Departamento de Física de la Materia Condensada

Universidad Zaragoza

SEMINARIOS 2023

Ana Espinosa

Instituto de Ciencia de Materiales de Madrid

Multifunctional therapies based on magnetic and photoactivated nanoparticles

Nanoparticles are used as heating sources in magnetic and photo-induced hyperthermia therapies for effective treatment of oncological diseases in biomedicine. Interestingly, therapeutic effects have been observed even when there is no visible increase in macroscopic temperature due to localized heating of the nanoparticles. Assessing the initiation of thermal doses and quantifying potential side effects resulting from high local temperatures, such as damage to healthy cells in tissue, is crucial when evaluating the local heating effects produced at the surface of nanoparticles. In this work, we examine the efficacy of global and local heating effects under magneto- and photo-thermal effects, in combination with other therapeutic methods, in various biological environments.

A. Espinosa received her PhD in 2010 from Universidad Autónoma de Madrid with a work on heterostructures and thin films based on wide band gap oxides for information technologies. She then worked as postdoctoral fellow at ICMM, leading the magnetic nanoparticle research for biomedical applications and spintronic devices. In 2013, she moved to Université Paris VII (France) being awarded a Marie Curie Intra European Fellowship to conduct research on combined thermal nanotherapies for cancer treatment. In 2018, she moved to IMDEA Nanoscience opening a new research line on multimodal hyperthermia-based methods through the use of magnetic, photo- and X-ray-activated nanomaterials. In 2022, she joined the ICMM as Ramón y Cajal fellow to develop novel strategies based on thermo- and X-ray-activated nanoagents and their translation into the biological environment.

Con la colaboración de:

Facultad de Ciencias Universidad Zaragoza

INMA

CSIC Consejo Superior de Investigaciones Científicas

Universidad Zaragoza

31 Marzo (viernes)

HORA: 12:30

SALA DE GRADOS FACULTAD DE CIENCIAS