



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

**February 2017**

## EDUCATION

### Upcoming Distinguished Lecturer Events in March

|          | SPEAKER      | CHAPTER                | TOPIC   |
|----------|--------------|------------------------|---|
| March 21 | Naveen Verma | SSCS Austin            | Topic: TBD<br>For more details, <a href="#">please click here.</a>  |
| March 28 | Edith Beigne | University of Michigan | Topic: TBD<br>For more details, <a href="#">please click here.</a>  |
| March 29 | Peter Kinget | SSCS Ireland & UK      | Topic: RF Circuit and System Innovations to Enable a New Generation of Wireless Terminals: Field programmability, Ultra-high Linearity, and Compressive Spectrum Scanning<br>For more details, <a href="#">please click here.</a> |

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

## CONFERENCES

### Upcoming Conferences

|  |                     |
|--|---------------------|
| <a href="#">2017 Design, Automation &amp; Test in Europe</a> | March 27 - 31, 2017 |
|--|---------------------|

|  |                        |
|--|------------------------|
| <b><u>Conference &amp; Exhibition (DATE)</u></b><br>Switzerland  |                        |
| <b><u>2017 International Symposium on VLSI Technology, Systems and Applications (VLSI-TSA)</u></b><br>Taiwan | April 24 - 27, 2017    |
| <b><u>2017 International Symposium on VLSI Design, Automation and Test (VLSI-DAT)</u></b><br>Taiwan          | April 24 - 27, 2017    |
| <b><u>2017 IEEE Custom Integrated Circuits Conference (CICC)</u></b><br>Texas                                | April 30 - May 3, 2017 |
| <b><u>IEEE 2017 Wireless Power Transfer Conference (WPTC)</u></b><br>Taipei                                  | May 10 - 12, 2017      |
| <b><u>IEEE Radio Frequency Integrated Circuits Symposium (RFIC)</u></b><br>Honolulu                          | June 4 - 6, 2017       |
| <b><u>2017 Symposia on VLSI Technology and Circuits</u></b><br>Kyoto   | June 5 - 8, 2017       |
| <b><u>2017 IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)</u></b><br>Taiwan   | July 24 - 26, 2017     |
| <b><u>2017 European Solid-State Circuits Conference (ESSCIRC)</u></b><br>Belgium                             | Sept 11 - 14, 2017     |



## 2017 IEEE Custom Integrated Circuits Conference

Registration for [CICC 2017](#) is now open. The conference will be held April 30 - May 3 in Austin, Texas.

CICC is the premier conference devoted to IC development. The conference program is a blend of oral presentations, exhibits, panels, and forums. The conference sessions present original first published technical work and innovative circuit technologies that tackle practical problems. CICC is the conference to find out how to solve design problems, improve circuit design techniques, get exposure to new technology areas, and network with peers, authors, and industry experts.

[Click here for registration information](#)

## RFIC 2017

The 2017 IEEE Radio Frequency Integrated Circuits (RFIC) Symposium will be held in Honolulu, Hawaii during June 4-6. The RFIC Symposium is the premier IC design conference focused exclusively on the latest

### RFIC 2017 Schedule Summary

| Date/Time | Saturday<br>June 3 | Sunday<br>June 4   | Monday<br>June 5                    | Tuesday<br>June 6       |
|-----------|--------------------|--|-------------------------------------|-------------------------|
| AM        |                    | RFIC Workshops   | RFIC Technical Sessions             | RFIC Technical Sessions |
| Lunch     |                    |  | 5G Panel                            | Game/Quiz Panel         |
| PM        | Registration       | RFIC Workshops   | RFIC Technical Sessions /*5G Summit | *5G Summit              |
| Evening   |                    | RFIC 5G Plenary<br>RFIC Reception<br>Joint Industry Showcase and Interactive Forum |                                     | *5G Executive Forum     |

\*5G Summit is a separate conference that will offer complementary 5G overview presentations

advances in RF, Microwave and Millimeter Wave integrated circuit (IC) technologies and designs, as well as innovations in high frequency analog/mixed-signal ICs. We cordially invite you to participate in this international symposium.

The 2017 RFIC symposium will begin on Sunday, June 4, 2017, with sixteen RFIC focused workshops (ten full-day and six half-day), there will be several joint

RFIC/IMS workshops on Sunday and Monday. These workshops cover a wide range of advanced topics in RFIC technology and IC design including 5G systems and beyond.

