

Guest Editorial

Introduction to the Special Section on the 2021 RFIC Symposium

THIS Special Issue of the IEEE JOURNAL OF SOLID-STATE CIRCUITS (JSSC) features a Special Section on key invited papers presented at the 2021 Radio Frequency Integrated Circuits Symposium (RFIC Symposium), held in hybrid mode on June 6–8 (in-person) and June 21–July 20, 2021 (online). The RFIC Symposium is the world's premier conference focused on RF and millimeter-wave (mm-wave)-integrated circuits and systems technology. It shares the venue with the IEEE MTT-S International Microwave Symposium (IMS) as part of the Microwave Week and is co-sponsored by the IEEE Solid-State Circuits Society.

The Special Section of the RFIC consists of 15 outstanding articles covering a wide range of topics and applications in the RF and mm-wave domain. These articles are mainly extensions of their corresponding conference papers available in the 2021 RFIC Symposium conference digest. They provide extra materials such as deeper discussions of the architecture and circuit concepts, extra measurements, and benchmark data to the state of the art.

The invited articles include five topics on mm-wave power amplifiers and (phased array) transmitters and four articles on circuits operating at frequencies beyond 100 GHz. The remaining articles discuss designs and techniques of various building blocks for a wide range of applications.

I believe the new ideas and techniques presented by the articles in this Special Issue will be of interest to the JOURNAL readers and provide a good snapshot of the state of the art in RF and mm-wave integrated circuit design.

On behalf of the RFIC Symposium Committee, I would like to extend special thanks to all the authors for accepting the invitation to submit extended articles to this Special Issue and for working hard to meet various milestones in a timely manner. I would like also to thank the anonymous reviewers whose feedback and comments improved the quality of the articles to ensure that the high-quality standard of the IEEE JSSC is maintained. Special thanks go to Prof. Pavan Kumar Hanumolu, JSSC Editor-in-Chief, for his support and guidance, and to the JSSC administrators for their assistance. Finally, I would like to invite the readers to attend the 2022 RFIC Symposium. Currently planned as an in-person conference, the event will be held on June 19–21, in Denver, CO, USA. This year's event will include a wide variety of workshops, technical sessions, panels, interactive demonstrations, and a technical exhibition. For more information, please visit the conference website at: <http://rfic-ieee.org>.

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Domine M. W. Leenaerts (Fellow, IEEE) received the Ph.D. degree in electrical engineering from the Eindhoven University of Technology (TU/e), Eindhoven, The Netherlands, in 1992.

From 1992 to 1999, he was with TU/e. In 1995, he was with the Department of Electrical Engineering and Computer Science, University of California at Berkeley, Berkeley, CA, USA. In 1997, he was an Invited Professor at the Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland. From 1999 to 2006 he has been a Senior Principal Scientist with Philips Research Laboratories, Eindhoven, where he was involved in RF-integrated transceiver design. In 2006, he moved to NXP Semiconductors, Eindhoven, where he is now a Fellow in RF IC design and architectures, next to holding a chair as Professor at TU/e. He has published over 250 papers in scientific and technical journals and conference proceedings and holds over 25 U.S. patents.

Dr. Leenaerts served as an IEEE Distinguished Lecturer in 2001–2003 and 2009–2011, as an Associate Editor of the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS (2002–2004) and as an Associate Editor of the IEEE JOURNAL OF SOLID-STATE CIRCUITS (2007–2010). He was a Special Guest Editor of IEEE JOURNAL OF SOLID-STATE CIRCUITS in 2011. He was in the period 2005–2008 the IEEE Circuits and Systems Society Member representative in the IEEE Solid-State Circuits Society (SSCS) Administrative Committee on which he was until 2016 an elected member and a Distinguished Lecturer Program Chair. Currently, he is the Chair of the IEEE Fellow Evaluation Committee for SSCS. He served on the Steering Committee of the European Solid-State Circuits Conference and still serves on the Steering Committee of the IEEE Radio Frequency Integrated Circuits (RFIC).