Special Issue

Photoacoustic Sensing and Imaging: Hardware, Algorithm and AI

Message from the Guest Editors

Photoacoustic imaging is an emerging hybrid imaging modality that integrates optical contrast with ultrasound detection, combining the high absorption contrast of optical imaging with the deep penetration and fine spatial resolution of an ultrasound. By irradiating tissue with short laser pulses and capturing the resulting acoustic waves, PAI noninvasively images the spatial distribution of endogenous chromophores and exogenous contrast agents. These capabilities enable high-resolution, real-time functional and molecular imaging in a range of biomedical contexts. Recent research efforts have aimed to address these challenges through compact, high-speed sourcesand novel ultrasound detectors, together with sophisticated beamforming, spectral-unmixing, and AI-based reconstruction techniques. This Special Issue of Sensors invites the submission of interdisciplinary contributions that span hardware, signal processing, and AI to advance biomedical photoacoustic sensing and imaging. For detailed information, please visit here.

Guest Editors

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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