

## Special Issue on Novel Technologies in Ultrasound

# CALL FOR PAPERS

Ultrasound has been used in medical imaging since 1970s; however with the improvement in the processing power of computers, novel techniques have now been developed in ultrasound, which has revolutionized this field. These include novel techniques like contrast-enhanced ultrasound (CEUS), elastography, volumetric imaging, automatic tissue characterization, automatic image optimization, fusion imaging, High-Intensity Focused Ultrasound (HIFU), and navigation for interventional procedures. CEUS has gained increased improvement and acceptance in the last decade or so. It is now used extensively in clinical practice and is undoubtedly the major breakthrough in the field of diagnostic ultrasound in the recent years. The concept of CEUS goes back to the 1960s and regained increased attention in the 2000s in both clinical practice and basic research. CEUS has been successfully employed with a wide range of imaging techniques and has been used for therapeutic applications as well, mainly in an investigational setting. However the behavior of microbubbles has not been fully understood. CEUS has greatly reshaped the role of ultrasound in clinic practice. It has been demonstrated that CEUS is helpful in characterization and detection of focal lesions in various organs such as liver, gallbladder, pancreas, and kidney.

Elastography has reemerged and is accepted clinically in evaluation of liver fibrosis and multiple other applications like thyroid nodules, breast masses, and prostate imaging. US is now able to acquire volumes of data which can then be reformatted into different planes. Other techniques like automatic image optimization and automatic tissue characterization keep on improving and will be available for clinical use soon. Fusion of ultrasound data with cross-sectional imaging like computed tomography and magnetic resonance imaging has added a new layer to ultrasound imaging. Lesions previously not seen on ultrasound can now be seen with fusion imaging and interventional procedures can now be performed with this new technique. Navigation techniques can be used for ultrasound guided ablations and biopsies. HIFU has been used in the noninvasive treatment of various tumors and also uterine fibroids.

Potential topics include but are not limited to the following:

- ▶ Contrast enhanced ultrasound (CEUS)
- ▶ US elastography of various organs including but not limited to liver, thyroid, kidney, breast, and prostate
- ▶ Automatic tissue characterization and automatic image optimization
- ▶ Volumetric imaging
- ▶ Fusion imaging and navigation techniques in ultrasound
- ▶ HIFU treatment for various organs

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Papers are published upon acceptance, regardless of the Special Issue publication date.

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