

Editorial

From Theories to Techniques and Technologies in the Frequency Range of MHz to THz

IT is my great honor and pleasure to serve the microwave/RF community as the Editor-in-Chief (EiC) for this TRANSACTIONS in 2020–2022, even it is also the tough period worldwide due to the pandemic of COVID-19, I and my editorial team members have done our best to serve the journal, its authors, and its readers.

The last three years have been particularly challenging time since many universities and laboratories had been closed down, most our associate editors and track editors together with our reviewers had been locked down at homes to serve the TRANSACTIONS by struggling the internet connectivity like many authors did.

It had been believed the submissions would reduce because most of university campuses and laboratories had been locked down due to the COVID-19 impact, however, the TRANSACTIONS had the peak submissions in 2021 as in 2015 surprisingly as shown in Fig. 1, instead of continuously decreasing slightly from 2017 to 2020. That implies IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES (TMTT) is more attractive to our potential authors and more authors favor to submit their excellent research outcomes to the TRANSACTIONS. I would like to thank the authors who chose this TRANSACTIONS to submit and publish their research results, and the submissions for the first 9 months is 1405 already. Most likely, the number of submissions in 2022 will reach to the new peak. The journal's impact factor has reached the historic peak of 4.381.

Fig. 2 presents the evolution of days from submission to e-publication throughout the recent years and Table I shows how the times from submission to first decision, submission to final decision, and, finally, submission to early access in IEEE Xplore. All have been kept low after the substantial drop at the beginning of my EiC term. Actually, this graph also shows that even if IEEE TMTT was never willing to be seen as a fast publication journal, but one that offers a deep technical review of its submitted manuscripts, thus providing detailed feedback to its authors, it can do it in less than 46 days for the first decision, while 59.1 days for papers acceptances, on average in my term (2020–2022). It is impossible to achieve such outstanding performance without hard-working and dedications of my editorial team

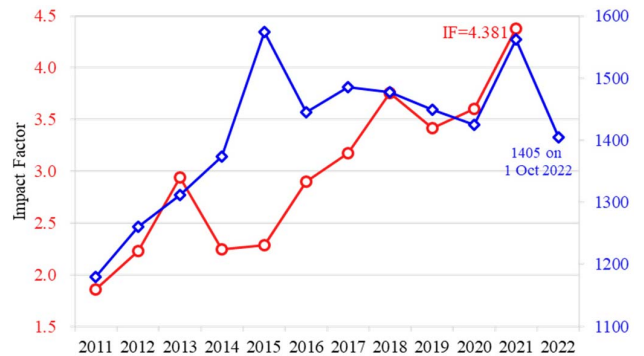


Fig. 1. Evolution of the number of manuscript submissions and the impact factor (IF) throughout the recent years.

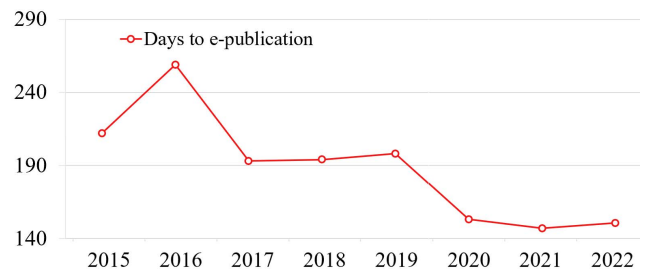


Fig. 2. Evolution of days from submission to e-publication throughout the recent years.

together with the numerous reviewers who spent time and effort reviewing manuscripts for this TRANSACTIONS while struggling to the pandemic. Thank my editorial team and the numerous reviewers for their dedication to the toughest period due to the pandemic, Last but not least, we would like to thank the authors.

Table II lists my editorial team, consisting of six track editors to cover six topics together with 29 associate editors.

