RFIC 2021: IEEE Radio Frequency Integrated Circuits Symposium

Atlanta, GA, USA

June 6-8, 2021

RFIC 2021 Call for Papers

The **2021 IEEE Radio Frequency Integrated Circuits Symposium (RFIC 2021)** is the premier forum focused exclusively on presenting the latest research results in RF, millimeter-wave, and wireless integrated circuits. The Symposium is part of Microwave Week 2021, the world's largest RF & microwave technical convention.

Continuing in 2021: RFIC has expanded its focus to include **systems**, **applications**, and ***interactive demonstrations***, including 5G systems, radar systems, terahertz systems, biomedical systems, and optoelectronic systems.

Technical Areas: The symposium solicits papers describing original work in all areas related to RF, millimeter-wave, THz, and wireless ICs and systems. 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*.
- **mmWave Communication Circuits and Systems-on-Chip:** >20GHz (*i.e.*, mmWave through THz) circuits and SOCs for wireless communication, including 5G, phase shifters, phased arrays, beamformers, and transceivers.
- **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 mmWave 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**: novel applications of RFICs in communication, biomedical, radar and imaging systems, calibration, test and measurement, advanced testbeds. May include *interactive demonstration* and presentation. Additional details is found on the RFIC website.

Format and Location: The 2021 symposium is currently planned as a hybrid event with both in-person and virtual activities. More details to follow. In person events will be held at the Georgia World Congress Center, in Atlanta, GA. RFIC 2021 starts on Sunday, June 6, 2021 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 7-8 will be comprised of oral presentations, an interactive demonstration, and panel sessions.

Microwave Week 2021: RFIC 2021 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, including materials, technologies, components and subsystems, as well as RF IC design and simulation software, measurement and fabrication equipment. It is a perfect venue for engineers to find the newest on RF, microwave, and mmWave ICs.

Electronic Submission Deadlines

Technical Paper in PDF format:	**11 January 2021**
Final Manuscripts for the RFIC Digest:	**22 March 2021**

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

Sponsored by the IEEE MTT-S, EDS, and SSCS

rfic-ieee.org

Digital Object Identifier 10.1109/JSSC.2020.3026459

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 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: **rfic-ieee.org**.
3. Authors must use the template provided on the website (above) 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" files.**
4. Authors must adhere to specific guidelines to ensure that the submission complies with our **DOUBLE-BLIND REVIEW PROCESS**. Details are provided on the **RFIC website.** Pay close attention to how authors should cite their previous work.
5. Submission deadline: **11 January 2021.** *Submissions will be acknowledged instantly.* HARD copy or FAX submissions will not be accepted. 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 RFIC.

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 RFIC?

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 19 Feb 2021. 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 2021.**

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 interactive and 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 conference, the 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 student participation.

Best Student Paper Award: A student paper award contest will be held as part of the Symposium. 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 the student eligibility.* Complimentary registration will be given to the student finalists. *Finalists will present a poster at Sunday's Symposium Showcase.*

Industry Best Paper Award: An industry paper award contest will be held as part of the Symposium. 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 for 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*.

Three Minute Thesis (3MT®): A full-day Sunday workshop on presenting technical work for broader audiences, concluded by a 3MT® competition. Student and young professional participants are selected based on RFIC paper acceptance and a subsequent video submission.