RFIC 2023: IEEE Radio Frequency Integrated Circuits Symposium

San Diego, CA, USA

June 11-13, 2023

RFIC 2023 Call for Papers

The **2023 IEEE Radio Frequency Integrated Circuits Symposium (RFIC 2023)** is the premier forum focused exclusively on presenting the latest research results in RF, millimeter-wave, and wireless integrated circuits.

Continuing in 2023: RFIC has expanded its focus to include systems, applications, and *interactive demonstrations*, including mobile systems for 5G and beyond, radar, terahertz, biomedical, and optoelectronic systems.

Technical Areas: The symposium solicits papers describing original work in all areas related to RF, mm-Wave, THz, and wireless systems and ICs. Work must be demonstrated through IC hardware results and measurements.

- **Wireless Radios and Systems-on-Chip**: innovative circuit and system-on-chip concepts related to software-defined radio, cognitive radio, interference cancellation, full-duplex, advanced SOCs for cellular/WiFi, GPS, low-power radio circuits for sensors, IoT, Zigbee, biomedical applications, radio architectures suitable for energy harvesting, wake-up receivers, *etc*.
- **mm-Wave Communication Circuits and Systems-on-Chip:** >20GHz (*i.e.*, mm-Wave through THz) circuits and SOCs for wireless communication, including phase shifters, phased arrays, beamformers, MIMO transceivers and other systems for 5G and 6G applications.
- **Radar, Imager, and Sensor Systems-on-Chip**: integrated radar, imaging, spectroscopy, and sensing circuits at microwave through THz frequencies, including vehicular radar SOCs.
- **Transmitters and Power Amplifiers:** for RF through mm-Wave frequencies and higher, power amplifiers, drivers, modulators, digital transmitters, advanced TX circuits, linearization and efficiency enhancement techniques, *etc*.
- **Front-End Circuits:** LNAs, mixers, VGAs, T/R switches, integrated FEM, amplifiers, filters, demodulators.
- **Analog and Mixed-Signal Circuits:** RF and baseband converters (ADC/DAC), sub-sampling/over-sampling circuits, converters for digital beamforming, converters for emerging TX and RX architectures, power (DC-DC) converters for RF applications, I/O transceivers and CDRs for wireline and optical connectivity.
- **Oscillators and Frequency Synthesizers:** VCOs, injection-locking frequency dividers/multipliers, PLLs, DLLs, MDLLS, DDS, LO drivers, frequency dividers.
- **Device/Packaging/Modeling and Testing Technologies:** RF device technology (both silicon and compound semiconductors), MEMs, integrated passives, photonic, reliability, packaging, modeling and testing, EM modeling/co-simulation, built-in-self-test (BIST).
- **Emerging Circuit Technologies:** MEMs-based sensors and actuators, 3D ICs, silicon photonics, quantum computing ICs, hardware security, novel terahertz solutions, and AI/machine learning applied to RF circuits.
- **RFIC System Applications**: system level innovations in RFICs with application to communication, biomedical, radar and imaging. May include *interactive demonstration* and presentation. Additional details can be found on the RFIC website.

Format and Location: The 2023 symposium is currently planned as an in-person conference. More details to follow. In person events will be held at the San Diego Convention Center in San Diego, CA. RFIC 2023 starts on Sunday, June 11, 2023 with a large selection of workshops followed by two plenary talks and a reception featuring our top industry and student papers. Monday and Tuesday, June 12-13 will be comprised of oral presentations, and panel sessions.

Microwave Week 2023: RFIC 2023 kicks off *Microwave Week*. The week continues with the International Microwave Symposium and then the ARFTG Microwave Measurement Conference. This week, with more than 9000 participants, is the world's largest and most important gathering of RF and microwave professionals in the field.