Following the full day of Sunday workshops, the RFIC Plenary Session will be held in the evening beginning with conference highlights, the presentation of the Student Paper Awards and the Industry Best Paper Award.

On Monday and Tuesday, the RFIC will have multiple tracks of oral technical paper sessions.

Please visit the RFIC 2017 website (<http://rfic-ieee.org/>) for more details and updates.

## CALL FOR PAPERS

### 2017 IEEE International Midwest Symposium on Circuits and Systems - Call for Papers

The 2017 IEEE International Midwest Symposium on Circuits and Systems is the oldest Circuits and Systems Symposium sponsored by IEEE. The 60th edition will be held on the campus of Tufts University, Boston, MA. MWCAS 2017 will include oral and poster sessions, a student paper contest, tutorials given by experts in circuits and systems topics, and special sessions. Suggested paper topics include, but are not limited to:

- Analog Circuits and Systems - Analog Circuits, Analog Systems, Biomedical Electronics, Bioengineering Systems, Linear Analog Systems, Non-Linear Analog Systems, System Architectures, Neuromorphic Systems.
- Digital Circuits and Systems - Digital Integrated Circuits, System On a Chip (SOC) and Network on a Chip (NOC), Digital Filters, Hardware-Software Co-Design.
- Communications Circuits and Systems - Communications Circuits, Computers, and Applications, Communications Systems and Control, Information Theory, Coding, and Security.
- RF and Wireless Circuits and Systems - RF Front-End Circuits, Mixed-Signal RF and Analog Baseline Circuits, Wireless Mobile Circuits and Systems and Connectivity, VCO's and Frequency Multipliers.
- Sensor Circuits and Systems - Technologies for Smart Sensors, Sensor Fusion, Control Systems, Mechatronics and Robotics.
- Converter Circuits and Systems - Analog to Digital Converters, Digital to Analog Converters, DC-DC Converters.
- Signal and Image Processing - Analog and Mixed Signal Processing, Digital Signal Processing, Signal Processing Theory and Methods, Image, Video, and Multi-Dimensional Signal Processing.
- Hardware Design - Processor and Memory Design, MEMS/NEMS, Nano-Electronics and Technology, Optics and Photonics, Power Management, Power Harvesting, and Power Electronics, Photovoltaic Devices/Panels and Physically Unclonable
- Hardware Security - Hardware Authentication and Physically Unclonable Functions (PUFs), Trusted Microelectronics, Hardware Anti-Tamper, Architectural System Security, Other Hardware Security.

A full list of suggested paper topics can be found [here](#).

**Submission deadlines: March 18, 2017 for Tutorial/Special Session Proposals and Regular/Student Paper Submissions. April 1, 2017 for Special Session and Invited Paper Submissions.**

Click [here](#) for more details

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## 2017 ESSCIRC - Call for Papers

The European Solid-State Circuits Conference (ESSCIRC) welcomes the submission of papers. The conference will be held September 11- 14, 2017 in Leuven, Belgium. Manuscript guidelines as well as instructions on how to submit electronically can be found [here](#).

Papers should focus on the 2017 conference topics:

- Analog - OP-Amps and instrumentation amplifiers CT and DT filters; SC circuits, Comparators; Nonlinear circuits; Voltage and current references; HV circuits; Nonlinear analog circuits; Digitally assisted analog circuits
- Data Converters- Nyquist-rate and oversampling A/D and D/A converters; Sample-hold circuits; Time-to-digital converters; ADC and DAC calibration/error correction circuits.
- RF and mm-Wave - RF/IF building blocks like LNAs, mixers, power amplifiers, IF amplifiers; Power detectors; Subsystems for RF, mm-wave and THz design with focus on novel design techniques.
- Frequency Generation - Modulators/demodulators; VCOs; PLLs; DLLs; Frequency synthesizers; Frequency dividers; Integrated passive component.
- Wireless and Wireline Systems - Receivers/transmitters/transceivers for wireless/wireline systems Gigabit serial links; Clock and data recovery; Equalization; Advanced modulation systems; Base station and handset applications; TV/radio/satellite receivers and transmitters; Radars.
- Sensors, Imager and Biomedical - Sensor subsystems and interfaces; Accelerometers; Temperature sensing; Imaging and smart imaging chips; AMOLED; MEMs subsystems; RF MEMs; Implantable electronic ICs; Biomedical imagers; Bio-MEMs integrated systems; Lab-on-chip; Organic LED and liquid-crystal-display interface circuits; Flat panel and projection display.
- Digital, Security and Memory - Techniques for energy efficient and high performance digital circuits; I/O and inter-chip communication; Reconfigurable digital circuits; Security and encryption circuits; Clocking; Arithmetic building blocks; Memories; Microprocessors; DSPs; Memory interfacing; Bus interfacing; Many core and multirate ICs; 3D integration.
- Power Management - Energy transducers; Power regulators; DC-DC converters; Energy-scavenging circuits; LDOs Boost-buck-converters; LED drivers; Sequencers and supervisors; Green circuit.

