



## Micro/Nano-Bubbles as a New Ultrasound Imaging and Drug Delivery Tool

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### Message from the Guest Editor

Recently various types of microbubbles and nanobubbles for ultrasound contrast imaging have been under development. The advantage of small bubbles is their capability to easily perfuse into the capillaries, resulting in images of biological tissues. These bubbles can become a superior ultrasound contrast agent. Other than the size, shelled and non-shelled bubbles have shown different acoustic characters, ultrasound images, and biological reactions. Utilizing bubble-shell material may permit molecular targeting and imaging. Another aspect of bubbles is their ability to carry drugs to a specific location within the body. The collapse of bubbles due to high intensity-focused ultrasound in a localized area can induce the sonoporation phenomenon, resulting in the opening of a hard-to-penetrate blood–brain barrier or increasing cell membrane permeability. Although the mechanism of sonoporation and imaging of nanobubbles are not known, combining ultrasound and bubbles may prove to be an ideal, non-invasive therapy/diagnosis modality. This Special Issue invites manuscripts on subjects relating to ultrasound imaging and drug-delivery systems by means of micro and nano-bubbles.





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