Fig. 3 shows the distribution of the submissions among the various regions of the world. It is observed that since 2017, submissions increased from great China (Mainland China, Taiwan, Macau, and Hongkong), in particular, since 2020, more submissions were from great China even there were global pandemic, corresponding to a big drop in Europe. More details have been shown in Table III for top 16 regions with highest submission. Not surprisingly, Mainland China

TABLE I

STATISTICS OF THE TRANSACTIONS THROUGHOUT THE RECENT YEARS

| Journal Statistics | 2018 | 2019 | 2020 | 2021 | 2021-2022 (12 months) |
|---|------|------|------|------|---------------------------|
| Avg. days from submission to first decision | 57 | 54 | 41 | 46.4 | 49.8 |
| Avg. days from submission to final decision | 74 | 70 | 55 | 60.2 | 62.2 |
| Avg. days from submission to on-line electronic publication | 194 | 198 | 153 | 147 | 150.5 (Q1 and Q2 2022) |

TABLE II
THE EDITORIAL TEAM

| 6 Track Editors to cover 6 topic areas | | | | |
|---|--|--|--|--|
| 1. EM Theory and Analysis Techniques (EleMag): | Zhizhang D. Chen (Ca) | | James Hwang (US) | |
| 2. Devices and Modeling (Devices): | Maurizio Bozzi (EU) | | David S. Ricketts (US) | |
| 3. Passive Circuits (Passives): | Natalia K. Nikolova (CA) | | Anding Zhu (EU) | |
| 4. Hybrid and Monolithic RF Integrated Circuits (Actives): | | | | |
| 5. Instrumentation and Measurement Techniques (Inst&Meas): | | | | |
| 6. JwJ on Microwave Systems and Applications (Systems): | | | | |
| 29 Associate Editors | | | | |
| Sheng-Fuh Chang (Asia), Kenle Chen (US), Chao Chang (Asia), Vittorio Camarchia (EU), Ali Darwish (US), Wenrao Fang (Asia), | Marco Farina (EU), Nelson Fonseca (EU), Markus Gardill (EU), Amelie Hagelauer (EU), Vadim Issakov (EU), Dan Jiao (US) | Faramarz Kharabi (US), Miguel A. G. Laso (EU), Changzhi Li (US), Tim LaRocca (US), Rui Ma (US), Vahid Nayyeri (Asia), | Kenichi Okada (Asia), Matthias Rudolph (EU), Almudena Suarez (EU), Kamal K. Samanta (EU), Miguel Angel Sanchez-Soriano (EU), | Valentyn Solomko (EU), Cristiano Tomassoni (EU), Eng Leong Tan (Asia), Werner Thiel (US), Chaofu Wang (Asia), Qi-Jun Zhang (Ca) |

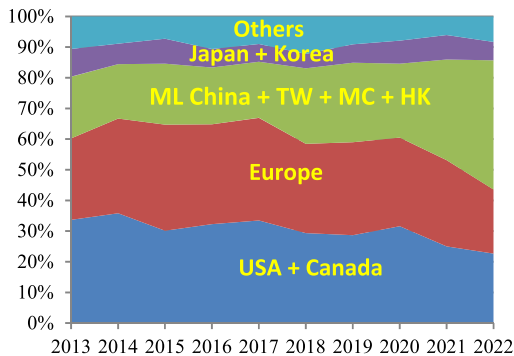


Fig. 3. Geographical distribution of the manuscript submissions' provenance by region, throughout the recent years.

ranks the first, followed by the USA, but the acceptance ratio of Mainland China is far below the average acceptance ratio of the TRANSACTIONS. It is so surprised that only one paper has been accepted out of 22 submissions in total from Italy, followed by Russia with only one accepted out of 17 submissions in total.

Fig. 4 illustrates the distribution of published papers among those six topics throughout my term (up to November Issue of 2022). Hybrid systems is the biggest which reflects the MTT society is moving forward to technologies, as the newly revised society name: Microwave Theory and Technology.

The TRANSACTIONS has been publishing special issues every year: The Special Issue on Broadband and Millimeter-Wave Power Amplifiers has been published in July 2020 with the Guest Editors Profs. Vittorio Camarchia and Anh-Vu Pham, focusing on the most recent research and development of broadband (including sub-6 GHz) and millimeter-wave power amplifiers for emerging applications; The Special Issue on Microwave and Millimeter-Wave Communication and Sensor Systems has