[Download the Call for Papers here.](#)

**Submissions must be received by April 10, 2017**

Click [here](#) for more details

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## BioCAS 2017

The [13th IEEE BioCAS](#) welcomes the submission of papers. The conference will be held October 19 - 21 in Turin, Italy. BioCAS serves as a premier international forum for presenting the interdisciplinary research and development activities at the crossroads of medicine, life sciences, physical sciences and engineering that will shape tomorrow's medical devices and healthcare systems.

Paper topics can be on (but are not limited to) the following topics:

- Assistive, Rehabilitation, and Quality of Life Technologies
- Bio-inspired and Neuromorphic Circuits and Systems
- Biofeedback, Electrical Stimulation, and Closed-Loop Systems

- Biomedical Imaging Technologies & Image Processing
- Biosensor Devices
- Biosensor Interfacing Circuits
- Biosignal Recording & Processing
- Body Area/Sensor Network
- Brain Machine Interfaces
- Brain Machine Interfaces
- Electronics for Brain Science
- Genomics and Systems Biology
- Implantable Electronics
- Innovative Circuits for Medical Applications
- Lab-on-Chip & BioMEMS
- Medical Information Systems and Bioinformatics
- Wireless and Energy Harvesting/Scavenging Technology

[Download the call for papers here](#)

**Important Deadlines: April 21 - Special Session Proposal Deadline, June 16 - Paper Submission Deadline, July 14 - Demonstration Proposal Submission Deadline**

## PUBLICATIONS

The latest in SSCS Flagship Publications...



## IEEE Journal of Solid-State Circuits Vol. 52, Issue 2

[Injection-Locked Wideband FM Demodulation at IF](#)

*Akshay Visweswaran , John R. Long*

[Two mm-Wave Vector Modulator Active Phase Shifters With Novel IQ Generator in 28 nm FDSOI CMOS](#)

*Domenico Pepe , Domenico Zito*

[A High-Gain mm-Wave Amplifier Design: An Analytical Approach to Power Gain Boosting](#)

*Hadi Bameri , Omeed Momeni*

[Watt-Level mm-Wave Power Amplification With Dynamic Load Modulation in a SiGe HBT Digital Power Amplifier](#)

*Kunal Datta , Hossein Hashemi*

[Dynamic Waveform Shaping With Picosecond Time Widths](#)

*Xue Wu ; Kaushik Sengupta*

[A 0.92-THz SiGe Power Radiator Based on a Nonlinear Theory for Harmonic Generation](#)

*Hamidreza Aghasi , Andreia Cathelin , Ehsan Afshari*

[A 46  \$\mu\$ W 13 b 6.4 MS/s SAR ADC With Background Mismatch and Offset Calibration](#)

*Ming Ding , Pieter Harpe , Yao-Hong Liu , Benjamin Busze , Kathleen Philips , Harmke de Groot*

[A 12-b ENOB 2.5-MHz BW VCO-Based 0-1 MASH ADC With Direct Digital Background Calibration](#)

*Kareem Ragab , Nan Sun*

[A 43-mW MASH 2-2 CT Î€Î€ Modulator Attaining 74.4/75.8/76.8 dB of SNDR/SNR/DR and 50 MHz of BW in 40-nm CMOS](#)

*Alexander Edward , Qiyuan Liu , Carlos Brisenov-Vidrios , Martin Kinyua , Eric G. Soenen , Aydın İlker Karsilayan , Jose Silva-Martinez*

[A 40-Gb/s SiGe-BiCMOS MZM Driver With 6-V p-p Output and On-Chip Digital Calibration](#)

*Leonardo Vera , John R. Long*

[A 0.4 µg Bias Instability and 1.2 µg/√ Hz Noise Floor MEMS Silicon Oscillating Accelerometer With CMOS Readout Circuit](#)

*Xi Wang , Jian Zhao , Yang Zhao , Guo Ming Xia , An Ping Qiu , Yan Su , Yong Ping Xu*

