# Special Issue

# Intelligent Medical Optical Imaging: From Multimodal Sensing to Precision Reconstruction

## Message from the Guest Editors

The Special Issue "Intelligent Medical Optical Imaging: From Multimodal Sensing to Precision Reconstruction" explores cutting-edge advancements in optical imaging technologies for medical diagnostics and therapy. It emphasizes the integration of multimodal sensing (e.g., photoacoustic, fluorescence, and optical coherence tomography) with intelligent algorithms (deep learning, GANs, transformers) to achieve high-resolution, real-time, and accurate imaging. Key challenges addressed include enhancing signal quality in noisy environments, improving reconstruction speed, and fusing complementary data from different modalities (e.g., optical-MRI hybrid systems). Innovations such as AI-driven image reconstruction and dynamic feature fusion modules enable precise visualization of anatomical structures and functional biomarkers. Applications span early cancer detection, surgical navigation, and neurological disease monitoring. The issue highlights how these technologies bridge the gap between laboratory research and clinical translation, offering transformative tools for personalized medicine and minimally invasive interventions.

## Guest Editors

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## Deadline for manuscript submissions

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