2018 IEEE INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM

March 11th - 15th 2018, Hyatt Regency Airport, South San Francisco CA USA

IRPS is the preeminent conference for timely research on Reliability Physics of devices, materials, circuits, and products used in the electronics industry, where important reliability challenges and solutions are first discussed.

IRPS18 is soliciting increased participation in the following areas: reliability of wide bandgap semiconductor power devices, circuit aging, consumer electronics, reliability of 2D NAND flash replacement technologies, 2.5D & 3D packaging

The IRPS technical program includes: • Paper Presentations • Keynote and Invited Talks • Poster Session • Tutorials • Year-in-Review Seminar • Workshops • Equipment Demonstrations
IRPS bestows awards for Best Paper, Outstanding Paper, Best Poster, and Best Student Presentation

Circuits, Products, and Systems

Circuit Reliability – Includes digital, mixed-signal, power and RF applications; design for reliability, variability-aware design.
Circuit Aging Simulation – Includes compact modeling; statistical methods
Product IC Reliability – Includes burn-in; defect detection; on-chip sensors; modeling
Consumer Electronics Reliability – Includes smart phones; wearable devices; tablets; healthcare devices
Electronic System Reliability – Includes automotive, space, communications, medical, energy, and photovoltaic applications; screening techniques; reliability-aware circuit design and optimization, system monitoring; failure root cause determination; modeling methodologies, product qualification vs reliability.
Soft Errors – Includes neutron and alpha particle SER; multi-bit SER/SEU; mitigation techniques; simulation
ESD and Latchup – Includes component and system-level ESD design; modeling and simulation
3D Assembly – Includes multichip modules; 3D integration with TSV; thermomechanical stress; wafer thinning effects
Packaging – Includes chip-package interaction; fatigue; power dissipation issues, Reliability 2.5D and 3D IC packaging and interconnects;

Devices, Processing, and Materials

Transistors – Includes hot carrier phenomena; bias-temperature instability; random telegraph noise; advanced transistor scaling, variability, Ge and III-V channels
Gate Dielectrics – Includes TDDB modeling; reliability of novel gate dielectrics; modeling of progressive breakdown; gate dielectric reliability for III-V FETs
Beyond CMOS Devices – Includes reliability of tunnel FETs, transistors with 2D semiconductors (graphene, MoS_2), Ferroelectric FETs, and spintronics
Compound/Optoelectronics – Includes reliability of wide bandgap (GaN, SiC) power devices, optoelectronics, and silicon photonics, Reliability of far infrared detectors
Back-End Reliability – Electromigration; Joule heating; stress migration; low-k dielectric breakdown; middle-of-the-line reliability, MIM/MOM capacitors
Process Integration – Includes new process-related reliability issues; foundry reliability challenges
Failure Analysis – Includes evidence of new failure mechanisms; advances in failure analysis techniques
Memory – Includes DRAM and NVM**;** failure mechanisms in novel memory devices including 3D Flash and ReRAM
Photovoltaics – Includes reliability of solar cell devices in silicon, CdTe, CIGS, organics, multi-junctions, etc.
MEMS – Reliability of sensors and actuators; reliability testing; analysis & modeling, BioMEMS

Abstract (Paper/Poster) Submission (due October 9, 2017): Your two-page original abstract submission should clearly and concisely present specific results and explain the importance of your work in the context of prior work. Use the IRPS document template available at www.irps.org. Notification of acceptance will be made by **December 15, 2017**. Full manuscripts of accepted papers will be due before the conference. Registration for the conference is required for the author presenting the paper. **Late Paper Submission:** Space permitting, full-length manuscripts with late-breaking news may be considered for inclusion in the conference/proceedings. **Due January 8, 2018.**

Technical Program
Chair: Gaudenzio Meneghesso (University. of Padova, +39-3346957885, gauss@dei.unipd.it)
Vice Chair: Robert Kaplar (Sandia Natl. Labs, +1 (505) 844-8285, rjkapla@sandia.gov)

General Chair
Elyse Rosenbaum (University of Illinois, +1 (217) 333-6754, elyse@illinois.edu)

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