[Low-Power CMOS Vision Sensor for Gaussian Pyramid Extraction](#)

*Manuel Suárez , Víctor Manuel Brea , Jorge Fernández-Berni , Ricardo Carmona-Galán , Diego Cabello , Ángel Rodríguez-Vázquez*

[Offset-Canceling Current-Sampling Sense Amplifier for Resistive Nonvolatile Memory in 65 nm CMOS](#)

*Taehui Na , Byungkyu Song , Jung Pill Kim , Seung H. Kang , Seong-Ook Jung*

[A Performance-Aware Low-Quiescent Headphone Amplifier in 65-nm CMOS](#)

*Fei Xiao , Pak Kwong Chan*

[Design-Oriented Analysis for Miller Compensation and Its Application to Multistage Amplifier Design](#)

*Wanyuan Qu , Shashank Singh , Yongjin Lee , Young-Suk Son , Gyu-Hyeong Cho*

[A 0.26-nJ/node, 400-kHz Tx Driving, Filtered Fully Differential Readout IC With Parasitic RC Time Delay Reduction Technique for 65-in 169Å-97 Capacitive-Type Touch Screen Panel](#)

*Sang-Hui Park , Hyun-Sik Kim , Jun-Suk Bang , Gyu-Ha Cho , Gyu-Hyeong Cho*

[CMOS Microflow Cytometer for Magnetic Label Detection and Classification](#)

*Pramod Murali , Ali M. Niknejad , Bernhard E. Boser*

[A 1000 frames/s Vision Chip Using Scalable Pixel-Neighborhood-Level Parallel Processing](#)

*Joseph A. Schmitz , Mahir K. Gharzai , Sina Balkır , Michael W. Hoffman , Daniel J. White , Nathan Schemm*

[A 100 MHz Hybrid Supply Modulator With Ripple-Current-Based PWM Control](#)

*Min Tan , Wing-Hung Ki*

[A Multiphase Switched-Capacitor DC-DC Converter Ring With Fast Transient Response and Small Ripple](#)

*Yan Lu , Junmin Jiang , Wing-Hung Ki*

[A 5.28-Gb/s LDPC Decoder With Time-Domain Signal Processing for IEEE 802.15.3c Applications](#)

*Mao-Ruei Li , Chia-Hsiang Yang , Yeong-Luh Ueng*

[3-Gb/s High-Speed True Random Number Generator Using Common-Mode Operating Comparator and Sampling Uncertainty of D Flip-Flop](#)

*Sang-Geun Bae , Yongtae Kim , Yunsoo Park , Chulwoo Kim*

[Patent Abstracts](#)

*K.R. Lakshmikummar*

## NEWS

### SSCS Members Can Join CAS for Just \$5 Use Code SSCXCAS2017

If you have not renewed your SSCS membership for 2017, you can enter the promotion code at checkout to join CAS for \$5 and start making the added connections you need to move forward professionally. If you

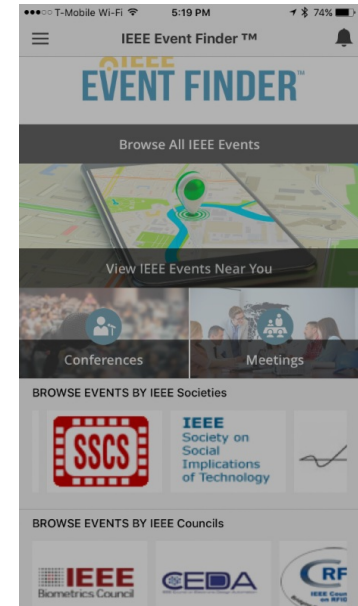
have already renewed for 2017, sign in with your IEEE account. The discounted CAS membership will be present in your cart.

[Click here for more details.](#)

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## IEEE Event Finder

The new free IEEE Event Finder mobile app lets you search for an IEEE event not only by the event name, but also by city, state, or province. Events can even be searched by IEEE region, section, chapter or by the IEEE society sponsoring the event. The event finder makes it easy to add any IEEE event to your mobile calendar. You can also share its URL via social media, email, or text message. You can download the free app from the [Apple App](#) or [Google Play](#) store.



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## 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](#).

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## 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](mailto:Abira.Sengupta@ieee.org). We look forward to receiving your news articles!

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For more chapter news, [check out](#) the Winter 2017 issue of the Solid-State Circuits Magazine.

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## 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.

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