IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES

Special Issue on

Biomedical Applications of RF/Microwave Technologies

Submission deadline: October 15, 2012

In the past few years, a significant growth of research involving the utilization of RF/microwave technologies in healthcare applications has been taking place. The increase in RF/microwave related activities targeting medical or biological problems is noticeable within the MTT community and beyond. These activities are broad in their scopes and involve multiple disciplines. They range from therapeutic, diagnostic, and imaging applications of microwave technologies, as well as their biological effects, where the interaction of microwaves with tissues and living systems should be understood and manipulated, to those involving sensing and communication over or through body tissues, where physiological or biochemical information are transmitted wirelessly. Examples of ongoing researches include high-field MRI for obtaining better image resolution, hyperthermia treatment of cancers, microwave imaging of tissues, *in-vitro* sensors and devices capable of interacting with cells and biological agents, implantable sensors and devices transmitting physiological data from brain, heart, vessels, bones, GI tract, bladder, and other organs to outside equipment, radar techniques for remotely monitoring patients' breathing and heart rates, and integrated circuit transceivers and sensors meeting particular specifications dictated by factors such as selected frequency bands, clinical requirements, and biocompatibility issues. IEEE Transactions on Microwave Theory and Techniques is soliciting articles for a special issue on Biomedical Applications of RF/Microwave Technologies, covering all related aspects, with a planned publication date of Spring, 2013. Some relevant topics of interest to MTT include, but are not limited to, the following areas:

- Electromagnetic fields' interaction with DNA, proteins, cells, tissues, and bodies
- RF and microwave characterization of biological materials and living systems
- Low profile embedded radiators and transducers facing tissue absorption and scattering effects
- Microwave imaging and reconstruction methods
- RF/microwave methods and hardware for high-field MRI
- Wireless communication and radar techniques for sensing, monitoring, or assisting treatments
- Antennas and applicators for biomedical applications
- Emerging RFIC technologies, devices, sensors, and chips for biomedical applications
- RF/microwave hardware in healthcare delivery systems and telemedicine
- System integration and miniaturization of wireless biomedical implants
- Techniques for efficient data transmission and RF power transfer through body tissues
- Therapeutic and diagnostic applications of RF/microwave technologies
- Issues governing standards, regulations, compliance, and safety

Authors should see http://www.mtt.org/transactions/34-author-information-transactions.html for submission instructions.

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