic TBD For more details, please click here.

For more information on upcoming Distinguished Lecturer Tours, [CLICK HERE.](#)

CONFERENCES

Upcoming Conferences/Call for Papers

2016 IEEE Asian Solid-State Circuits Conference (A-SSCC) Japan	November 7 - 9, 2016
2017 IEEE International Solid-State Circuits Conference (ISSCC) San Francisco	February 5 - 9, 2017
2017 Design, Automation & Test in Europe Conference & Exhibition (DATE) Switzerland	March 27 - 31, 2017
2017 IEEE Custom Integrated Circuits Conference (CICC) Texas	April 24 - 26, 2017
2017 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA)	April 25 - 27, 2017

Taiwan	
<u>IEEE 2017 Wireless Power Transfer Conference (WPTC)</u> Taipei	May 10 - 12, 2017
<u>IEEE Radio Frequency Integrated Circuits Symposium (RFIC)</u> Honolulu	June 4 - 6, 2017
<u>2017 Symposia on VLSI Technology and Circuits</u> Kyoto	June 5 - 9, 2017



2017 IEEE CICC - Call for Papers

The IEEE Custom Integrated Circuits Conference (CICC) is the premier IC development conference showcasing original and innovative analog and digital circuit techniques. CICC 2017 welcomes submissions of original and unpublished work on:

- Power Management circuits and techniques
- Analog Circuits and Techniques
- Data Converters
- Wireless Transceiver and RF Circuits
- Wireline Communications Circuits and Systems for electrical and optical communications
- Design Foundations on modeling, simulation, manufacturing and testing for circuit designers
- Emerging Technologies in biomedical, aerospace, automotive, energy, environment, IoT and security applications
- and other related topics

Submission Deadline: November 7, 2016

Click [here](#) for more details and submission instructions.

RFIC 2017 Call for Papers

The 2017 IEEE Radio Frequency Integrated Circuits Symposium (RFIC 2017) welcomes technical papers. The conference will solicit papers describing original work in RFIC circuits, system engineering, design methodology, RF modeling and CAD simulation, RFIC technologies, devices, fabrication, testing, reliability, packing and modules to support RF applications in areas such as, but not limited to:

- Wireless cellular & connectivity ICs
- Low Power transceivers
- RF front-end ICs
- Mixed-signal RF and analog baseband circuits
- Reconfigurable and tunable front-ends
- Large-signal circuits
- VCOs and frequency multipliers
- Frequency generation circuits
- Modeling, CAD and testing
- Process, Device and packing technologies
- mm-Wave circuits and systems
- High-Speed data transceivers



Submission Deadline - January 9, 2017

For further information, please click [here](#).

2017 Symposium on VLSI Circuits - Call for Papers



The 2017 Symposium on VLSI Circuits welcomes the submission of original papers on all aspects of VLSI Circuits. The Symposium on VLSI Technology will overlap with the Symposium on VLSI Circuits and will be held at the same location. Papers are welcome in the following areas:

- Innovative system directions
- Digital circuits, processors and architectures, including circuits and techniques
- Memory circuits, architectures and interfaces
- Frequency generation and clock circuits
- Analog and mixed-signal circuits
- Wireline receivers and transmitters
- Wireless receivers and transmitters
- Power conversion circuits
- Imagers, displays, sensors, VLSI circuits and systems
- and other related topics

Submission deadline: January 23, 2017

Click [here](#) for more details and submission instructions

2017 IEEE Wireless Power Transfer Conference - Call for Papers

The 2017 IEEE Wireless Power Transfer Conference (WPTC) is a conference on wireless powering. The meeting is intended to cover a broad range of areas related to devices, integrated circuits, systems and applications of WPT across the electromagnetic spectrum. WPTC welcomes submissions of original work on:

- Technologies for wireless power transfer and energy harvesting
- Power transmitters and receivers for wireless power transfer and energy harvesting
- Integrated circuits and systems for wireless power transfer and energy harvesting
- Applications of wireless power transfer and energy harvesting
- Other device, system or application topics related to wireless power
- and other topics

Submission deadline: February 6, 2017

Click [here](#) for more details

NEWS



SSCS T-Shirt Design Contest

The IEEE Solid-State Circuits Society would like to announce the **"Powered by ICs" T-Shirt Design Contest!** The contest is open to all SSCS Student Members and Graduate Student Members. The theme

of the contest is to highlight the cool technologies and applications that are empowered by ICs and to promote the pride of being an IC designer and a member of SSCS. Prizes include \$1,000 cash for the first place winner and more. For instructions on how to enter and eligibility requirements, please [click here](#). If you have any questions regarding the contest please send an email to sscs_contest@ieee.org.

IEEE SSCS BrowZine App Now Contains Articles in Press

The IEEE SSCS App has just had an update which now supports the Early Access content from JSSC via its Articles in Press Feature. Articles in Press feature the latest peer-reviewed content from the JSSC giving researchers access to the latest content before it has been fully edited and placed in an issue. With the latest version of the app, users will now have easy access to this content for the JSSC by simply changing the issue and seeing the "Articles in Press" area above the current issue. You can read more about this new feature by [clicking here](#).



Earn Continuing Education Hours

Have you attended an SSCS webinar? Attendees of upcoming and past webinars have the opportunity to earn professional development hours. Certificates of completion are offered to participants who view a webinar. A certificate of completion confirms one hour of professional development. After you attend the webinar, you may request a certificate of completion by completing the form [HERE](#).

Seeking News

Please send any chapter news or happenings (Distinguished Lecturer visits, events hosted by your SSCS chapter, awards received by members, etc) to Abira Sengupta, SSCS Magazine News Editor, for inclusion in an upcoming issue of the magazine. Please email - Abira.Sengupta@ieee.org. We look forward to receiving your news articles!

For more chapter news, [check out](#) the Summer 2016 issue of the Solid-State Circuits Magazine.

FEEDBACK

Let us know what you think! Please [email us](#) to send us your comments about the newsletter, what you would like to see included each month, or any other comments.

[CLICK HERE TO VISIT OUR WEBSITE](#)

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