

## Post-doctoral position at the University of Granada

### Ion Traps and Lasers Laboratory

A post-doc position is available at the University of Granada to work in a new project funded by the Spanish Ministry of Science and Innovation entitled **Single-trapped-ion detection techniques for (super)heavy ions, precision experiments based on optical sensing and quartz amplifiers**.

The project focusses on performing ion-trap experiments using two detection and measurement techniques, one based on quartz amplifiers and the other on optical sensing using a laser-cooled  $^{40}\text{Ca}^+$  ion as detector. Both techniques have been developed in the framework of several research projects. The goal is to reach experimentally single-ion sensitivity for heavy and superheavy ions with low electronic charge states. This is done in collaboration with GSI and the University of Mainz. At the University of Granada, state-of-the-art experiments will be performed on specific nuclides, using the only Penning-trap facility in Spain built in the "Ion Traps and Lasers Laboratory". The construction of the laboratory was boosted by an ERC Grant and has reached the current state thanks also to infrastructure projects from the Spanish and Andalusian Governments, EU funds and funds from the University of Granada. It was nominated in 2017 as singular laboratory in advanced technologies at the university. The group aims also, as part of these activities, at extending the experiments into the quantum regime for frequency metrology with particular links with nuclear physics.

Besides conducting the experimental research proposal, part of the work includes supervising graduate and undergraduate students, contribute to the writing of scientific publications and participating in an infrastructure project (provisionally granted by the regional government of Andalusia) to purchase (including conceptual design) a new superconducting solenoid, with similar specifications to the one in the laboratory, but free of cryogens.

**Applicants are expected to have experience in experiments with ion traps (Paul and Penning-type), lasers and associated equipment, ion sources, ion manipulation and ion/fluorescence detection techniques. Experience in laser cooling (particularly ground-state cooling) will be very well considered.**

**Salary:** to be negotiated depending on the experience of the candidate.

**Duration of the contract:** 1+1 years.

**Starting date:** preferably between February and March 2021.

**Interested applicants** (with the expected background) please contact:

**Prof. Daniel Rodríguez** [danielrodriguez@ugr.es](mailto:danielrodriguez@ugr.es), Director of the laboratory.

For further information you might also visit <http://trapsensor.ugr.es>



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