

Call for Papers The IEEE Transactions on Biomedical Engineering (T-BME)

Special Issue on "THERAPEUTIC ULTRASOUND"

Guest Editor: Emad S. Ebbini, Department of Electrical and Computer Engineering, University of Minnesota Twin Cities (emad@umn.edu)

Background. Significant progress in the field of therapeutic ultrasound has taken place during the last two decades. Advancements in our understanding of the bioeffects of intense ultrasound, physics and engineering of therapeutic devices, and its clinical applications have been made. These successes build on a rich history of pioneering research that spanned the second half of the twentieth century. It is fair to state, however, that much of the recent progress is propelled by technological advances that led to significant improvements in the delivery of intense ultrasound and monitoring the tissue response to a myriad of application modes, alone or in conjunction with other therapeutic agents. Image guidance has become an integral part of the therapeutic application demonstrating the feasibility of treatment control and damage assessment in real time.

The advances in the field of therapeutic ultrasound during the last decade have been accentuated by a number of developments that can be summarized as follows:

- A successful series of international symposia on therapeutic ultrasound has been running annually since the year 2001.
- Consistently strong showing for therapeutic ultrasound groups at other international meetings, e.g. the IEEE Ultrasonics Symposium, the IEEE EMBC, the Acoustical Society of America, International Congress on Ultrasonics, etc.
- The clinical use of high intensity focused ultrasound (HIFU) in the treatment of prostate cancer and uterine fibroids under image guidance (both ultrasound and MRI). Commercial systems for the treatment of other tumors and tissue abnormalities are also becoming available.

Another significant development that has led to increased interest in therapeutic ultrasound is the area of drug and gene activation and delivery. Therapeutic ultrasound offers some unique advantages in this application area due to its ability to produce localized thermal or mechanical effects in deep-seated tissue targets with or without specialized carriers, e.g. ultrasound contrast agents, liposomes, etc.

Scope. This special issue seeks original contributions from the international scientific community in the general area of therapeutic ultrasound. Topics include, but are not limited to:

- Novel therapeutic devices and transducer technologies.
- Tissue response and bioeffects.
- Drug and gene delivery.
- Treatment guidance, monitoring, and control.
- Quality assurance.
- *In vivo* studies.
- Clinical applications.

Prospective authors may submit full-length regular papers to be published in the *Special Issue of the IEEE T-BME*. Authors can also submit shorter papers to be published in the *IEEE T-BME Letters*. The letters are limited to 4-page papers on novel research at the leading-edge of rapidly emerging technologies with potential high impact in biomedical applications and health care. Regular papers and Letters submissions will be published cooperatively in the same month (September 2009). The

combination will give the community an excellent opportunity to provide a fuller view of the depth and breadth of the field of therapeutic ultrasound.

Instructions for Submission:

Online submission through ManuscriptCentral (<http://mc.manuscriptcentral.com/embs-ieee>). In submitting indicate that the paper is intended for the *Special Issue on Therapeutic Ultrasound*. You also need to specify whether your submission is a Regular paper or a Letter. The schedule is as follows:

Regular Papers:

Manuscript Due:	February 1, 2009
First Reviews Due:	April 20, 2009
Revised Manuscript Due:	June 1, 2009
Final Decision:	July 15, 2009
Publication Date:	September/October 2009

Letters:

Manuscript Due:	May 1, 2009
Reviews Due:	June 15, 2009
Revised Manuscript Due:	July 1, 2009
Final Decision:	July 15, 2009
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