Industry Exhibition: A three-day Exhibition typically showcases more than 900 Exhibitors who represent the state-of-the-art of the industry covering everything needed for RF and microwave design. More on the format of the 2023 Exhibition is found on both RFIC and IMS websites

Electronic Submission Deadlines

Manuscript in PDF format:	**January 15, 2023**
Final Manuscripts for the RFIC Digest:	**March 22, 2023**

All submissions must be made at rfic-ieee.org in pdf form. Hard copies are not accepted.

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rfic-ieee.org

Author Registration and Paper Submission Steps:

1. All papers must be submitted via the website: **rfic-ieee.org**.
2. Author registration form: title, author(s) and affiliation(s), and statement of exclusivity. This form also includes an abstract of 30-50 words (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: **rfic-ieee.org**.
3. Authors must use the template provided on the website to format their manuscript. **The manuscript may not exceed 4 pages total and the file size must be less than 2 MB. For PDF files, use Distiller and select "embed all fonts". Please note that we do not accept "*.doc" or "*.docx" files.**
4. Authors must adhere to specific guidelines to ensure that the submission complies with our **DOUBLE-BLIND REVIEW PROCESS**. Details are provided on **rfic-ieee.org**. Pay close attention to how authors should cite their previous work.
5. Submission deadline: **15 January 2023.** *Submissions will be acknowledged instantly.* Late submissions will not be considered.

Authors of accepted papers will be required to submit a final manuscript for publication, including a clear die photo of the work described in the manuscript.

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 papers 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 attendees**: Why should this work be reported at the RFIC Symposium?

Clearances: Authors must obtain all required company and government clearances prior to submitting a paper. A statement of clearance, signed by the submitting author, must accompany the final manuscript for the paper to be considered for publication.

Double Submission: Authors who do not properly cite their previous work, including concurrent IMS or other conference submissions, or who submit an RFIC manuscript to two or more publications without informing the editor/TPC chair that the paper is concurrently under review by another publication will be reported to IEEE and may be banned from future publications.

Notification: Authors will be notified of decisions on 8 March 2023. Authors of accepted papers will receive copyright release forms and instructions for publication and presentation. Final manuscripts for publication must be received by **22 March 2023.**

Presentation Format:

- ***Oral Presentation Papers:*** Authors will be given 20 minutes to describe novel circuit and system techniques, measurement results, and potential impact to the RFIC community.
- ***Interactive Demonstration Papers:*** Select papers from the RFIC System Applications area will be presented in poster format along with functional hardware demonstration.

All Authors must provide a PDF version of the presentation material for registered attendees to download during and after the symposium.

Visa Requirements: *Due to the short timeframe between paper acceptance and RFIC, contact authors should provide their name as it shows on their passport and correct mailing address*.

Student SUPERPASS: RFIC enthusiastically invites participation from students at all levels to attend Microwave Week. All students will be offered the opportunity to purchase a SUPERPASS allowing access to RFIC, IMS, ARFTG, all workshops, technical lectures, panels, and more. SUPERPASS prices are significantly discounted to encourage participation.

Best Student Paper Award: A student paper award contest will be held as part of RFIC. Student papers will be reviewed in the same manner as all other papers. To be considered, the author must have been a full-time student (9 hours/term graduate, 12 hours/term undergraduate) during the time the work was performed **and** be the lead author and presenter of the paper. *The email address of the student's advisor must be supplied during submission time and will be used to verify student eligibility*. Complimentary registration will be given to the student finalists. *Finalists will present a poster or a demo at the Sunday's Symposium Showcase.*

Industry Best Paper Award: An industry paper award contest will be held as part of RFIC. Industry papers will be reviewed in the same manner as all other conference papers. Only papers with an industrial first author **and** presenter will be qualified for the Industry Best Paper Award. *Selected finalists will also present a poster or a demo at the Sunday's Symposium Showcase.*

Invited Journal Articles: Select authors will be invited to submit an expanded manuscript to the RFIC special issue in *IEEE Journal of Solid-State Circuits*. In addition, all authors are invited to submit an expanded version of their papers to a special issue of *IEEE Transactions of Microwave Theory & Techniques*.

Photos Courtesy of the San Diego Convention Center.