



PhD Student Position in Optical Properties of Quantum Materials

The University of Salamanca (USAL) welcomes applications for a 4-year PhD Student position, starting from October/November 2023, to obtain a PhD degree in Physics.

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. 101019734, supervised by Dr. José Caridad.

Application deadline: **August 1st, 2023**

Complete information at: [link](#)



Research environment and team

The NANOTECH section at USAL, consists of several groups conducting cross-disciplinary research in the application of nanotechnology to a wide range of scientific and engineering disciplines (electronics, chemistry, biology, optics, etc).

The PhD candidate will join the Quantum Materials and Devices (QMatDE) laboratory (<https://qmatde.usal.es/>) at USAL, led by Dr. José Caridad. QMatDE is a dynamic and interdisciplinary experimental team aiming to investigate unique properties of electronic states in novel quantum materials by combining advanced nanofabrication techniques, transport measurements and optical spectroscopy. The group is currently interested in exploring exotic anisotropic phenomena predicted to occur in two-dimensional 2D materials with broken symmetries, towards the realization of high-performance chiro-optical and electronic devices.

We strive for academic excellence in an environment characterized by collegial respect and academic freedom tempered by responsibility.

Project description

CHIROTRONICS is an ERC project at the boundary of materials science, physics and engineering. It aims to study the exciting optical and electronic responses and related anisotropic phenomena predicted to occur in atomically-thin chiral materials (ultra-thin chiral systems with atomic-scale thickness).

These intriguing and exotic "chiral" signals are expected to be large and actively controlled by local fields, and therefore useful for a myriad of novel applications including biochemical sensing or quantum technologies.

In this PhD position, the successful candidate will explore novel optical and optoelectronic properties of 2D materials and heterostructures via spectroscopy. Such