

An Update from the Journal of Microwave Power and Electromagnetic Energy (JMPEE)

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The purpose of this message is to recognize the contribution of the authors that generate, and inform about, the advances in the field of microwave and RF applications, by sharing their expertise and reputation through their submissions to the Journal of Microwave Power and Electromagnetic Energy (JMPEE). While this contribution is acknowledged, it is also recognized that the quality of the publication is owed to authors and to the referees as well in the peer review system. Another purpose is to present some comments about different topics that are submitted to the Journal and that are often cause of editorial controversy. Of course, the opportunity to make an invitation to submit manuscripts is always taken in this kind of messages, and this is not the exception.

The microwave and RF technology status at the time of creation of the International Microwave Power Institute (IMPI) in the 1960's inspired its interest toward non-communication applications, while the terms "power" and "energy" in the names of IMPI and JMPEE somehow have driven the scope of this publication, aimed to be one of the primary sources of the most reliable information in the arts and sciences of microwave and RF technology, especially about industrial, scientific, medical and instrumentation applications.

Communication systems are probably the best known applications of microwaves and RF, although there are other fascinating ones, such as ceramics processing, characterization of biological tissues, combustion synthesis, cooking, drying, food industry, glass and silicon processing, green chemistry, health and therapeutics, material science and nanotechnology, tomography and therapeutic applications, organic and inorganic chemical processing, polymers and metals

processing, microwave drilling, soil remediation, and waste processing.

IMPI is anticipated to present non-communication topics that look new today, such as microwaves for treating cancer, microwave spark plug firing, and microwave plasma light systems. However, everything is multidisciplinary, and many components employed in these applications are also part of communication systems, therefore the submissions on this subject must be considered carefully in advance to evaluate their objective in the scope of the Journal.

Nowadays, there is no doubt about the importance of being listed by Thomson Reuters in the Journal Citation Reports (JCR) with a high Impact Factor. Indeed, there are authors that consider this condition more relevant than the different topics in the scope of the Journal, so decide about their submissions accordingly. A journal listed in the JCR could potentially increase the amount of submissions received, increasing the chance to have manuscripts complying high quality standards. However, at the same time, this increase also includes manuscripts aimed to be published in a JCR listed journal, without concern of the authors regarding quality or scope, increasing the load of reviewers and editorial board that despite this lack of concern, must justify their observations.

JMPEE is in the JCR list, but sometime ago it was temporarily out. That time was an opportunity to have a better appreciation of the authors, with good scientific record, that fed JMPEE with very good quality submissions. These people care about microwave and RF studies, and JMPEE owes to them because of their contribution to have this journal back to the JCR list and

preserving the spirit that have been observed by IMPI for more than fifty years.

The reviewers do an excellent job in this sense, so that their criticisms are well founded and are great help for the authors to improve their submissions and in the decision-making process. The most interesting papers are those that address controversial issues in terms of science and technology, well supported theoretical and experimentally, so that they lead to knowledge generation. However, there are some subjects that are popular, but often are not clearly supported, so that their acceptance is sometimes difficult.

Health issues are probably the most sensitive. There are claims of microwaves and RF causing cancer, either by direct exposition to them, or indirectly by eating, touching, or smelling exposed items. However, many of these claims are based on experiments conducted at conditions out of the normal ones, changing parameters in a way intended to be unsuitable and risky, building wrong, and in the best cases, exaggerated conclusions. Basic knowledge about chemical bonding and wave nature is enough to dismiss such affirmation. If any of these claims were well sustained, IMPI certainly would be one of the first interested institutions in spreading this information among the audience in publications and social networks.

Other issue deals with power measurement of experiments conducted in kitchen ovens. There are many reports about the variation in the power supplying of the magnetrons of these devices, therefore it is very important that the method followed for estimating the power parameter is described clearly.

Modeling and simulation validation is also a controversial subject. A simulator cannot be accepted until a comparison is made with experimental results. However, there is a strong tendency, in some areas, to validate a simulator by comparison with other simulators, without considering the limitations of each one, regardless their reputation. Such simulator is not truly tested, and conclusions could not be valid. Models requires some sort of evidence that validate them

for drawing useful conclusions. Taylor & Francis is working on platforms where authors can share their codes and algorithms so that they can be tested by the readers.

The last topic considered here is power harvesting; there are many cases where the presented results are based on simulations, often with claims of prototypes that validate such results under testing conditions that do not match. Therefore, despite the optimistic conclusions, the difficulties to get to practical applications are evident. It seems that in some cases wireless power transmission is being presented as power harvesting.

These topics addressed to the journal are few examples of the many researching works in progress in the field of microwave and RF applications. Conferences, such as IMPI and AMPERE, are excellent opportunities to learn about these technologies, and everybody interested in extending this opportunity to more people, by publishing, is invited to submit journal papers to JMPEE.

About the Author



Prof. Juan Antonio Aguilar Garib of the Universidad Autónoma de Nuevo León, Facultad de Ingeniería Mecánica y Eléctrica, México, is the Editor in Chief of JMPEE since 2010. Juan received his PhD degree in Material Engineering from the Universidad Autónoma de Nuevo

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