The 2018 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, to device modeling, 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, & OPTOELECTRONIC ICs: Mixed analog/digital ICs - Digital ICs - (high-speed) DACs and ADCs - Op amps - Voltage references and regulators - Integrated filters - Sensors and actuators - Networking ICs - MXIC/MOS/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 & 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, GaAs, InP, 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 modelling techniques - Improved III-V HBT and FET models and physics-based modelling techniques - Parameter extraction methods and test structures - High-frequency measurement, calibration and de-embedding techniques - RF and thermal simulation techniques - Modelling of passives, interconnect and packages - Statistical modeling - Device, process and circuit simulation - CAD modelling of power devices - Packaging of power devices.

- PROCESS AND DEVICE TECHNOLOGY

- Device and IC manufacturing processes, testing methodologies, & reliability - Integration of III-V devices on Si - High performance devices such as GaN 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 power-devices and ICs.

- Advances in processes and device structures demonstrating high speed, low power, low noise, high current, high voltage, etc. BiCMOS processes - Advanced process techniques - Si and SiC homojunction bipolar/BiCMOS devices and SiGe heterojunction bipolar/BiCMOS devices - Manufacturing solutions related to Bipolar and BiCMOS yield improvements - Fabrication of high-performance passive components, sensors, and MEMS - Process technology related to discrete and integrated bipolar/BiCMOS power devices - IGBT, RF power devices. Wide bandgap bipolar devices (e.g., SiC) and related process technology - 3D Integration - Reliability and testing for IC manufacturing.