



ISSCC 2012 CALL FOR PAPERS



IEEE INTERNATIONAL SOLID-STATE CIRCUITS CONFERENCE SUNDAY-THURSDAY, FEBRUARY 19-23, 2012 SAN FRANCISCO MARRIOTT MARQUIS HOTEL, SAN FRANCISCO, CA



ISSCC WEBSITE: <http://www.isscc.org>

Innovative and original papers are solicited in subject areas including (but not limited to) the following:

ANALOG — Op-amps and instrumentation amps, baseband amplifiers, comparators, multipliers, voltage references; power-control circuits, regulators and DC-DC converters; continuous-time and discrete-time filters; consumer electronics, non-linear analog circuits, switched-capacitor circuits; synthesizers, PLLs.

DATA CONVERTERS — Nyquist-rate and oversampling A/D and D/A converters; sample-and-hold circuits; TDCs.

ENERGY-EFFICIENT DIGITAL — Energy-efficient embedded multi-core wide-operating-range processors; energy-efficient, ultra-low-voltage digital circuit techniques; adaptive techniques for variation tolerance, timing margin reduction, power optimization; integrated systems such as smart-phone ICs and application processors, digital baseband, innovative multimedia ICs, personal e-health ICs, energy-efficient sensor systems.

HIGH-PERFORMANCE DIGITAL — Microprocessors; graphics processors; system-on-chips integrating processor cores, graphics and peripheral controllers; many-core and thread-rich processors; network processors; high-speed digital circuits; intra-chip communication circuits; soft error, variation, and fault-tolerant circuits; reconfigurable logic arrays; security circuits; high-speed CAMs and register files; clock generation and distribution circuits and architectures; high-performance-logic microarchitectures and circuit techniques; implementation methodologies for high-performance digital VLSI; power- and leakage-management techniques for high-performance processors and graphics; power-gating circuits; adaptive digital circuits; thermal and wear-out sensors; digital PLLs; integrated DC-DC converters.

IMAGERS, MEMS, MEDICAL, & DISPLAY — Image sensors and companion chips; image sensor SoCs; smart sensors; MEMS for analog, RF, and sensor applications; integrated sensors and transducers; organic sensors; sensor-interface circuits; neural interfaces; biosensors, microarrays and lab-on-a-chip; environmental and wearable biomedical electronics; display drivers, controllers, and companion chips; organic LED and liquid-crystal-display interface circuits; flat-panel and projection displays; circuits for print-heads.

MEMORY — Static, dynamic, non-volatile, read-only memory, and content-addressable-memory; memory subsystem and array architectures along with related circuits; memory I/O interface design and circuit techniques, including 3D memory integration; phase-change, magnetic, spin-torque-transfer, ferroelectric, resistive, and other emerging memory designs and architectures; embedded memory architectures and designs, including single- and multi-port cache memory or register files, for computing, consumer electronics, and emerging applications such as biomedical devices; advanced circuit techniques to enable high-performance and low-voltage memory design; advanced architectures and designs to improve memory reliability and fault-tolerance, for example, novel error-correction (ECC) and redundancy schemes; memory controllers and solid-state-disk controllers.

RF — mm-wave/RF/IF/baseband circuits and sub-systems, both narrowband and wideband, including receiver and transmitter front-ends, modulators/demodulators, power amplifiers/detectors, RF switches and integrated antennas/MIMO/phased arrays, frequency generators; circuits for communications, networking, sensing, RADAR, RF imaging, SiP integration and advanced RF applications. Also, circuits that achieve increased frequency range, tunability, selectivity, dynamic range, power efficiency, configurability, silicon scaling, or environmental robustness.

TECHNOLOGY DIRECTIONS — Advanced circuit technologies and techniques; ultra-low-voltage and sub-threshold logic design; molecular-, organic-, and nano-electronics; flexible substrates and printable electronics; 3D-integration and novel packaging technologies; compound-semiconductor, superconductive, and micro-photonic technologies and circuits; energy sources and energy harvesting; emerging applications such as biomedical and ambient-intelligence; emerging wireless applications and circuits; advanced signal-processing and microprocessor architectures; design for manufacturability; analog and optical processors, non-transistor-based analog and digital circuits and their system architectures; advanced memory technologies; spintronics; quantum storage; emerging sensor-network concepts such as body-area and body-sensor networks.

