



EFSUN Summer 2020 Webinar

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Nano-Theranostics: The Novel Application of Nanotechnology in Simultaneous Diagnosis and Treatment of Disease

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Abstract: The emergence of nanoscience and nanotechnology has created many hopes for the treatment of various diseases through the introduction of novel strategies. Since early diagnosis and monitoring of diseases provide relatively harmless benefits, integrating the therapeutic properties of nano-systems with diagnosis features could lead to produce multifunctional nanocarriers recognized as nano-theranostics. These are a class of nano-systems with the ability of simultaneous diagnosis and therapy, in which the diagnostic material emerges as the therapeutic agent itself or in combination with a therapeutic species. So far, several types of nanomaterials have been introduced with the ability to enhance the quality of imaging techniques like magnetic nanoparticles in magnetic resonance imaging (MRI), gold nanoparticles in computed tomography (CT), and quantum dots in fluorescence diagnosis. In this talk, a synopsis of 10 years of activity in the “Nano-theranostics” field at my research group will be reported and discussed.