2024 IEEE International Conference on Integrated Circuits, Technologies and Applications

October 25-27 (Fri-Sun), 2024

Hangzhou 杭州, Hangzhou, China

Call for Papers

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The 7th IEEE International Conference on Integrated Circuits, Technologies and Applications (ICTA 2024), will be held on October 25-27, 2024 in Hangzhou, China. This conference will be held in China to provide an international forum according to IEEE standard for the presentation and exchange of the latest technical achievements and cross-discipline fertilization of IC designs, technologies, and applications in our fast-changing society. This year's theme is "Chiplet and Future IDM". ICTA 2024 welcomes papers of new and innovative discoveries and designs on:

Topics include, but are not limited to, the following technical areas:

1. **Wireless, RFIC, and MMIC:** Si-based RFIC building-block circuit, compound-semiconductor-based MMIC building-block circuit, LNA, PA, VCO, PLL, phase shifter, mixer, RF switch, balun, driver amplifier, transceiver, etc.
2. **Analog and Mixed-Signal ICs:** analog circuits including amplifiers, comparators, oscillators, filters, references, nonlinear analog circuits and digitally-assisted analog circuits; data converters including Nyquist-rate and oversampling ADC and DAC, etc.
3. **Power Management ICs:** Power management and control circuits; switched-mode power converter ICs using inductive, capacitive, and hybrid techniques; linear regulators; gate drivers; topologies for wide-bandgap devices; power and signal isolators; LED drivers, wireless power, and envelope supply modulators; energy harvesting circuits and systems.
4. **Digital ICs and Memory:** SoC, processor, FPGA, AI and deep-learning processor, DSP, NoC, memory, etc.
5. **Wireline ICs:** high-speed data link, optical transceiver, OEIC, SerDes, TIA, CDRs, equalizer, modulator, etc.
6. **Sensor ICs:** MEMS sensors, image sensors, physical sensors, chemical sensors, bio-sensors, smart and intelligent sensors, sensor interface, sensor technology and applications, etc.
7. **Modeling, EDA and Testing:** compact models and extraction techniques (silicon based), SPICE models and extraction techniques (non-silicon), modeling technique of GaN, SiC, ASM-HEMT, 2D-material-based devices, quantum devices, test structures design and model parameter extraction, RF calibration and reliable data acquisition, EDA, EM/TCAD simulation, co-simulation and verification technique, PDK validation, etc.
8. **Device and Process Technologies:** CMOS, FinFET, FD-SOI, BCD, SiGe, III-V, HEMT, HBT, 3rd generation materials, GaN, power electronics, SiC, GaO, junctionless device, negative capacitance device, MEMS, device characterization, device FAR, 3D integration, Chiplet, flash, OPT, MPT, SRAM, DRAM, 3D NAND, MRAM, RRAM, PCRAM, FeRAM, crossbar, DRAM+MCU, etc.
9. **Packaging and Hybrid Integration:** Chiplet, active antenna, EM field, filters, Hybrid MIC, MCM, SiP, SoP, TSV, flip chip assembly, wire bonding, anisotropic conductive film, interconnection technologies, multi-physics and multiscale EM computation/simulation, 3D integration, etc.
10. **Emerging Semiconductor Materials and Devices**: heterogeneous integration, III-V compounds, silicon photonics, optoelectronic device, 2D materials, green and implantable materials, neuromorphic device, device characterization, etc.
11. **System and Applications:** IC based module and system integration, automotive electronics, automotive radar, 5G systems, AI systems, IoTs, healthcare and biomedical systems, etc.
12. **Intelligent Robots:** robot kinematics/dynamics/control, system integration, AI in robotics, sensor/actuator, bio-inspired systems, robot perception, human robot interaction, and robot vision, etc.

Paper submission and deadlines:

To encourage timely reporting of the latest results and to have better opportunities to expand papers for possible journal publications, prospective authors are invited to submit a **2-page** paper (both initial submission and final version, if accepted) in English and in IEEE Xplore PDF format. The paper should emphasize original contributions and key findings, including figures, diagrams and results from verified simulations with direct or indirect measurements. Up to 2 additional pages of figures supporting initial submission which will not in final publication are encouraged. References should be clearly cited and up-to-date. Invited papers can extend up to 6 pages submission. By submitting the paper, the authors promise that, if accepted, at least one of them will attend ICTA 2024 with full registration.

