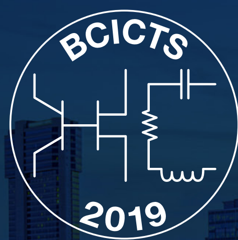

2019 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium (BCICTS)

November 3–6, 2019 | Loews Vanderbilt Hotel, Nashville, TN, USA

INTEGRATED CIRCUITS and DEVICES in
GaAs, InP, GaN, SiGe, and other compound semiconductor and CMOS technologies

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CALL FOR PAPERS

The 2019 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium (BCICTS) is the IEEE-approved merger of the Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) and the Compound Semiconductor IC Symposium (CSICS). BCICTS is the forum for developments in bipolar, BiCMOS, and compound semiconductor circuits, devices, and technology. Coverage includes all aspects of the technology, from materials, device fabrication, device phenomena, TCAD modeling, compact modeling, integrated circuit design, testing, and system applications. A wide range of integrated circuit technologies are covered including CMOS, bipolar and field-effect transistors realized in materials such as SiGe, GaAs, GaN, InP, SiC. The latest results in wireless, analog, RF, microwave, high-speed digital, mixed signal, optoelectronic, millimeter wave, and THz integrated circuits are embraced. Subject area groupings are:

HIGH-SPEED DIGITAL, MIXED-SIGNAL, AND OPTOELECTRONIC ICs

Mixed analog/digital ICs - Digital ICs - (high-speed) DACs and ADCs - Networking ICs, MUX/DEMUX, Clock and data recovery, Decision circuits, Equalizers - Optical data links, Laser and modulator drivers, optoelectronics and photonics ICs

ANALOG, RF, AND MICROWAVE ICs

RF circuits and systems - Radio and transceiver subsystems - LNAs - AGCs - Mixers - Voltage controlled oscillators - Frequency synthesizers - Power amplifiers - RF switches - Noise and distortion suppression - RF Packaging - Integrated RF passives. Analog, RF, power conversion, High-voltage ICs - Biomedical electronics - Power Management ICs - Energy harvesting ICs - Motor controls - Analog subsystems within a VLSI chip - Packaging of high-performance ICs- Op amps - Voltage references and regulators - Integrated filters - Sensors and actuators.

mm-WAVE AND THz ICs

Millimeter - wave circuits and systems - THz circuits and systems. mm-Wave switches and amplifiers. Phased-array antenna circuits

DEVICE PHYSICS

New device physics phenomena in Si, SiGe, SiC, GaN, MOS, and III-V HBTs and FETs - Device design issues and scaling limits - Hot electron effects and reliability physics - Transport and high field phenomena - Noise - Linearity/Distortion - Novel measurement techniques - Operation in extreme environments (low/high temperatures, radiation effects), and ESD phenomena.

MODELING AND SIMULATION

Improved silicon-based BJT and HBT models and physics-based modeling techniques - Improved III-V HBT and FET models and physics-based modeling techniques - Parameter extraction methods and test structures - High-frequency measurement, calibration and de-embedding techniques - RF and thermal simulation techniques - Modeling of passives, interconnect and packages - Statistical Modeling - Device, process and circuit simulation - CAD/Modeling of power devices - Packaging of power devices.

COMPOUND SEMICONDUCTOR DEVICE TECHNOLOGY

Device and IC manufacturing processes, testing methodologies, & reliability - Integration of III-V devices on Si - High performance devices such as GaN RF and power conversion devices - near-THz SiGe HBTs & InP HEMTs - Novel devices such as tunnel FETs (TFETs) - carbon nanotubes, MEMS, graphene & diamond transistors. Optoelectronic and photonic devices such as optical modulators, lasers, photodetectors, and Silicon Photonics - Thermal management technologies, thermal simulation - Advanced packaging of high-power devices and ICs.

SILICON AND RELATED ALLOY SEMICONDUCTOR DEVICE PROCESS TECHNOLOGY

Advances in Si, SiGe (and other Si alloys) bipolar/BiCMOS processes and device structures demonstrating high speed, low power, low noise, etc. - Manufacturing solutions related to bipolar/BiCMOS processes - Fabrication of high-performance passive components, sensors, and MEMs - Process technology related to discrete and integrated bipolar/BiCMOS power devices (IGBT and RF power devices) - 3D integration - Silicon photonics - Integration of compound devices on Si.

IMPORTANT DATES

Friday May 3, 2019: Abstracts Due | Friday, June 21, 2019: Decision E-mail Sent | Friday, August 30, 2019: Final Manuscript Due

Authors must submit an abstract (4 pages, or less, including figures and other supporting material) of results not previously published or not already accepted by another conference. Papers will be selected based on the abstract.

The abstract must concisely and clearly state:

a) The purpose of the work
b) What specific new results have been obtained
c) How it advances the state-of-the-art or the industry
d) References to prior state-of-the-art
e) Sub-committee preference:
   - Analog, RF, and Microwave ICs
   - Device Physics
   - High-Speed Digital, Mixed-Signal, and Optoelectronic ICs
   - Modeling and Simulation
   - mm-Wave and THz ICs
   - Process and Device Technology

Abstracts must include: title, author(s) name(s) and affiliation(s), corresponding authors' postal and e-mail addresses, and telephone numbers. The committee will try to honor the authors' committee preference but reserves the right to review the paper in other categories.

Company and governmental clearances must be obtained prior to submission of the abstract.

Accepted work may be used for publicity purposes. Portions of the abstracts may be quoted in articles publicizing the Symposium. ***Please note on the abstract if this is not acceptable.***

Abstracts (PDF only) must be submitted electronically.

Authors will be informed of a decision by June 21, 2019. Authors of accepted papers are required to submit a 4-page camera-ready PDF by August 30, 2019 for inclusion in the Symposium Digest.

Further questions on abstract submission may be addressed to the Symposium Technical Program Chair:

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Ph: +1 480-814-4360
bruce.green@nxp.com

Symposium information, including abstract submission instructions and a link to the abstract submission system is available on the BCICTS website at: http://www.bcicts.org