TABLE III

16 COUNTRIES/REGIONS WITH HIGHEST SUBMISSIONS FOR THE FIRST 9 MONTHS IN 2022

| Country/Region | Total | Accept | Reject | Accept Ratio |
|--------------------------------|-------|--------|--------|--------------|
| Mainland of China | 490 | 132 | 358 | 27% |
| United States | 149 | 53 | 96 | 36% |
| Canada | 67 | 26 | 41 | 39% |
| India | 65 | 4 | 61 | 6% |
| Korea (the Republic of) | 56 | 14 | 42 | 25% |
| Iran (the Islamic Republic of) | 35 | 4 | 31 | 11% |
| Germany | 31 | 14 | 17 | 45% |
| United Kingdom of GB and NI | 28 | 10 | 18 | 36% |
| Taiwan | 27 | 10 | 17 | 37% |
| France | 25 | 7 | 18 | 28% |
| Spain | 25 | 6 | 19 | 24% |
| Italy | 22 | 1 | 21 | 5% |
| Japan | 22 | 7 | 15 | 32% |
| Singapore | 18 | 9 | 9 | 50% |
| Russian Federation | 17 | 1 | 16 | 6% |
| Turkey | 15 | 3 | 12 | 20% |

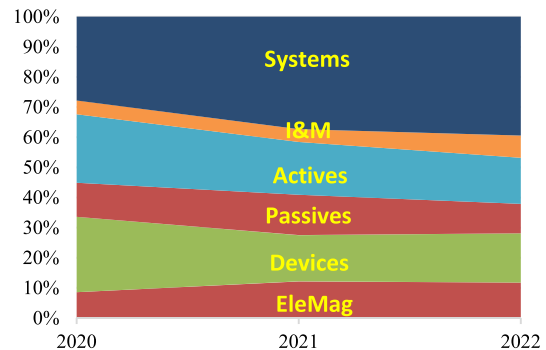


Fig. 4. Topic distribution of the manuscript publications by six areas, throughout the recent years.

been published in November 2021 with the Guest Editors Profs. Gabriel M. Rebeiz and James F. Buckwalter, to reflect the increased impact of microwave and millimeter-wave systems is noticeable throughout society, especially in 5G communications, automotive radars, safety/security applications, and in bio-medical sensors; Artificial intelligence (AI) and machine learning have experienced phenomenal success in the past decade in signal processing, image and speech recognition, robotics, autonomous systems, and more. This success is also coupled with the expanding applications of AI and machine learning in broad areas of science and engineering. The microwave community is among the earliest in exploring machine learning and artificial neural networks (ANN) for wireless and wireline electronic device, circuit and system designs. In recent years, there has been a significant increase in the interests and activities in applying machine learning and AI in microwaves not only at device/circuit level modeling and design but also at system and higher level applications. To represent the current state-of-the-art

of AI/machine learning for microwaves, and demonstrate an inspiring trend of research and development in this expanding area, in November 2022, we published the Special Issue on AI and Machine Learning Based Technologies for Microwaves with 209 submissions in total, handled by the Guest Editor Prof Qijun Zhang.

The first artificial inclusion to realize an effective negative permeability medium was published in this TRANSACTIONS by Sir Pendry, etc. [1], inspiring new design methodologies for EM devices and systems—so-called metamaterials and metasurfaces. In the increasingly complex EM world, digital coding and programmable metamaterials and metasurfaces have been enabling commercial opportunities with broad impact on wireless communications, in particular, reconfigurable intelligent surfaces (RIS), based on metamaterials and metasurfaces, have potential advantages in advanced wireless communication (6G). In order to create a forum for researchers and engineers, a Focus Topic on metamaterials and metasurfaces has been created in issues of March and April 2021 as well as January and December 2022 with 19 papers in total [2], [3], [4], [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], those papers have been grouped from regular papers on the topic. Then, a Special Issue on Metamaterials, Metadevices, and Applications has been approved, the submission deadline to this special issue is December 20, 2022, expected to be published in July 2023.

In order to promote conferences sponsored by IEEE Microwaves Theory and Technology Society's (IEEE MTT-S) several mini-special issues have been published every year.

I would like to thank my Editorial Assistant, Wen You, and the IEEE Journals Coordinator, Pilar Etud, as well as ScholarOne Coordinators, Sonal Parikh and Amit Kullu, for their tremendous help keeping everything on track. Finally, I would like to welcome the incoming new EiC, Prof. Almudena Suarez-Rodriguez, and her editorial team, who will be presented in the editorial of the January issue. This TRANSACTIONS will continue to evolve under the Prof. Suarez-Rodriguez's leadership, maintain, and further increase its quality, attractiveness, and reputation. I hope you will continue to support them and contribute to this TRANSACTIONS.

Sincerely,

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