



# PhD research contract



UNIVERSITAT DE  
BARCELONA

4-year full-time PhD contract (FPI) funded by the Spanish AEI  
(Project Nr. PID2021-127397NB-I00)

## Multifunctional hybrid nanostructures with enhanced optical and magnetic properties

### Topics

- Multidisciplinary project aiming to tailor optical and magnetic properties of **single and hybrid nanostructures and nanoparticles**:
- **iron oxide-based single core and multicore** systems for environmental remediation; **iron-oxide-Au** for ultra-sensitive biomolecular detection or photothermal therapy; **Bi<sub>2</sub>S<sub>3</sub>-based** as for enhanced X-ray Computed Tomography.

### Your profile

- You have a Master in Nanoscience, Material Sciences, Physics, Chemistry, or a related field.
- You are an enthusiastic researcher enjoying experimental, collaborative work.

### Your tasks

- You will develop and optimize new sample preparation routes
- You will use an advanced set of complementary characterization probes, many of them probing local properties (structural, magnetic and optical).

### We offer

- You benefit from a full PhD training programme.
- You will receive a systematic training on the job, in addition to personal development possibilities.
- Interdisciplinary, innovative and dynamic collaboration (local and international).
- Access to advanced facilities for sample preparation and characterization.
- Access to large-scale facilities (synchrotron) and other *singular* scientific technical infrastructures.

### Contact

[Group of Magnetic Nanomaterials](#)

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