Manuscript submission deadline:	July 28, 2024
Notification of acceptance:	September 5, 2024
Final submission:	September 20, 2024

Website: http://www.ieee-icta.cn or http://www.ieee-icta.net

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About ICTA and What is New?

China is becoming a semiconductor hub for academia, industry and market. However, young Chinese researchers, in particular students, lack the opportunity to attend IEEE conferences. International counterparts also wish to experience firsthand the fast-growing semiconductor sector in China. To this end, ICTA was founded by a group of Chinese scholars and will be held annually in China. It will be a broad yet advanced forum for IC designs, technologies and applications worldwide.

The conference will feature both invited and contributed papers. Distinguished researchers will be invited to deliver keynote speeches on technology or circuit trends and significant advances. The best contributed papers will be selected for awards. All papers will be presented in parallel sessions, including invited talks and focused sessions. ICTA will start with FREE Distinguished Lectures and concluded with forums/workshops. Exhibition showcasing the latest engineering samples, tools and technology options will be facilitated as well. More information can be found at http://www.ieee-icta.cn or http://www.ieee-icta.net.

Both invited and contributed papers that are accepted by ICTA will be published in conference proceeding.

What is new? Authors are invited to submit an extend version of 5+ pages to the special issue of Journal of Semiconductor (JOS), thus possibly extending the conference abstract into a journal paper which will also appear in IEEE Xplore. The extended paper should reflect reviewers' opinions and audience feedbacks from ICTA.

Author registration and paper submission steps:

1. Author registration form: title, author(s) and affiliation(s), and statement of exclusivity. This form includes also a 30-50-word abstract (description of the subject, its importance, and how the work contributes to the field). This information is required and must be submitted via the website.

2. Authors must use the template provided on the above website to format their paper. The submitted paper may not exceed 2 pages total. Additional pages will charge extra fees. The file size must be less than 2 MB. For PDF files, use Distiller and select "embed all fonts". Please note that we accept no *.doc files. Additional documents (figures, diagrams and results from verified simulations with direct or indirect measurements) are encouraged to be attached. Additional materials are not included in official publications and will not charge extra fees.

3. **Submission deadline: July 28 , 2024**

Paper selection criteria:

All submissions must be in **English.**

Papers will be selected based on the following factors:

- **Originality**: The paper must be unique, significant, and state-of-the-art. Are references to existing literature included?
- **Quantitative content**: The 2-page extended abstract should give an explicit description of the work with supporting data.
- **Quality:** Clarity of the writing and figures. What is the context of the contribution to previous work?
- **Interest to ICTA attendees**: Why should this work be reported at this conference?

About Hangzhou 杭州

Hangzhou is the provincial capital of Zhejiang, China. Hangzhou. The city is situated in the northwestern part of the province, positioned strategically at the head of Hangzhou Bay between Shanghai and Ningbo. Its historical significance is deeply rooted as the southern terminus of the Grand Canal, rendering it one of China's most illustrious and prosperous cities over the past millennium. Today, Hangzhou stands as a major economic and e-commerce hub within China, ranking as the second-largest city in the Yangtze Delta after Shanghai. Renowned for seamlessly blending rich tradition with cutting-edge technology, Hangzhou has become a focal point for advancements in chip technology. While celebrated for its picturesque landscapes and vibrant cultural heritage, the city has also emerged as a global leader in technological innovation. Notably, Hangzhou has made substantial progress in recent years, positioning itself as a prominent hub for semiconductor research and development. A serial of influential companies have played a pivotal role in chip designs. Beyond its technological prowess, Hangzhou meticulously preserves its rich cultural heritage, offering a harmonious blend of tradition and modernity. Landmarks like West Lake and Lingyin Temple showcase the city's historical charm, providing a serene contrast to its bustling technological landscape. As Hangzhou continues to make strides in chip technology, it stands poised for a future defined by innovation and growth. The city's dynamic fusion of tradition and cutting-edge advancements extends an invitation to global explorers to experience a unique blend of ancient allure and technological marvels.