

## PhD Studentship Opportunity in Nanoscience

We seek highly motivated candidates to undertake research towards a PhD in the following topic:

### *Magnetic nanoparticle arrays for wireless hydrogen detection and other energy-related applications*

- Start date: July 2024
- Duration of funding: 3 years (with possible extension up to 4)
- Location: [ApNano group](#) lab., University of Castilla-La Mancha (Ciudad Real)
- Supervision: Drs. Peter Normile (UCLM) and Daniel Salazar (BCM)
- Candidates require a good first degree in physics, material science or chemistry and a good working knowledge of English.
- For more information, please send your CV to: [peter.normile@uclm.es](mailto:peter.normile@uclm.es) and [daniel.salazar@bcmaterials.net](mailto:daniel.salazar@bcmaterials.net)

The successful candidate will work in the exciting field of nanostructured functional materials for energy-related applications. More specifically, in close collaboration with the Basque Center for Materials, Applications and Nanostructures (Bilbao), the multidisciplinary research topic aims to study the interplay between structure and magnetism in palladium-rich nanoparticle (NP) films. Alloyed together with iron, the PdFe NPs will act as unique magnetic (and therefore wireless) detectors of hydrogen gas, an important proposed source of “green energy” for the future. The first of such films has already been fabricated at our ApNano lab (see figure below). The topic will also explore other energy-related applications of these materials, e.g., for magnetic neuromorphic computing, a field of emergent importance given the rapid ascent of artificial intelligence-based technology. The project includes ample opportunity for experimental study at the large-scale-facilities (synchrotrons) in [Spain](#), [France](#) and the [UK](#).

