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Ultrafast Ultrasound Imaging

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Among medical imaging modalities, such as computed tomography (CT) and magnetic resonance imaging (MRI), ultrasound imaging stands out due to its temporal resolution. Owing to the nature of medical ultrasound imaging, it has been used for not only observation of the morphology of living organs but also functional imaging, such as blood flow imaging and evaluation of the cardiac function. Ultrafast ultrasound imaging, which has recently become widely available, significantly increases the opportunities for medical functional imaging. Ultrafast ultrasound imaging typically enables imaging frame-rates of up to ten thousand frames per second (fps). Due to the extremely high temporal resolution, this enables visualization of rapid dynamic responses of biological tissues, which cannot be observed and analyzed by conventional ultrasound imaging. This Special Issue includes various studies of improvements to the performance of ultrafast ultrasound.

