

Tentative Outline

Special Issue

Imaging in the analysis of materials and biological tissues

Guest Editor: Mikhail Berezin

Aims & Scope:

Traditional analytical techniques based on a single-point measurement provide satisfactory results regarding the composition of the sample when applied to homogenous systems. However, most of the human-made and natural materials, including biological tissues and living organisms are heterogeneous. Comprehensive analysis of such complex materials requires imaging, where a spatial coordinate is added to an analytical system to visualize variance within the subject. Collection and analysis of the data are often challenging, but provide a significantly higher level of information leading to new information regarding the spatial composition of the material as well as its dynamic properties.

The objective of this special issue is to provide a forum to present and collate significant and exciting studies involving chemical aspects of imaging, where imaging serves as a method to understand the properties of materials in more detail. Manuscripts appropriate for this program include, but not limited to studies performed in different imaging modalities for applications in material science, biology and medicine, design and characterization of contrast agents and imaging probes, improvement of the existing and development of novel imaging instrumentation, image analysis and data processing algorithms.

Subtopics:

The subtopics to be covered within this issue are listed below:

- Applications of optical, electrochemical, mass-spectrometry, ESCA, MRI, nuclear, Raman, photoacoustics, EPR, X-ray, hyperspectral, thermal and other imaging methods
- Significant improvement of the existing imaging modalities
- Development of a novel imaging techniques based on new principles
- Design and/or characterization of bioluminescent enzymes, fluorescent proteins, optical, nuclear and magnetic contrast agents and theranostics from small molecules to nanoparticles
- Characterization of novel materials by imaging techniques
- Imaging of cells and biological tissues
- Remote sensing
- Clinical and preclinical imaging and image guided treatments
- Data analysis of imaging data
- Novel image-analysis algorithms

The issue will be accepting novel research studies as well a few invited reviews

Schedule:

- All manuscript submission deadline: August 1, 2019
- Peer Review Due: September 1, 2019
- Revision Due: November 1, 2019
- Notification of Acceptance by the Guest Editor: December 1, 2019
- Final Manuscript Due: February 1, 2020

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