Special Issue

Magnetic Nanoparticles Aided Biomedical Imaging Sensing and Treatment

Message from the Guest Editors

The aim of this Special Issue is toward gathering the recent evolution on the technologies exploiting the already available magnetic nanoparticles in advanced biomedical imaging, sensing, and treatment techniques from an engineer and physicist point of view with the ultimate option of their collaboration with medical doctors and scientists. Magnetic nanoparticles, nanorods or nanospecies may be exploited to enhance the resolution of imaging techniques as magnetic resonance imaging (MRI) or to improve the characteristics of magnetic sensors. From a treatment point of view, these can improve the efficiency of phased antenna array based magnetic hyperthermia as well as minimally invasive microwave or radiofrequency ablation. Techniques combining hyperthermia and chemotherapy may greatly benefit when aided by magnetic nanoparticles. The features offered by these magnetic inclusions may be enhanced by concurrent low frequency (even DC) and radio- or microwave frequency excitations. This Special Issue will welcome review articles, comprehensive group research activity reviews as well as high-quality research papers highlighting the recent evolutions of the subject.

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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