

Special Issue on
Multimodal Imaging and Theranostics

CALL FOR PAPERS

The life expectancy, length of treatment, and quality life of patients suffering from aging-related diseases such as cancer and Alzheimer's are greatly dependent on the point of diagnosis. Early and accurate diagnosis is fundamental in order to start the treatment immediately and improve the prognosis of diseases. Due to current limitations of the most common diagnostic techniques used in the clinic, multimodality imaging emerges as a suitable approach that furnishes the integration information from various imaging modalities. In the field of nanotechnology, great efforts have been devoted to develop biocompatible imaging probes able to perform in different diagnostic technologies and offer multimodal imaging capability. For example, noninvasive diagnostic techniques such as magnetic resonance imaging (MRI) and computed tomography (CT) provide high anatomical resolution, whereas positron emission tomography (PET) and single-photon emission CT allow for a more morphological and functional analysis. The combination of various imaging modalities promises an optimized visualization of structural and functional information at cellular and molecular levels, thus advancing towards an earlier and accurate diagnosis and a better planning/guiding of treatment. In a step forward towards the personalized medicine, the engineering of theranostics able to integrate imaging and therapy functionalities in one single nanoplatform shows great potential for accurate diagnosis, monitoring therapy response, guiding drug discovery/development, and so on.

The present special issue aims to provide high-quality research contributions from a variety of topics related to the progress on multimodal imaging and theranostics, covering from the synthesis and characterization of the nanoprobe to the final *in vitro* and/or *in vivo* validation. Nanotechnology is a powerful tool with the expectation of changing the entire healthcare scene in the future. The development of biocompatible nanotheranostics offers a combination of diagnostic and therapeutic moieties which is expected to primarily improve the prognosis of diseases, in an attempt towards a personalized medicine in which the efficacy of treatment and the patient's response to it are rapidly monitored and evaluated.

Potential topics include but are not limited to the following:

- ▶ Preparation and characterization of novel diagnostic/therapeutic probes
- ▶ MRI contrast agents (T_1 , T_2 , or dual T_1/T_2)
- ▶ Multimodal imaging probes (MRI-PET, MRI-optical, MRI-CT, MRI-PA, etc.)
- ▶ Targeted-imaging probes (i.e., cancer, Alzheimer, and Parkinson)
- ▶ Development of smart hybrid nanocarriers for theranostics
- ▶ Exogenous stimuli-responsive imaging probes or nanotheranostics
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- ▶ Image-guided drug delivery systems
- ▶ Phototheranostics

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

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Submission Deadline

Friday, 22 December 2017

Publication Date

May 2018