International Journal of Microwave and Wireless Technologies

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Editorial

Cite this article: Nallatamby J-C, Portilla J, Haddadi K, Latry O, Hemour S, Crunteanu A (2025) EuMW 2024 special issue. *International Journal of Microwave and Wireless Technologies* **17**(9), 1443. https://doi.org/10.1017/S1759078725102791

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EuMW 2024 special issue

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We are pleased to introduce this Special Issue of the *International Journal of Microwave and Wireless Technologies* (*IJMWT*) dedicated to extended and revised versions of selected papers presented at the European Microwave Week (EuMW) 2024, held between 22 and 27 September in Paris, France, and chaired by Prof. Guillaume Ducournau. EuMW 2024 brought together researchers, engineers, and industrials from across the global microwave community to explore the latest scientific and technological developments shaping the future of radiofrequency, microwave, millimeter-wave, and terahertz devices and systems. As Europe's most significant annual events in the field, EuMW continues to serve as a forum for sharing research results, fostering interdisciplinary collaboration, and highlighting both established and emerging themes within the microwave domain.

This Special Issue reflects the technical diversity and high scientific quality that characterized the 2024 edition of the EuMW. Authors of selected contributions were invited to submit substantially expanded versions of their EuMW papers, incorporating novel approaches, additional experimental validation, or broader contextualization. Together, they illustrate the interaction between advanced modeling and simulation techniques and the integration of microwave technologies into diverse application environments.

All submissions underwent a thorough peer-review process following *IJMWT* standards, resulting in a collection of articles representing current research directions across the microwave and wireless technologies community. We hope that readers will find this collection useful and informative, and that it will support continued progress and interactions in the field.

Several contributions focus on *innovations in passive and active microwave circuits*, spanning the microwave to terahertz frequency ranges, including new filter structures, power amplifier configurations, oscillator designs, new microwave biosensors, advanced measurement strategies, and packaging and integration techniques, which aim to enhance the overall performance of devices in terms of efficiency, linearity, sensing, or compactness. These works underline how circuit engineering continues to evolve in response to the increasing requirements of communication and sensing systems.

Other articles examine *recent developments in antenna and metasurface technologies*, with attention to reconfigurability, multifunctional operation, and high-frequency performance. The rise of millimeter-wave and sub-THz applications – motivated by emerging wireless standards and advanced imaging or sensing systems – has encouraged the adoption of new design methodologies and materials.

Finally, some contributions deal with *microwave system-level engineering*, including radar signal processing, new architectures of joint radar and communication systems, tracking and localization, and artificial intelligence in radars at millimeter-wave and sub-THz domains. These works highlight the importance of end-to-end engineering considerations in translating component-level advances into functional, deployable technologies.

We would like to thank all authors who submitted extended versions of their EuMW 2024 papers for consideration. Their efforts in preparing substantially expanded manuscripts have been essential to the success of this Special Issue. We also express our appreciation to the work of the EuMW 2024 TPC Committee – which undertakes a first selection of this Special Issue's papers and the reviewers who provided constructive evaluations and helped ensure the quality of the published articles. Their contributions are essential in sustaining a strong European and international microwave research community.

Finally, we deeply thank the *IJMWT* editorial and production teams – and especially the Editor-in-Chief of IJMWT – for their invaluable support throughout the preparation of this Special Issue.

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