



[cambridge.org/mrf](https://www.cambridge.org/mrf)

Amelie Hagelauer^{1,2}  and Ilona Rolfes³ 

¹Fraunhofer EMFT Fraunhofer Institute for Electronic Microsystems and Solid State Technologies, Munich, Germany; ²Chair of Micro- and Nanosystems Technology, TUM School of Computation, Information and Technology, Technical University of Munich, Munich, Germany and ³Chair of Microwave Systems, Faculty of Electrical Engineering and Information Technology, Ruhr University Bochum, Bochum, Germany

Editorial

Cite this article: Hagelauer A, Rolfes I (2025) EuMC 2023 Special Issue. *International Journal of Microwave and Wireless Technologies*, 1–2. <https://doi.org/10.1017/S1759078725000273>

Corresponding author: Amelie Hagelauer
Email: amelie.hagelauer@tum.de

This Special Issue of the 53rd European Microwave Conference (EuMC 2023) is part of a trilogy of special issues for the European Microwave Week (EuMW 2023), whose 26th edition took place from September 17 to 22, 2023, in Berlin, Germany. EuMW 2023 was organized by the European Microwave Association and chaired by Prof. Thomas Zwick. As one of the three sister conferences within EuMW, EuMC is Europe's premier technical conference, covering a broad spectrum of high-frequency-related topics, including materials, technologies, circuits, systems, and applications. It addresses all these aspects comprehensively: theory, simulation, design, and measurement.

The 53rd EuMC 2023 took place from September 19–21, 2023, as part of EuMW 2023. With an impressive 375+ paper submissions in 2023, the event demonstrated the continued strong interest and engagement of the European microwave community. The authors of the top-rated papers were invited to submit extended manuscripts to this Special Issue of the *International Journal of Microwave and Wireless Technologies (IJMWT)*. All submitted manuscripts underwent the journal's standard peer review process to ensure quality and relevance.

As the guest editors of this EuMC 2023 Special Issue, we would like to warmly thank all authors for their excellent contributions and the reviewers for their professional and timely efforts in reviewing the manuscripts.

The research topics featured in this Special Issue highlight significant advancements in radio frequency, microwave, and terahertz (THz) technologies. They focus on cutting-edge circuit designs, measurement techniques, and integration strategies for next-generation networks and applications. Key studies address enhancing 5G-Advanced capabilities, improving bit efficiency in massive multiple-input–multiple-output systems, and comparing electronic and optoelectronic signal generation for (sub-)THz communications. Innovative approaches are also explored in compact measurement systems, beam-steering antennas, and high-frequency packaging strategies. Furthermore, the development of advanced filters, combiners, and waveguide components with multifunctional, tunable, and high-selectivity characteristics showcases progress in improving signal integrity and overall system performance across various applications. These innovations address the growing demands of modern wireless and high-frequency systems.

In conclusion, we hope you enjoy reading this EuMC 2023 Special Issue and warmly invite you to submit your recent research findings to the *International Journal of Microwave and Wireless Technologies*!



Amelie Hagelauer received the Dipl.-Ing. degree in Mechatronics in 2007 and her Dr.-Ing. degree in Electrical Engineering in 2013, both from Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany. In November 2007, she joined the FAU Institute for Electronics Engineering, where she conducted research on bulk acoustic wave (BAW) technologies. Since 2013, her research has focused on surface and bulk acoustic wave (SAW/BAW) components, RF MEMS technologies, and microwave

integrated circuits for frontends. From 2016 to 2019, she led a research group specializing in electronic circuits. In August 2019, she was appointed as a full professor at the University of Bayreuth, Germany. Since September 2021 she is a full professor at the Technical University of Munich (TUM), Garching, Germany, and is Co-Director of the Fraunhofer Institute for Electronic Microsystems and Solid State Technologies EMFT in Munich, Germany. She has authored or coauthored more than 180 peer-reviewed publications in the fields of microwave theory and technology, electronic circuits and systems, as well as communication and sensing systems.



Ilona Rolfes received the Dipl.-Ing. and Dr. Ing. degrees in electrical engineering from Ruhr University Bochum, Bochum, Germany, in 1997 and 2002, respectively. From 1997 to 2005, she was a research assistant with the High Frequency Measurements Research Group, Ruhr University Bochum. From 2005 to 2009, she was a junior professor with the Department of Electrical Engineering, Leibniz University

Hannover, Hannover, Germany, where she became Head of the Institute of Radio Frequency and Microwave Engineering, in 2006. Since 2010, she has been leading the Institute of Microwave Systems, Ruhr University Bochum, Germany. Her fields of research concern high-frequency measurement methods, material characterization, radar sensing and imaging. Ilona Rolfes is member of the Executive Committee of IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes. She is also Board Member of the German IEEE MTT-AP Chapter and the German Commission for Electromagnetic Metrology of International Union of Radio Science (U.R.S.I.).