

Special Issue on
**Advanced Signal Processing in Medical Image
Reconstruction**

CALL FOR PAPERS

Medical imaging is a technique to create visual representations of the interior of the body, with the aim of making accurate diagnosis and optimized treatments. Reconstruction algorithms need to be applied to produce images, such as computer tomography (CT), ultrasound (US), positron emission tomography (PET), single-photon emission computed tomography (SPECT), magnetic resonance imaging (MRI)/functional MRI (fMRI), and fluorescence microscopy. However, due to the limits of intrinsic low signal-to-noise ratio (SNR), photon scarcity, measurement duration, or radiation concern, medical image reconstruction is often an ill-posed inverse problem, for example, the low dose (X-ray) computed tomography (LDCT), PET/SPET, and diffusion-weighted magnetic resonance imaging. Solving inverse problem via traditional algorithm (e.g., Filter-Back-Projection (FBP) method in CT) often leads to poor image quality.

This special issue aims to provide a diverse and complementary set of articles that demonstrate new developments and applications of advanced signal processing to improve medical image reconstruction. We also highly recommend that the authors submit multimedia materials with their articles as they will significantly increase the visibility, downloads, and citations of articles.

Potential topics include but are not limited to the following:

- ▶ New reconstruction algorithm in medical imaging with low signal-to-noise ratio (e.g., PET, low dose CT, and DTI MRI)
- ▶ Sparse representation based methods in medical imaging
- ▶ Low rank methods in medical imaging
- ▶ Regularization methods in inverse imaging
- ▶ Convex optimization algorithms in medical image reconstruction
- ▶ Patch based reconstruction algorithm
- ▶ Application of multiscale transforms in medical imaging
- ▶ Deep learning based medical imaging and image reconstruction
- ▶ Assessment methods for medical image quality
- ▶ Noise distribution analysis of photon-limited data in medical imaging

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/ijbi/aspmi/>.

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

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