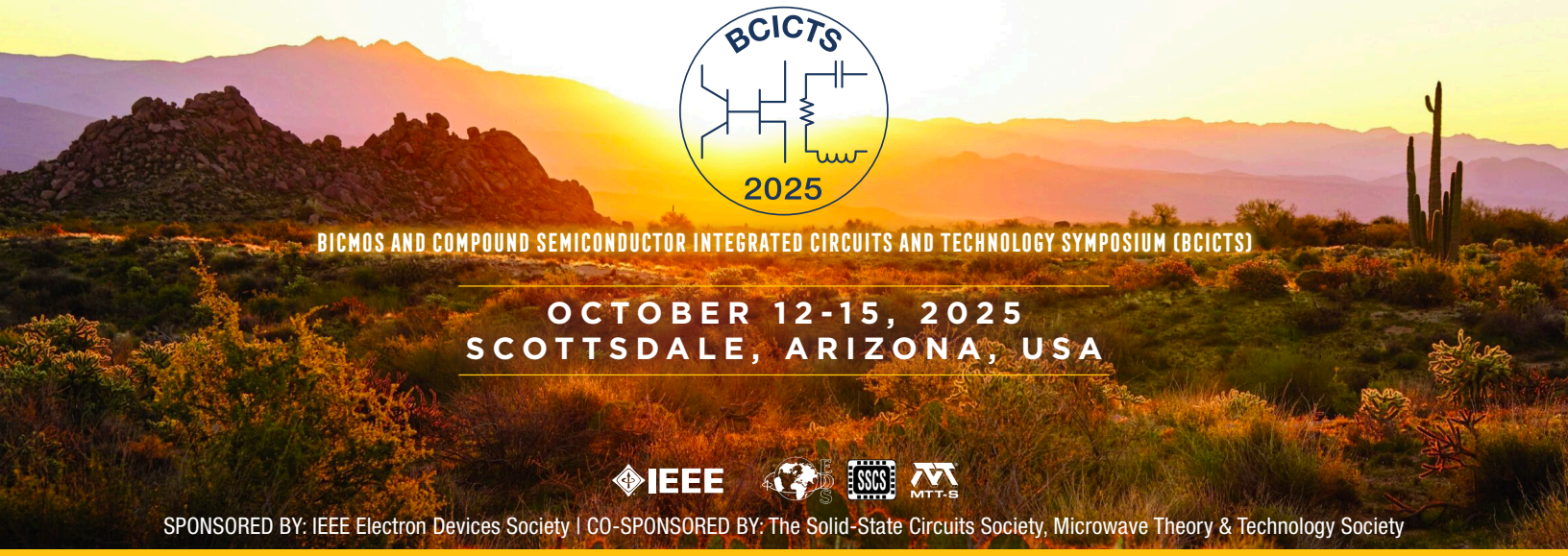
INTEGRATED CIRCUITS and DEVICES in Si, SiGe, GaN, InP, GaAs and other compound semiconductors and related technologies

2025 BCICTS CALL FOR PAPERS



BICMOS AND COMPOUND SEMICONDUCTOR INTEGRATED CIRCUITS AND TECHNOLOGY SYMPOSIUM (BCICTS)

OCTOBER 12-15, 2025
SCOTTSDALE, ARIZONA, USA

IEEE EDS SSCS MTT-S

SPONSORED BY: IEEE Electron Devices Society | CO-SPONSORED BY: The Solid-State Circuits Society, Microwave Theory & Technology Society

SUBMISSION DEADLINE: FRIDAY, MAY 9, 2025

The IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium (BCICTS) technical sub-committees are organized to reflect the rapidly evolving developments in bipolar, BiCMOS and compound semiconductor circuits and devices. Submissions are encouraged in all areas of advanced circuits, devices, and modeling, with particular emphasis on:

