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**

**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 BJTs 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.

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

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