From the Editor's Desk

Welcome to 2024

■ **Robert H. Caverly**

Welcome to 2024 and the first issue of the year for *IEEE Microwave Magazine*. Since it's January, besides welcoming in the New Year, we should also welcome our new MTT-S president, Maurizio Bozzi, from the University of Pavia in Pavia, Italy. As is our tradition, Maurizio will be providing his thoughts in each issue on the various activities of the Society as well as highlighting the various roles of our Society volunteers. This month, we have his first "President's Column" column [A1], where Maurizio provides a little information about his background as well as his vision for the direction of the Society in 2024. Maurizio provides a clear and detailed road map of the Society's direction, and I highly recommend that you check out his column as one of your first reads this month.

I also want to thank the immediate past president, Nuno Borges Carvalho, for diligently submitting his columns to the magazine for the past year and for keeping us all informed about the activities within the Society. One example of the role that the MTT-S AdCom plays in our continued professional development is through the efforts of the Education Committee and its organization of the monthly webinar series. In this month's issue, Xun Gong [A2], chair of the Education Committee, outlines the schedule for the webinars through June 2024. The webinar platform is excellent, with high-quality video and audio, and professional development hours are also available. I should point out to our student and Young Professional readers that the March 2024 webinar will be focused on the 3MT competition, and so, if you plan on entering this competition at IMS2024, this would be an excellent webinar to attend.

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We have three technical features for you this month that span the breadth of our Society's field of interest. The first feature, by Mengjie Qin et al. [A3], provides a review of recent work in on-chip tunable bandpass filters (TBPFs). Three types of TBPFs are discussed: BPFs with adjustable frequency, BPFs with adjustable bandwidth, and BPFs with adjustable transmission zeros. Development trends and limitations of the on-chip TBPF are also summarized, which should help designers in choosing the best circuit for their application. In the second technical feature by Yanni Wang, Xuehong Sun, and Liping Liu [A4], the authors cover the basic concepts and properties of orbital angular momentum (OAM). With this background material well established, the authors then go into how the OAM beam is produced and detected in the millimeter-wave region, in addition to reviewing the pros and cons of various approaches as well as applications. The authors conclude the feature with a summary of the previous material as well as a future perspective. The final article, by Xiaobang Shang et al. [A5], looks at measurement techniques from a measurement metrology viewpoint and the details behind measurement standards, referencing, and traceability.

Besides the technical features, we have our regular columns this month, covering

Robert H. Caverly (robert.caverly@villanova.edu) is with Villanova University, Villanova, PA 19085 USA.

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a wide range of topics. In the "MicroBusiness" column," Fred Schindler [A6] looks at activities at the IEEE level of the Technical Activities Board (TAB). Rajeev Bansal [A7], in the "Microwave Surfing" column, discusses introductory books available through publishers and also provides a challenge to the MTT-S community to write a short book on a topic near and dear to all of us. Shortly after IMS2023 ended in San Diego, the 2023 edition of the IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO2023) was held in Winnipeg, Ontario, Canada, and the organizers of this conference have prepared an excellent report on the conference activities [A8].

Many of our readers, including myself, are challenged each month by Takashi Ohira [A9] of the Toyohashi University of Technology, who provides us with intriguing problems in our "Enigmas, etc." column. Each January, Takashi takes us in a new direction of thought, and this month is no exception. What is slightly different this month is that Takashi also provides us with an in-depth "Educator's Corner" column [A10], where he summarizes and provides more details on the enigmas of the previous year, this time focusing on the microwave rectifiers that are used in wireless power transfer and energy harvesting circuits. Rounding out the issue is our "MTT-S Ombuds Officer" report [A11], followed by a "Young Professionals" column [A12] that summarizes the Best Presentation Award at the MTT-S Young Professionals Workshop on Modeling, Optimization, and Measurement Techniques for Active Devices (MOMA) held in October 2023. In addition, you will also find calls for papers for a number of upcoming conferences and workshops, as well as our "Conference Calendar" [A13].

Finally, we are sad to report on the passing of a giant in the electromagnetics field, John Bandler. Please read about John's career and the impact he had on many of our MTT members as well as the general electromagnetics community in our "In Memoriam" column [A14]. John's perceptive observations and dedication to the community will be sorely missed.

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Appendix: Related Articles

[A1] M. Bozzi, "Let's make the MTT-S a more inclusive community [President's Column]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 7–9, Jan. 2024, doi: 10.1109/MMM.2023.3321222.

[A2] X. Gong, R. Henderson, and R. H. Caverly, "Education committee webinars for the first half of 2024 [Education News]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 72–73, Jan. 2024, doi: 10.1109/MMM.2023.3321571.

[A3] M. Qin, Z. Li, P. Liu, L. Liao, Z. Li, and X. Qiu, "A review of on-chip adjustable RF bandpass filters," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 14–36, Jan. 2024, doi: 10.1109/MMM.2023.3321226.

[A4] Y. Wang, X. Sun, and L. Liu, "Millimeter-wave orbital angular momentum: Generation, detection, and applications," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 37–57, Jan. 2024, doi: 10.1109/MMM.2023.3269619.

[A5] X. Shang et al., "Some recent advancements in measurements at millimeter-wave and terahertz frequencies," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 58–71, Jan. 2024, doi: 10.1109/MMM.2023.3321516.

[A6] F. Schindler, "The IEEE Microwave Theory and Technology Society and IEEE [MicroBusiness]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 10–11, Jan. 2024, doi: 10.1109/MMM.2023.3321224.

[A7] R. Bansal, "In brief [Microwave Surfing]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 12–13, Jan. 2024, doi: 10.1109/MMM.2023.3321225.

[A8] V. Okhmatovski and J. Aronsson, "The 2023 IEEE microwave theory and technology society international conference on numerical electromagnetic and multiphysics modeling and optimization [Conference Report]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 2–4, Jan. 2024, doi: 10.1109/MMM.2023.3321550.

[A9] T. Ohira, "Input impedance [Enigmas, etc.]," *IEEE Microw. Mag.*, vol. 25, no. 1, p. 95, Jan. 2024, doi: 10.1109/MMM.2023.3321553.

[A10] T. Ohira, "Duality theorem Juxtaposes class-E and inverse-class-E diode rectifiers [Educator's Corner]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 90–94, Jan. 2024, doi: 10.1109/MMM.2023.3321552.

[A11] E. C. Niehenke, "MTT-S Ombuds Officer," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 88–89, Jan. 2024, doi: 10.1109/MMM.2023.3321551.

[A12] N. C. Miller and M. Grupen, "Nonlinear RF modeling of GaN HEMTs with fermi kinetics transport and the ASM-HEMT compact model [Young Professionals]," *IEEE Microw. Mag.*, vol. 25, no. 1, pp. 78–80, Jan. 2024, doi: 10.1109/MMM.2023.3321549.

[A13] "Conference calendar," *IEEE Microw. Mag.*, vol. 25, no. 1, p. 96, Jan. 2024, doi: 10.1109/MMM.2023.3329611.

[A14] E. Niehenke, "Remembering John Bandler [In Memoriam]," *IEEE Microw.. Mag.*, vol. 25, no. 1 pp. 86–87, Jan. 2024, doi: 10.1109/MMM.2023.3324844.