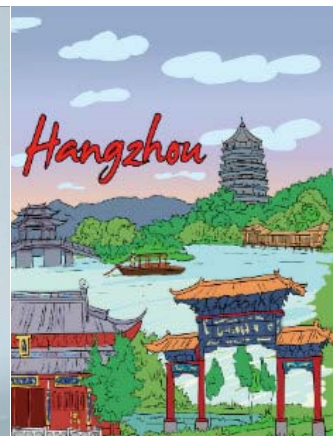


02-05 JULY 2019
Grand Hyatt Hotel
HANGZHOU · CHINA



The 26th International Symposium on the Physical and Failure Analysis of Integrated Circuits

IPFA 2019 is devoted to the fundamental understanding of the electrical and physical characterization techniques and associated technologies that assist in probing the nature of wear-out and failure in conventional and new CMOS devices, in turn resulting in improved knowhow of the physics of device / circuit / system failures that serves as critical input for future design for reliability. The Technical Program Committee is inviting papers related, but not limited to, the following tracks:

Sample Preparation, Metrology and Defect Characterization: Device deprocessing; Ion beam / TEM sample preparation, Metrology, Defect inspection, Test chips.

Case Studies on Fault Isolation: Die / Board / System-level electrical FA, Electrical characterization and nanoprobing.

Case Studies on Physical Failure Analysis: Die / Board / System-level physical FA, Design for manufacturing, Construction Analysis, Reverse engineering.

Package-Level Failure Analysis: 2.x D/ 3D Package FA, Magnetic/acoustic applications, 2.x D/ 3D X-ray, FTIR, non-destructive failure analysis, Workflows.

Advanced Electrical Fault Isolation Techniques: Advanced methodologies in photon and laser-based microscopy techniques, Dynamic techniques, Acoustic microscopy, Magnetic imaging, Nanoprobing, AFP, EBAC/EBIC, Software-based diagnostic techniques.

Advanced Physical Failure Analysis Techniques: Advanced methodologies in PFA, Advanced optical beam, Ion beam approaches, Circuit-edits, Delaying recipes and innovations. Tomography.

NEW! Emerging Topics in Failure Analysis: FA for hardware security, Reverse engineering, Artificial intelligence (AI) for FA – fault detection, failure root cause identification, SEM/TEM image analytics, analysis and characterization, FA for IoT systems, FA for non-CMOS device technologies (MEMS/NEMS, Silicon Photonics etc.).

Transistor and NVM Device Reliability: Gate oxide/High- κ Reliability, PBTI/NBTI, Hot carrier, Random Telegraph Noise (RTN) and single dopant effects, Self Heating in Sub-10 nm CMOS. Process and stress-induced reliability issues and variability, ESD/EOS Failures and Radiation effects; circuit level analysis of performance variability, Non-volatile memory (NVM) reliability – retention, endurance and read disturb in PCRAM, RRAM, STT-MRAM, reliability of ferroelectric devices (FeFETs, FeRAM).

Interconnect and Packaging Reliability: TDD in low- κ dielectrics, Electromigration, stress migration, process & stress-induced variability in interconnects, cracking, corrosion, and fatigue in bond pads, Reliability of 3DIC and TSV, Thermo-mechanical stress, power dissipation issues, wafer warpage, wire bonding, die attach and encapsulation issues, wafer bonding technology, yield and reliability.

NEW! Photovoltaic and Photonics Devices – Reliability & FA: Failure mechanisms and reliability test of LEDs made of GaN, GaAs, InP etc., solar cells made of silicon, CdTe, CIGS, organic materials, multi-junction, perovskite etc., infrared photodetectors, waveguides.

NEW! High Power Electronics / Wide Bandgap Device Reliability & Failure Analysis: Reliability of devices based on GaAs, GaN, SiC and Ga₂O₃ systems, Trap-related degradation; materials-related defect characterization, radiation effects, process variability, III-V/Si integration.

NEW! 2D Materials and Devices: Reliability & Failure Analysis: Tunnel FETs, transistors with 2D materials (Graphene, MoS₂, WSe₂, h-BN), ferroelectric and negative capacitance FETs, quantum computing, spintronics.

Abstract Submission Due: **12 March 2019**

Notification of Abstract Acceptance: **29 March 2019**

- Submission format: Two-page extended abstract (including text and figures) of your original research work. Abstract template and other detailed information available at <http://www.ipfa-ieee.org/>
- Abstract Submission Site: <https://www.softconf.com/j/ipfa2019/>
- Selected authors of top 20% high quality papers will be invited to submit an extended version of their work for the Special Issue of *Microelectronics Reliability* (Elsevier), expected to be published in DEC 2019.

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