

New Systems Initiative for the 2020 IEEE RFIC Symposium



The IEEE RFIC Symposium is now soliciting papers in the new areas of RF systems and applications. This reflects the fact that critically important research exists at the boundaries of circuits, systems, and applications. Systems and applications of interest include, but are not limited, to the following: 5G systems, radar and sensing systems, terahertz systems, internet of things, biomedical systems, security, optoelectronic and photonic systems, and advanced RF/wireless testbeds. **The committee encourages submissions whose presentations can include an interactive demonstration.**

Accepted papers will be provided an opportunity to present a demonstration of their work in a new systems and applications forum. This will be in addition to an oral presentation of their work as part of a systems and application technical session.

Below, we provide answers to frequently asked questions to further describe our new initiative.

Question 1: What types of work are appropriate for submission to this new subcommittee?

Answer: Published work must advance the state of the art within areas that relate to RF, microwave, mmWave, terahertz, biomedical, internet of things, system-in-package, silicon photonics, and other wireless systems and applications. Research work should employ and/or leverage advanced RF integrated circuits to achieve their new innovation.

Question 2: What are examples of envisioned work for this new subcommittee?

Answer : Examples of work which are of interest include: a) use of machine learning to optimize the performance of an advanced RF integrated circuit, b) a system comprising multiple RF integrated circuits which are used together to achieve a new and innovative result (such as radar system, scaled phased arrays with antenna-in-package, self-powered body area network, LiDAR, imager, etc.), c) a wireless power delivery solution, d) an indoor GPS solution or a WiFi imaging solution , or e) new algorithms for test and calibration of advanced RF circuits and arrays.

Question 3: Can the work use RF integrated circuits which have been previously published?

Answer: Yes, the submitted work can employ RF circuits which have been published elsewhere. This prior work should be cited according to normal rules and comply with RFIC's double-blind review policy. Note that the new publication should still advance the state of the art in a meaningful way and should include system and/or design novelty. It should not be a restatement of prior art in a new paper. The review committee will evaluate the prior art to evaluate how the new paper advances the state of the art over the prior work.

Question 4: Are die micrographs and/or circuit level schematics required?

Answer: You must include necessary information to properly describe your innovative hardware result. This should include photographs of the assembled system and may also include micrographs, block diagrams of systems, and/or circuit schematics for portions which are relevant to the systems and application advancement being reported.

Question 5: Are simulation results acceptable or must the work relate to hardware measurements?

Answer: The IEEE RFIC Symposium remains committed to the presentation of hardware results. For this new initiative, we expect that the work of highest interest to our microwave and solid-state communities will be that which is backed up through hardware measurements. Simulation-only work is better suited for other technical communities.

Question 6: How will the demonstrations be organized and how does this relate to the RFIC interactive forum in previous years?

Answer: We are restructuring the RFIC Symposium's interactive forum to become a new forum devoted exclusively to these systems and application demonstrations. Authors of accepted papers will have the opportunity to present their work in this new *systems and application demonstration forum*. This would include a poster describing the work and a demonstration of their actual hardware with physical samples and/or measurement equipment. We envision that this will give the audience a better opportunity to fully understand the systems and application innovation and give the authors a better opportunity to present their work. The RFIC committee will work with the authors on the logistics of this demonstrations session to both understand the author's capabilities and interests related to the demonstration and the required infrastructure.

Question 7: Will authors of the paper also have opportunity for regular presentations or will the work only be presented in the demonstration forum?

Answer: Authors of accepted papers will present their work as regular oral presentations and will also have the opportunity to participate in the system and application demonstration forum.

Question 8: Are publication requirements different than for other RFIC papers?

Answer: The publication requirements are the same for papers in the RFIC systems and application area, namely a four-page paper which describes the work.

Question 9: Can papers which are submitted to the systems area be moved into another area for review? Likewise, can papers submitted to other areas be moved into the systems area?

Answer: The technical program committee works hard to ensure that all submitted papers are evaluated and reviewed within the subcommittee which is most qualified for that work. As a result, papers may end up being moved between subcommittees, including moving into or out of the systems and applications subcommittee, for their review.

Question 10: Can authors with accepted papers in other subcommittees also participate in the new RFIC System and Application Demonstration Forum?

Answer: Yes, we encourage participation from all of our authors in this demonstration forum and will work with authors of accepted papers to solicit participation.