WIRELESS — Receivers, transmitters, transceivers, and SoCs, for connectivity, cellular, broadcast, and radar applications including multi-standard and multi-band solutions. Examples include (but are not limited to) WLAN, WiMax, cellular base stations and handsets, GPS, DVB/DMB, UWB, ISM, and mm-wave-band systems. Also, highly-integrated transceivers for advanced wireless applications targeting sensing, imaging, etc. are encouraged.

WIRES — Receivers/transmitters/transceivers for wireline systems; backplane transceivers and chip-to-chip communications. Examples include links for (but not limited to) Ethernet, Fibre Channel, optical/electrical data transfer, PON, advanced serial memory, consumer electronics, SONET, SDH, LAN, WAN, FDDI, xDSL, cable modem, power-line/phone home networks, and subscriber-line circuits and modems. In addition, wireline transceiver building blocks like AGC, equalization circuits, oscillators, PLLs, line-drivers and hybrids, etc. are encouraged.

• 2012 Conference Theme •

“Silicon Systems for Sustainability”

Submission Deadline is Monday, September 12, 2011

3:00PM Eastern Daylight Time (19:00 GMT)





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INTERNATIONAL SOLID-STATE CIRCUITS CONFERENCE
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ISSCC 2012 CONFERENCE THEME: “SILICON SYSTEMS FOR SUSTAINABILITY”

What can we do for Earth's sustainability? Sustainability must be the paramount theme for the future of human society! Electronics will play a primary role: more robust and sustainable silicon systems will emphasize re-usability, re-organization, re-configurability, self-repair, and self-organization. Currently, environmentally-supportive sustainable systems are exemplified by silicon technology used in electric-automotive and smart-power-grid systems. Potentially, silicon technology and its applications will provide solutions for the realization of smarter recycling sustainable global systems. To fulfill this goal, system-level approaches, as well as technology and circuit advancements will play important roles! Contributions to ISSCC 2012 are encouraged in support of the theme “Silicon Systems for Sustainability”, or any of the subject areas described on the previous page.

INDUSTRY DEMONSTRATION SESSION (IDS) AND ACADEMIC DEMONSTRATION SESSION (ADS):

ISSCC 2012 will expand its demonstration sessions to include both Industry and Academe. Presentations from the regular paper sessions and the Student-Research Preview are eligible for consideration for the demonstration sessions. The demonstrations will be held during the Conference social hours, ADS on Monday and IDS on Tuesday. At the demonstration session, authors of selected papers will display posters along with their demonstration. To be considered for participation in the demonstration sessions, authors, at the time of paper submission, must submit a one-page description of their potential demonstration which can include an extra illustrative figure. Refer to the ISSCC Website for further information.

STUDENT INITIATIVES

STUDENT RESEARCH PREVIEW (SRP):

This session provides students with the opportunity to showcase the directions of their work, and to exchange experiences with other students and researchers from academia and industry. SRP is organized as an Evening Session consisting of short presentations of work-in-progress. The abstract submission deadline for SRP is October 25, 2011. In addition, students can apply to participate in the Academic Demonstration Session (see Student-Research Preview Call for Presentations which will be available on the ISSCC Website.)

SILKROAD AWARD:

The winner is selected from first-time student-presenting authors at ISSCC whose research is conducted in an emerging region in the Far East.

ELECTRONIC SUBMISSION OF ABSTRACT, DRAFT MANUSCRIPT, AND PRE-PUBLICATION MATERIAL

Authors should submit 3 items for review: 1) An informative and quantified **Abstract**; 2) A **Draft Manuscript** for the Digest of Technical Papers; 3) If appropriate, **Pre-Publication Material**. Please, read the Pre-Publication Guidelines (summarized below) carefully!

To submit a paper, go to the ISSCC Website, and complete the requested information. **The submission Website will be available starting July 1, 2011. You may consult the Website for instructions at any time after this date.** Authors are encouraged to complete the questions on the Website early. This information can be updated anytime up to the September 12, 2011 deadline. A sample Abstract and draft Digest paper can be found on the Website (**single-column double-spaced format is required for the paper-review process**).

MORE SUBMISSION DETAIL:

1. The Abstract must be submitted to the ISSCC Website. The Abstract must not exceed 500 characters (including spaces). ISSCC reserves the right to modify the paper title and abstract when technically appropriate. The Abstract must be factual and provide as complete and quantitative a description as possible, including specific and concrete performance data. Claims such as “new”, “advanced”, “novel”, “high-performance”, and “high-speed” are **NOT** acceptable! Please refer to the sample Abstract on the ISSCC Website.

