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For Immediate Release

**2015 Symposia on VLSI Technology & Circuits to Highlight
Latest Developments in Microelectronics**

- *More than 200 leading-edge presentations*
- *14-nm SoC; emerging devices; emerging memories; 3D IC technology; SoC circuits & processors; wireless sensors*
- *Thought-provoking joint panel session: "Semiconductor Industry in 2020 – evolution or revolution?"*
- *Joint Symposia Focus Sessions provide interdisciplinary learning opportunities*
- *Professional development opportunities with short courses & workshops*

KYOTO, JAPAN (April 20, 2015) – The latest advancements in microelectronics technology and circuits will be presented by the world's leading experts as they gather for the 2015 Symposia on VLSI Technology and Circuits, from June 15-18 (Technology) and from June 16-19 (Circuits) in Kyoto, Japan. Alternating between Kyoto and Hawaii each year, the Symposia presents the semiconductor industry's most significant research in many key areas.

A single registration fee enables attendees to participate in both symposia and benefit from this unique opportunity for interdisciplinary learning between device technologists and circuit/system designers. The technical programs of both Symposia overlap for two days, with key topics organized into several Joint Focus sessions.

Each Symposium features full-day short courses by distinguished international speakers from industry and academia, evening panel discussions spanning a range of thought-provoking issues that face the industry, and a joint banquet to provide an informal atmosphere for the exchange of interdisciplinary ideas. Also preceding the Symposia will be two satellite

workshops: IEEE's Silicon Nanoelectronics Workshop on June 14 & 15; and Spintronics Workshop on June 15.

“This year's VLSI Technology program will highlight breakthroughs in the evolution of SoC and related technologies such as 14nm SoC platform, RF power amplifiers, and highly reliable non-volatile memories” said Toshiro Hiramoto of the University of Tokyo, Symposium Chair of the 2015 Symposium on VLSI Technology. “In addition, the breakthroughs in the interconnect technology for 7nm and 3D integration will be demonstrated.”

“The VLSI Circuits program will present major advancements in designing with scaled devices at and below 14 nm and also with 3D stacked imagers,” said Hideyuki Kabuo of Socionext, Symposium Chair of the 2015 Symposium on VLSI Circuits. “Fully integrated systems such as sensor node and medical monitoring, energy efficient circuits on wire-line interfaces and interference suppression techniques on wireless communication, will also be demonstrated.”

Full-day Short Courses

- **VLSI Technology Short Course (June 15)**
 - ***“More-than-Moore and More Moore for IoT”*** -- In the era of Internet of Things (IoT), the required future networks will build on a variety of More-than-Moore and More Moore technologies. This course will comprise 10 lectures given by distinguished experts, covering such topics as ultra-low leakage FETs, embedded low-power memory, sensors, wireless energy transfer, and energy harvesters.
- **VLSI Circuits Short Courses (June 16)**
 - ***“VLSI Design for Big Data Management”*** -- This short course covers VLSI implementations for data center applications, including CPU- and FPGA-based data processing, data storage, high bandwidth I/O, and digitally controlled power supplies.
 - ***“Analog and Digital Circuit Design for IoT Swarms”*** -- This short course covers key circuits for tiny and energy efficient IoT nodes including data converters, RF, power management circuits, microcontrollers, and normally-off computing using non-volatile memories.

VLSI Symposia Technology/Circuits Joint Focus Sessions

The Technology/Circuits Joint Focus Sessions underline the unique interdisciplinary value of the Symposia. This year the topics are:

- ***Ultra-Low Power for IoT*** (Session JFS1, Wednesday June 17)
- ***Emerging Non-Volatile Memory*** (Session JFS2, Wednesday June 17)
- ***Advanced Technology and Circuits for IoT*** (Session JFS3, Thursday June 18)
- ***3D and Heterogeneous Integration*** (Session JFS4, Thursday June 18)

VLSI Technology Focus Sessions

In addition, the Symposium on VLSI Technology will discuss:

- ***7nm node Logic Technology and Beyond*** (Session T3, Tuesday June 16)

- **3D Systems and Packaging** (Session T5, Tuesday June 16)

VLSI Circuits Focus Sessions

As a new initiative for 2015, the Symposium on VLSI Circuits will feature innovative VLSI system directions. Excellent technical papers on “big integration,” deal with circuits from chip through module/chassis level, from two angles:

- **Systems for BigData Management** (Session C8, Thursday June 18)
- **IoT and Smart Systems** (Session C10, Thursday June 18)

Plenary Sessions

Two plenary talks open the Symposium on VLSI Technology. First, Hirohisa Hirukawa, Director of Intelligent Systems Research Institute, AIST, Japan, will present: “**Robotics for Innovation,**” an overview of the recent R&D in robotics discussing the breadth of applications as well as the needs from VLSI technologies. Then, the second plenary talk, “**System Challenges and Hardware Requirements for Future Consumer Devices: From Google Glass to Chrome Books and Devices in-between,**” will be given by Eric Shiu and Simon Prakash, Google. They focus on the system requirements for today’s and future’s consumer devices. Future research areas in memory architecture, technology and circuit design will also be discussed.

