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Multifunctional nanoparticles for cancer theranostic

João Paulo Borges

Universidade Nova de Lisboa, Portugal

The main subject of this lecture is the synthesis and characterization of multifunctional nanoparticles for cancer theranostic. Theranostic nanomedicine for cancer is currently the most promising approach to kill cancer. In this context we synthesized a multifunctional nano-platform composed of an iron oxide core which gives the dual function: Treatment through hyperthermia and treatment monitoring through magnetic resonance image. Further, the core is coated with a biocompatible and biodegradable polymer, giving not only protection to the core, but also to serve as a platform for drug delivery or targeting. The attendees of this lecture will be familiarized with influence that surfactants and the polymeric coating have on the physicochemical and magnetic properties, stability and heating ability of iron oxide colloids. In addition, the theranostic properties of these multifunctional nanoparticles will be explained and demonstrated.

Biography

João Paulo Borges has a PhD in Macromolecular Materials. His research activity is devoted to the development of new materials for Tissue Engineering and magnetic nanoparticles for cancer theranostics. From 2008 to 2014 he was Vice-director of the Materials Research Centre/Institute of Nanostructures, Nanomodeling and Nanofabrication - CENIMAT/I3N. He is coordinator of the MSc in Materials Engineering and member of the executive and scientific boards of the Materials Science Department of Faculty of Science and Technology, Lisbon. He is Editor of the journals "*Journal of Composites and Biodegradable Polymers*", "*International Journal of Chemoinformatics and Chemical Engineering*" and *Annals of Materials Science & Engineering*.

jpb@fct.unl.pt