

DIPC POST-DOCTORAL POSITIONS

The Donostia International Physics Center DIPC is currently accepting applications for post-doctoral appointments. This is a unique opportunity for highly motivated junior researchers with a recent PhD degree in physics or related fields to join some of the DIPC high-profile research teams.

Interested candidates please send an updated CV, a brief statement of interest, and contact information to postdoc@dipc.org. Reference letters are welcome but not indispensable. The particular position(s) to which the candidate is applying should be stated as well. Although candidates are encouraged to contact the project supervisors to know further details about the proposed research activity, please be aware that the application will be evaluated only if it is submitted directly to the email address mentioned above (postdoc@dipc.org).

Next review of applications is scheduled for April 20th 2018. Applications must be received before this date and will be evaluated by a Committee designed by the DIPC board on the basis of the following criteria (with point weights indicated in parentheses):

- CV of the candidate (40%)
- Adequacy of the candidate's scientific background to the project (40%)
- Reference letters (10%)
- Others: Diversity in gender, race, nationality, etc. (10%)

Evaluation results will be communicated to the candidates soon after. Positions will only be filled if qualified candidates are found.

The DIPC could revoke its decision in case the candidate breaches the condition of joining before the deadline indicated in this call, proceeding in that case to grant the position to the next candidate based on the classification order, and provided that he has obtained a score higher than 50 (out of 100) in the evaluation of his candidature.

However, the selected candidate may keep the position if, in the opinion of the Evaluation Committee, he duly justifies the reasons why he can't join before the specified deadline, and as long as the project allows it.

The duration of the appointment will be 1 year. The appointment could be renewed for a second year, subject to performance and to the availability of funding.

The salary will be 32000 euros per year before taxes.

JOB OPENINGS

- Development of xenon detectors for basic and applied physics

Supervisor (contact person): J.J. Gomez-Cadenas (Gomez@mail.cern.ch). Reference: 2018/11.

This position is open in the framework of the NEXT and PETALO projects. We seek a Ph.D. in physics with extensive experience in xenon-detector instrumentation. The detectors being developed by the NEXT projects are high pressure gas xenon time projection chamber with electroluminescent readout, while the PETALO project will develop a TOF-PET based in liquid xenon.

The candidate is expected to play a leading role in both projects. Specifically he is expected to qualify as technical coordinator of the NEXT experiment, as well as playing a leading role in the R&D towards the development of the NEXT technology to the ton-mass scale. He is also expect to participate in the technical development of the PETALO project.

- Coherent effects in plasmon-molecule interactions

Supervisor (contact person): J. Aizpurua and R. Esteban (aizpurua@ehu.eus, ruben_esteban@ehu.eus) Reference: 2018/14.

Metallic nanoparticles support strong resonances at optical frequencies called plasmons, which can confine light to extremely small volumes and thus present very efficient coupling with nearby molecules. The properties of these plasmonic nanocavities have been studied using mostly a classical framework based on Maxwell's equations. There is, however, a growing interest on understanding how quantum effects related to coherent effects, the quantized nature of plasmons and more accurate description of the molecules influence the plasmon-molecule interaction.

The candidate will work in the Theory of Nanophotonics groups (<http://cfm.ehu.es/nanophotonics>) to develop and apply classical and quantum methodologies such as QED to better understand the physics behind the plasmon-molecule interaction, and how controlling this interaction may impact applications in fields such as spectroscopy, optoelectronics or quantum information. Of particular interest could be the study of collective effects that are expected to emerge when many molecules interact strongly with a plasmon, or new effects due to the excitation of extremely confined fields in plasmonic gaps.

The work will be theoretical, but the group works with many experimental groups and the candidate is expected to contribute to such collaborations whenever possible. The candidate is also expected to work closely with other theoreticians experts on topics closely related to the present work, as for example quantum modeling of materials, quantum information or quantum chemistry. A strong background on nanophotonics and QED is highly valued.