

Postdoc Position in Optoelectronic Properties of Quantum Materials

The University of Salamanca (USAL) welcomes applications for a 2-year Postdoc position, starting from September 2025. The position is part of the project CHIROTRONICS, "Controlling chirality in atomically thin quantum electronic materials", funded by the European Research Council (ERC), grant agreement No. 101039754.

Application deadline: May 20th, 2025

More information at: link



Research environment and team

The postdoctoral researcher will join the Quantum Materials and Devices (QMADE) laboratory (<u>https://qmade.usal.es/</u>) at USAL, led by Dr. José Caridad.

We are dynamic and interdisciplinary experimental team combining *advanced nanofabrication, low-noise transport and spectroscopy techniques* to uncover exotic electronic phenomena in quantum materials.

We are part of LUMES, the Center of Excellence in Light and Structured Matter at the University of Salamanca (<u>https://lumes.usal.es/en/home/</u>)

About the project

CHIROTRONICS is an ERC-funded project that investigates intriguing chiral responses in atomically-thin quantum materials. These exotic phenomena are promising for applications in quantum technologies, optoelectronics, and biosensing.

In this position, *the successful candidate will explore chiral optoelectronic properties of novel 2D materials and heterostructures* at different temperatures (down to mK), and with/without the presence of an external magnetic field.

Your main responsibilities

- Design and fabricate state-of-the-art 2D heterostructures via precise stacking and alignment techniques

- Conduct low-noise electrical and optoelectronic measurements, at cryogenic temperatures and under the presence of external magnetic fields.

- Collaborate within a dynamic and interdisciplinary team of physicists, engineers, and material scientists.

- Develop your own research ideas while mentoring MSc and PhD students.

- Contribute to high-impact publications and international collaborations.

Requirements

- PhD in Physics, Materials Science, or related Engineering degree.
- Solid experience in van der Waals heterostructures and 2D material device fabrication.
- Skilled in electrical/optoelectronic characterization of nanomaterials.
- Experience in cryogen-free cryostats and/or dilution refrigerators is a strong plus
- Fluent in English (min B2).
- A strong scientific track record relative to career stage.

What we offer

- 2-year contract, full-time contract (37,5 hours/week)
- Competitive salary
- Work in an international environment and contribute to a high-impact ERC project.
- Location: University of Salamanca, one of Europe's oldest and most prestigious
- universities, in a beautiful and affordable city in western Spain.
- Expected starting date: September/October 2025

How to apply

Application deadline: May 20th, 2025 (or earlier if a suitable candidate is found) Send the following information to Dr. José Caridad at gmade@usal.es:

- A cover letter detailing your motivation and fit for the position
- Your CV (max. 4 pages)
- Contact details for two referees who can provide recommendation letters

Additional information can be found here link