International Journal of Biomedical Imaging

Special Issue on Miniature High-Resolution *In Vivo* Imaging Systems

Call for Papers

Biomedical research needs new advances in imaging methods. Existing modalities of *in vivo* imaging, such as magnetic resonance imaging (MRI), PET, SPECT, or ultrasound, lack the spatiotemporal resolution required to image cell-cell interactions that are fundamental to the understanding of basic biological mechanisms. By contrast, existing high-resolution techniques for imaging subcellular features are technologies that are best suited for *in vivo* experiments in tissue sections. Yet, the ability to make direct connections between human pathological behaviors and the underlying cells and molecules responsible for such behaviors requires *in vivo* imaging techniques that extend across a wide range of scales and resolutions, from cellular to subcellular.

Miniature high-resolution imaging instruments provide unprecedented advantages compared to existing (macroscopic) modalities for disease diagnosis over epithelial or subepithelial surfaces with cellular to subcellular resolutions. Furthermore, molecular mechanisms of diseases can be unravelled in combination with use of fluorescence contrast agents. With advancements in miniature high-resolution imaging, the techniques have allowed new methods for disease diagnosis to be possible enabling effective treatments to improve patient outcomes. Applications of miniature high-resolution microscopy include identifying premalignant lesions, staging cancer progression, localizing cancer margins, guiding tissue biopsy, and monitoring drug therapy.

This special issue welcomes original research articles as well as review articles in research areas that address the development of miniature high-resolution *in vivo* imaging systems such as endoscopes or handheld imaging systems for disease screening, evaluation, intervention, and treatment in either preclinical models or human subjects. Potential topics include, but are not limited to:

- Development of innovative handheld or endoscopic imaging in the following fields:
  - confocal
  - multiphoton
  - OCT/OCM
  - fluorescence or multispectral
  - video capsule
  - endocytoscopy
  - high magnification
  - light scattering
  - Raman/infrared spectroscopy
  - photoacoustic
- Image enhancement technique for handheld or endoscopic images
- Computer-assisted processing and analysis of handheld or endoscopic images
- Contrast agents for high-resolution imaging

Before submission authors should carefully read over the journal's Author Guidelines, which are located at http://www.hindawi.com/journals/ijbi/guidelines/. Prospective authors should submit an electronic copy of their complete manuscript through the journal Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ijbi/mhris/ according to the following timetable:

Manuscript Due	Friday, 8 February 2013
First Round of Reviews	Friday, 3 May 2013
Publication Date	Friday, 28 June 2013

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