The 40th Annual 2020 Symposia on VLSI Technology & Circuits Announces Call for Papers on the Theme:
"The Next 40 Years of VLSI for Ubiquitous Intelligence"

HONOLULU, HI (November 1, 2019) – Celebrating its 40th year of delivering unique perspectives on the convergence of technology and circuits in the microelectronics industry, the 2020 Symposia on VLSI Technology & Circuits have announced a call for papers around the theme: "The Next 40 Years of VLSI for Ubiquitous Intelligence." Held jointly on a fully-overlapping schedule from June 14 – 19, 2020 in Honolulu, HI, the two Symposia integrate advanced technology developments, innovative circuit design, and the applications they enable, such as machine learning, IoT, artificial intelligence, wearable/implantable biomedical applications, big data, cloud / edge computing, virtual reality (VR) / augmented reality (AR), robotics, and autonomous vehicles.

The deadline for paper submissions to both Symposia is February 10, 2020. Complete details for paper submission can be found online at: https://vlsisymposium.org/blog/call-for-papers-for-the-2020-symposia/

The **Symposium on VLSI Technology** seeks papers focusing on technical innovation and advances in the following areas:

- ***Technologies for the IoT,*** including ultra-low power technologies, wearable devices/sensors, display, connectivity, power management, digital/analog, microcontrollers and application processors
- ***Technologies for Artificial Intelligence (AI)***, including CPU, GPU, in-memory computing, neuromorphic devices, and stochastic computing
- ***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, MEMS, integrated sensors, and power electronics
- ***Process & material technologies,*** including advanced transistor processes and architectures, modeling and reliability; high mobility channels; wide bandgap semiconductors, 1D & 2D materials & devices, advanced lithography, heterogeneous integration,and interconnect scaling
- ***Packaging technologies & System-in-Package (SiP),*** including through-silicon vias (TSVs) and 3D-system integration
- ***Photonics Technology, Imaging & 'Beyond CMOS' devices***

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

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

In addition, paper submissions are sought in the following areas:
- *Processors & Systems-on-Chip (SoCs)*
- *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 & optical transceivers*

Joint Technology & Circuits focus sessions enable attendees to synergize on topics of common interest between the Technology & Circuits Symposia programs, featuring invited and contributed papers highlighting areas of joint interest that enable ubiquitous intelligence, smart mobility, and other VLSI applications, including:
- *MRAM future: Beyond STT, Beyond Embedded (Technology)*
- *Silicon Photonics (Joint between Technology and Circuits)*
- *5G/mm-wave (Joint between Technology and Circuit)*
- *System/Design-Technology Co-Optimization (Joint between Technology and Circuits)*
- *Artificial Intelligence/Machine Learning (Joint between Technology and Circuits)*
- *Heterogeneous Integration (Joint between Technology and Circuits)*

Papers sought for "Innovative System Directions"
Authors are encouraged to submit papers that showcase innovations that encompass "big integration," extending beyond single devices or 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 both invited and contributed papers in focus sessions as part of the Symposia program.

The weeklong Symposia have a reputation as the microelectronics industry's premiere international conference integrating technology, circuits, and systems with a range and scope unlike any other conference. The Symposia program features technical presentations, a demonstration session, evening panel discussions, joint focus sessions, short courses, and an all-day "Friday Forum" provides a focused

discussion on a specific topic relevant to the Symposia theme. A single registration enables participants to attend both Symposia.

Special events at the Symposia include an evening reception and joint banquet celebrating the past 40 years of technology and circuit progress, as well as a look ahead to the next 40 years of innovations. Also, the IEEE Electron Devices Society and the Solid State Circuits Society will hold mentoring events for Women in Engineering and Young Professionals.

Best Student Paper Awards for 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. 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.

Further Information, Registration and Official Call for Papers
Visit: http://www.vlsisymposium.org.