

Experimental Particle Physics CNRS Post-Doctoral 3 years (renewable)
Position at CENBG Bordeaux France

The Centre d'Etudes Nucléaires de Bordeaux Gradignan (CENBG) invites applications for a 3 years Post-Doctoral position (renewable) to work on the NEMO experiment searching for the neutrinoless double beta decay.

The NEMO experiment is looking for the double beta decay without emission of neutrino. The observation of this decay, process beyond the standard model by violating the leptonic number by two units, would be an experimental proof that the neutrino is a particle of Majorana, i.e. identical to its antiparticle and that global leptonic number is not conserved.

The NEMO group at CENBG is participating to the data analysis of the NEMO-3 experiment, running since 2003 in Modane Underground Laboratory (France).

Since 2006, the group is also involved in the R&D program of the SuperNEMO experiment. The goal is to develop a higher sensitivity detector able to reach a half-life of 10^{26} years in $bb0\nu$ process using 100-200kg of enriched 82Se . The main R&D activities of the group at CENBG are the very low radioactivity measurements and the development of the SuperNEMO calorimeter with plastic scintillators and large low radioactive phototubes. The main goal of the calorimeter R&D is to detect the electrons with an energy resolution (FWHM) of 8% at 1 MeV.

The successful candidate will participate to the finalisation of the calorimeter R&D and will be in charge of the construction and qualification of the first modules of the SuperNEMO calorimeter. These modules will be dedicated to the demonstrator of SuperNEMO which will consist in 1/20 of the full detector. In parallel optical simulations and analysis of the NEMO3 data could be useful to validate the developments performed on scintillators and energy calibrations.

Candidates must have at the time of employment a PhD in physics. Previous experience in photodetection and low radioactive physics will be considered an asset.

Applications, including a cover letter, curriculum vitae and letters of recommendations should be submitted via email to Christine Marquet (marquet@cenbg.in2p3.fr) and Fabrice Piquemal (piquemal@cenbg.in2p3.fr).