

FOR IMMEDIATE RELEASE – OCTOBER 5, 2017

“Innovative System Directions” will highlight Symposia program encompassing “big integration” in IoT, virtual reality/augmented reality, big data, biomedical applications, robotics & smart cars...

2018 Symposia on VLSI Technology & Circuits Opens Online Submission for Papers

HONOLULU, HAWAII – October 5, 2017 – Online papers submissions are now open for the 2018 Symposia on VLSI Technology and Circuits, to be held at the Hilton Hawaiian Village in Honolulu, Hawaii from June 18 – 22, 2018. As part of an ongoing program integration, both Symposia (VLSI Technology and VLSI Circuits) will be held on a fully overlapping schedule from June 19 – 21, preceded by Short Courses on June 18, and followed by a special forum on “Deep Learning & Artificial Intelligence” on June 22.

The deadline for paper submissions to both Symposia is January 29, 2018. Complete details for paper submission can be found online at: <http://vlsisymposium.org/authors-3/>

For more than 30 years, the combined annual Symposia on VLSI Technology and Circuits has been the world’s premier mid-year conference for microelectronics technology, providing an opportunity for the world’s top device technologists, circuit and system designers to exchange leading edge ideas. Held together since 1987, the Symposia on VLSI Technology and Circuits have alternated each year between sites in the US and Japan, enabling attendees to learn about new directions in the development of VLSI technology & circuit design through the industry’s leading research and development presentations.

The comprehensive technical programs at the two Symposia – fully overlapping again this year – are supplemented with short courses, invited speakers and several evening panel sessions. Since 2012, the Symposia have presented joint focus sessions that include invited and contributed papers on topics of mutual interest to both technology and circuit attendees. A single registration enables participants to attend both Symposia.

Papers sought for “Innovative System Directions”

Authors are encouraged to submit papers that showcase innovations that encompass “big integration,” extending beyond single ICs and into the module level, with co-optimization of device technology and circuit/system design, including focus areas in the Internet of Things (IoT), industrial electronics, ‘big data’ management, biomedical applications, virtual reality (VR) / augmented reality (AR), robotics, and smart cars. These topics will be featured in focus sessions as part of the program.

The **Symposium on VLSI Technology** seeks technical innovation and advances in all aspects of IC technology, as well as the emerging IoT (Internet of Things) field, including:

- ***IoT, AR/VR, and AI systems & technologies***, including CPU, GPU, ultra-low power technologies, in-memory computing, heterogeneous, 3D, & 2.5D integration, wearable devices, sensors, display, connectivity, power management, digital/analog, microcontrollers and application processors
- ***Stand-alone & embedded memory technologies & reliability*** for DRAM, SRAM, 3D NAND & NOR Flash, MRAM, PCRAM, ReRAM, FeRAM, and emerging memory technologies
- ***CMOS technology, microprocessors & SoCs***, including scaling, VLSI manufacturing concepts and yield optimization
- ***RF / analog / digital technologies & sensors*** for mixed-signal SoC, RF front end; analog, mixed-signal I/O, high voltage, imaging, MEMS, and integrated sensors
- ***Process & material technologies***, including advanced transistor process and architecture, modeling and reliability; high mobility channels; advanced lithography, high-density patterning; SOI and III-V technologies, processes for high aspect ratio 3D NAND photonics, local interconnects, and Cu/optical interconnect scaling
- ***Packaging technologies & System-in-Package (SiP)***, including through-silicon vias (TSVs) and 3D-system integration
- ***Photonics Technology & 'Beyond CMOS' devices***

The **Symposium on VLSI Circuits** is placing special emphasis on innovative system focus areas and seeks original papers in the following areas:

- ***Machine & deep learning***
- ***Internet of Things (IoT)***
- ***Industrial electronics***
- ***'Big Data' management & analytics***
- ***Robotics & autonomous transportation***

In addition, paper submissions are sought in the following areas:

- ***Processors, architectures, & SoC***
- ***Digital circuits, signal integrity, & I/Os***
- ***Memory circuits, architectures & interfaces***
- ***Biomedical circuits***
- ***Sensors, imagers, & display circuits***
- ***Power conversion circuits***
- ***Analog, amplifier, & filter circuits***
- ***Wireless receivers & transmitters***
- ***Data converters***
- ***Frequency generation & clock circuits***
- ***Wireline receivers & transmitters***

Joint Technology & Circuits focus sessions feature invited and contributed papers highlighting innovations and advances in the following areas of joint interest:

- ***Design in scaled technologies:*** scaling of digital, memory, analog and mixed-signal circuits in advanced CMOS processes
- ***Design enablement:*** design for manufacturing, process/design co-optimization, on-die monitoring of variability and reliability
- ***Embedded memory technology & design:*** SRAM, DRAM, NOR Flash, PCRAM, ReRAM, MRAM, and FeRAM
- ***New Computing:*** Artificial intelligence, ‘beyond von Neumann’ computing, machine learning, neuromorphic & in-memory / in-sensor computing
- ***3D & heterogeneous integration:*** power and thermal management; inter-chip communications, SIP architectures and applications

Best Student Paper Award

Awards for best student paper at each Symposia are chosen based on the quality of the papers and presentations. The recipients will receive a monetary award, travel cost support and a certificate at the opening session of the 2019 Symposium. For a paper to be reviewed for this award, the author must be enrolled as a full-time student at the time of submission, must be the lead author and presenter of the paper, and must indicate on the web submission form that the paper is a student paper.

Sponsoring Organizations

The Symposium on VLSI Technology is sponsored by the IEEE Electron Devices Society and the Japan Society of Applied Physics, in cooperation with the IEEE Solid State Circuits Society.

The Symposium on VLSI Circuits is sponsored by the IEEE Solid State Circuits Society and the Japan Society of Applied Physics, in cooperation with the Institute of Electronics, Information and Communication Engineers and the IEEE Electron Devices Society.

Further Information, Registration and Official Call for Papers

Visit: <http://www.vlsisymposium.org>.

Media Contact (North America & Europe)

Chris Burke | BtB Marketing Communications
chris.burke@btbmarketing.com | +1-919-872-8172

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