2. The Draft-Manuscript text (in single-column double-spaced format, as required for paper review) with 3 to 6 references, and 6 figures, must be submitted to the ISSCC Website. The text must contain all essential information, **including references to all relevant work previously published by you or others. The text-submission format is MS Word.** The length limits of 7500 characters inclusive of spaces (but exclusive of references), are strictly enforced. Papers exceeding the length limit will be immediately rejected, as requiring length editing. **The preferred figure format is multiple images (eg TIFF [.tif] files).** A 6-figure maximum is enforced. **Complex multipart figures are not allowed (for example, Figures 2a and 2b will be counted as two figures!).** Tables count, and are labeled, as figures. If a die-photo is available it may be included in addition to the 6-figure limit. For initial review only, you are allowed to include 3 additional items (such as figures or tables) as supplementary material. These 3 additional items will **not** be part of the final manuscript, **and should not be referred to in the text of the paper**, but serve **ONLY** as supplementary material for the reviewers. These 3 items should be uploaded in the same file as the main figures, but labeled as “supplementary (Fig. s1, s2, s3)”. For further instruction, see the ISSCC Website.

3. Pre-Publication Material: If any material related to the ISSCC submission will be published prior to the Conference, copies of these prior publications should be submitted through the ISSCC Website, including data sheets (if appropriate), press releases, papers or abstracts submitted or accepted at another conference, and any other forms of publication such as Web presentations. This will allow the Program Committee to decide whether the work has been (or will be) pre-published. It should be noted that if a substantial part of the work has been disclosed, the authors should not submit a paper to ISSCC, since it will be rejected for **lack of novelty** (see Pre-Publication Policy below).

The most common reason for paper rejection is a lack of clear evidence of what is novel in the work, and the extent to which it advances the state-of-the-art. Successful submissions contain specific new results, sufficient detail and data to be understood technically, circuit schematics, measured results for key elements, and tabulated comparisons with recently published work, where appropriate.

For further details on manuscript preparation, check the ISSCC Website: <http://www.isscc.org>, or send an email with your questions to the Director of Publications, Laura Fujino. lcujino@cs.com.

Notification of Acceptance: Authors will be notified of acceptance on October 17, 2011. A submission may be accepted as either a regular or short paper. A regular paper is allowed 25 minutes for presentation and 5 minutes for questions. A short paper is allowed 15 minutes total for both presentation and questions. Regular and short papers must meet the same submission and quality standards. They differ only in the determination by the Program Committee of the time required to present their key ideas.

Authors of accepted papers will have an opportunity to modify their manuscripts. The Program Committee may require specific revisions. There will be further format requirements for the final Digest manuscript. **The presenting author is required to register for the Conference in advance.**

POLICY REGARDING PAPER-SUBMISSION DEADLINE

Due to the timing constraints associated with the paper-review process, papers **must** be received by the deadline shown below to be considered by the Program Committee.

**Firm Deadline for Electronic Submission of Papers: Monday, September 12, 2011
3:00PM Eastern Daylight Time (19:00 GMT)**

POLICY REGARDING PRE-PUBLICATION AND PRESS COVERAGE

The Conference Pre-Publication Policy is intended to maintain ISSCC as the premier global forum for the debut of technical innovations in architecture, circuitry, algorithms, and related areas. Contrary to popular opinion, a paper may be acceptable even if it is connected with a product that has been sampled, entered production, and/or appeared in a publication. In such situations, the Program Committee is responsible for assessing whether substantial technical disclosure has already taken place. The substantial-technical-disclosure rule may be complied with, even if there has been disclosure of the following types of material: abbreviated data sheets that provide only specifications, a feature list, or a coarse block diagram; material under nondisclosure agreement; die photos; articles addressing only the marketing or applications aspects of the product; presentations at workshops or niche conferences with limited attendance and **NO** published proceedings or Web presentation, nor press coverage. Conversely, a paper will be rejected if disclosure of the innovative circuitry, architectures, algorithms, etc, occurs in articles, data sheets, trade journals, or other conferences. Any detailed disclosure of innovative technical ideas on the World-Wide Web before the paper presentation at the Conference will be considered pre-publication. Prospective authors should submit all material relevant to pre-publication at the time of paper submission to be uploaded via the ISSCC Website.

Abstracts of accepted papers will be disclosed to the Press in November. Copies of final manuscripts, including figures, will be made available to approved members of the Press prior to the Conference, for post-Conference articles.

**For further details on Pre-Publication Policy, or assistance in assigning a subject area, contact the Program-Committee Chair:
Hideto Hidaka, Tel: +81-72-787-5683, Email: hideto.hidaka.pz@renesas.com.**

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Sunday-Thursday
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