- Bipolar/BiCMOS devices, circuits and technologies
- 5G/6G, satellite communication ICs
- GaN HPAs/LNAs, InP THz PAs
- High Performance RF Switch Technologies
- GaN HEMT and other wide bandgap power devices
- Analog, RF & Microwave ICs
- mmW & THz ICs
- Process & Device Technology
- Modeling/Simulation
- Optical CMOS/SiGe Transceivers
- High Speed Digital, Mixed Signal, and Electro-Optic ICs
- Cryogenic devices and circuits

EXTENDED VERSIONS OF SELECTED PAPERS FROM THE SYMPOSIUM ARE INVITED FOR PUBLICATION IN THE SEPTEMBER 2026 ISSUE OF THE IEEE JOURNAL OF SOLID STATE CIRCUITS

Detailed descriptions of the topic areas within these subject groups can be found on the BCICTS website (www.bcicts.org) and are listed in the 2nd page of this call for paper.

IMPORTANT DATES

Submission Deadline: Friday, May 9, 2025 | Notification Date: Friday, July 11, 2025 | Camera Ready Papers Due: Friday, Sep 5, 2025

Authors must submit a paper (4 pages or less, including figures and other supporting material) documenting results not previously published or not already accepted by another conference. Papers will be selected based on their technical quality.

The paper 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 ICs
   - RF and Microwave ICs
   - mm-Wave and THz ICs
   - Silicon and related semiconductor alloy; processing
   - Silicon and related semiconductor alloy; modeling
   - High-Speed Digital, Mixed-Signal, and Optoelectronic ICs
   - Compound Semiconductor Modeling
   - Compound Advanced Devices and Technology
   - Device Physics

Candidate papers 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 paper.

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

Papers (PDF only) must be submitted electronically.

Authors will be informed of a decision by Friday, July 11, 2025

Authors of accepted papers are required to submit a **4-page camera-ready PDF.**

Further questions on paper submission may be addressed to:

Michael Roberg, Qorvo, Inc, Symposium Chair
michael.roberg@qorvo.com

Jack Pekarik, GlobalFoundries, Technical Program Committee Chair
jack.pekarik@globalfoundries.com

Sadayuki Yoshitomi, Rapidus Corporation, Publications Chair
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Symposium information, including paper submission instructions and a link to the paper submission system is available on the BCICTS website at: www.bcicts.org

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PAPERS IN THE FOLLOWING AREAS ARE REQUESTED:

Analog ICs
Innovative Analog Circuits - High Precision OpAmps, DC-DC converters, Charge pumps, LDOs, GaN drivers, Sensors, ADC/DACs

RF and Microwave ICs
RF circuits and systems - Radio and transceiver subsystems - LNAs - AGCs - Mixers - Voltage controlled oscillators - Frequency synthesizers - Power amplifiers - RF switches – Phase Shifters – Attenuators - Noise and distortion suppression - RF Packaging - Integrated RF passives – RF and microwave power conversion, High-voltage RF/microwave ICs – RF/microwave biomedical electronics - Energy harvesting ICs - Packaging of high performance ICs- Integrated filters – MMICs

mm-Wave and THz ICs
mm-Wave & THz circuits and systems - Phased arrays - Frequency generation and detection - Radars and power amplifiers

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

Silicon and Related Alloy Semiconductor Device and Circuit Modeling
Improved silicon-based BJT and HBT 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

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

Compound Semiconductor Device and Circuit Modeling and Simulation
- 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 Advanced Devices and Technology
Device and IC manufacturing processes, testing and modeling methodologies, & reliability evaluations - Integration of III-V devices on Si - High performance/high power devices such as GaN RF, SiC and power conversion devices - Near THz SiGe HBTs, InP HEMTs & HBTs or other devices - Novel material based devices (using, for example, ultra-wide bandgap, chalcogenide or perovskite materials) - CNTFETs and other 1D, 2D or otherwise novel dimensionally constrained device structures - Transistor or other device structures engineered for enhanced intrinsic linearity - Optoelectronic and photonic devices such as optical modulators, lasers, photodetectors, and silicon photonics -Thermal management technologies, thermal simulation - Advanced packaging of high-power and/ or high frequencies devices and ICs, including chip stacking or heterogeneous integration strategies

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

Further questions on paper submission may be addressed to:

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