Opening the Symposium on VLSI Circuits will be two invited plenary talks. Kazuo Yano, Senior Chief Researcher of Hitachi, will present “**Principle of Making Money with IoT: Very-Large-Scale Happiness Integration.**” For ten years, he has studied how to make a profit using the data generated in the IoT, with implications spanning on-chip integration and massively distributed chips embedded within society. The second plenary talk, “**The Brain of Automated Driving – Electronics for the vehicle of tomorrow,**” will be given by Michael Fausten, Vice President of system development for automated driving and connectivity of Robert Bosch GmbH. He will highlight the requirements for future electrical and electronics architectures of highly automated vehicles and discuss approaches how to fulfill these requirements.

Evening Panel Discussion

Joint Evening Panel Discussion, formerly called *Joint Rump Session*, **sponsored by both Symposia** is scheduled on Tuesday, June 16:

- “**Semiconductor Industry in 2020 – evolution or revolution?**” moderated by Thomas Piliszczyk, Soitec and Julian Tham, Broadcom. Emerging markets such as IoT, M2M, and Big Data analysis will change the rules of the game for the semiconductor industry in 2020. What kind of business models will be required for the future players? Will fabless be the best approach in 2020? How will the foundry business change? Panelists will present their views and insights predicting the evolution of the semiconductor industry towards the next decade.

As part of the **Symposium on VLSI Technology**, an evening panel discussion is scheduled on Tuesday evening to foster open discussion of important industry issues:

- **“Post scaling: What will be next?”** moderated by Akira Nishiyama, Toshiba and Frédéric Boeuf, STMicroelectronics. Continuous efforts have been made to extend the scaling of ULSIs. However, it is also true that the end of the scaling of MOSFETs and BEOL interconnect is coming in near future. Even in the era of post-scaling, we have to find new ways to improve and extend the function of LSIs and those efforts could lead to the innovation of electronics. Panelists from material and device level to system and architecture level will discuss ‘What is the next?’

The **Symposium on VLSI Circuits** will also hold two parallel evening panel discussions, on Thursday, June 18:

- **“Is university circuit design research and education keeping up with industry needs?”** moderated by Patrick Yue, Hong-Kong University of Science and Technology. Expert panelists from TSMC, MediaTek, Intel, University of Tokyo, Tokyo Institute of Technology, UC Berkeley, and TU Delft, will tackle the question “is a paradigm shift in academia from circuit-focused topics to emerging technologies and applications detrimental to industry?” They will also address concerns such as the necessity for students to carry out their circuit research in advanced technologies, and how to focus on fundamentals, design creativity, and the implications of figure of merit driven research.
- **“Wearable Electronics: Still an oasis or just a mirage for the semiconductor industry?”** moderated by Naveen Verma, Princeton. This emerging area inspires a number of questions across technology, application-level value, and interaction with broader sensing platforms. A panel composed of experts from Hitachi, TI, Intel, Samsung, University of Tokyo, KAIST, and University of Michigan will discuss different visions of wearable devices

Joint Luncheon (Separate registration required)

On Thursday, June 18, a luncheon sponsored by both Symposia will feature the talk “DASSAI: Innovating Sake Brewing with Massive Usage of Data and IT” by Mr. Kazuhiro Sakurai, SEVP, Asahi-shuzo Co., Ltd. Sake is a Japanese traditional rice wine, can only be brewed by people called TOJI, the Sake specialists experienced more than several 10s of years. To the contrary, DASSAI, original brand of Asahi-shuzo, does not rely on TOJI at all: instead, employing scientific approach based on data measurement and analytic, during whole process of brewing, as well as for controlling quality of ingredient. Asahi-shuzo is now encompassing cloud-based rice farming for shipping DASSAI at even better quality with larger quantity. We can learn a lot from their story on their Sake innovation, what was a key for making a small business in a small village into world famous one. During this luncheon, you can also taste, a little bit, how good DASSAI really is.

VLSI Symposia Gets Social

Tuesday evening, June 16, will feature the 35th anniversary memorial reception of the Symposium on VLSI Technology, just before the evening panel discussion. All participants of both symposia are cordially invited.

On Wednesday evening, June 17, a joint banquet will be held to provide an informal, relaxed atmosphere for information exchange between technologists and circuit designers.

In addition, the 2015 Symposia on VLSI Technology and Circuits have established a LinkedIn discussion group to enable conference participants and others to share their discussions about the conference topics:

www.linkedin.com/groups?gid=3037968&trk=hb_side_g

Sponsoring Organizations

The Symposium on VLSI Technology began in 1981, while the Symposium on VLSI Circuits was added in 1987. The two meetings have been held together ever since, rotating annually between Japan and Hawaii. 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 and Registration -- Visit www.vlsisymposium.org

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