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 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 IC’s
- Compound Semiconductor Modeling
- Compound Advanced Devices and Technology
- Device Physics

Submission Deadline: **Friday May 6, 2022**

Decision E-mail Sent: **Friday, July 1, 2022**
Final Manuscript Due: **Wednesday, Aug 31, 2022**

Authors must submit a paper (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 quality of 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 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 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.

Further questions on abstract submission may be addressed to:

Breandán Ó hAnnaidh, Analog Devices, TPC Co-Chair
breandan.ohanaidh@analog.com

Jon Mooney, Raytheon, Publications Chair
jmooney@raytheon.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](http://www.bcicts.org)
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.

**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 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.

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Jon Mooney, Raytheon, Publications Chair jmooney@raytheon.com

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