INMA
INSTITUTO DE NANOCIENCIA Y MATERIALES DE ARAGÓN
CSIC Universidad Zaragoza

EXCELENCIA SEVERO OCHOA
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# PhD position offer *(pending call publication)*

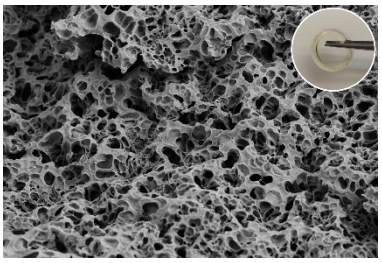
***"Formación de personal investigador predoctoral" project* PID2024-157398NB-I00**

## Smart Polymeric Systems via Click Chemistry and/or Controlled Polymerization toward Biomedical Applications (SMARTPOL)

The objective of the doctoral thesis is to develop functional polymeric systems for biomedical applications. Using click chemistry and/or controlled polymerisations, the aim is to precisely design the macromolecular architecture and its functionality in order to provide the systems with a programmed response to chemical or physical stimuli and properties of biomedical interest.

The project addresses the preparation of polymeric micelles from amphiphilic polymers with a defined functionality. The micelles will be processed in the form of: polymeric nanoparticles stable in aqueous media, active surfaces by anchoring to a solid substrate, and/or stimulus-sensitive micellar hydrogels. The design of the polymers and their processing will be defined according to their application, which will focus on diagnosis and therapy, in particular cancer diagnosis and the treatment of antimicrobial resistance.

The proposed work is highly multidisciplinary and involves the three aspects of functional materials development: i) polymer synthesis and chemical characterisation, ii) preparation and processing of nanomaterials and their characterisation using specific techniques such as electron microscopy, among others, iii) evaluation of the biological application of the systems for which they have been designed. Studies related to biological activity will be supported by specialist research groups and will be carried out through pre-doctoral student placements in specialised laboratories.



**Candidate profile:** Graduate in Chemistry or related disciplines (with background in organic and polymer chemistry). The candidate must hold a Master degree.

**Application:** Imminent publication of the call

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