

DIPC PhD STUDENT GRANTS

The Donostia International Physics Center DIPC is currently accepting applications for PhD students. This is a unique opportunity for highly motivated students, recently graduated from the University in physics or related fields, to develop a research career joining some of the DIPC high-profile research teams.

DIPC PhD grants last for just 12 months. An extension of the grant may be accepted just in some exceptional cases. DIPC PhD grants are intended to support the student during the first steps of his/her research career. Further financial aid to continue the PhD research project after this period should be obtained from other institutions.

Interested candidates please send an updated CV including an academic transcript with the obtained marks, a brief statement of interest, and contact information to phd@dipc.org. Reference letters are welcome but not indispensable. The particular PhD position(s) to which the candidate is applying should be stated as well.

Applicants are advised to hold, or be in the final year of a master's degree in physics, chemistry or material science.

Next review of applications is scheduled for June 30th 2016. Applications 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 (60%)
- Adequacy of the candidate's scientific background to the project (20%)
- Statement of interest and 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.

PhD OPENINGS

- Synthesis of cyclic polymers

Contact person: Dr. F. Barroso (fbarroso@ehu.eus). Reference: 2016/3

The student will explore new approaches to synthesize cyclic polymers and will use state-of-the-art techniques for characterizing the chemical structure and the physical properties of as-obtained polymers. Motivated candidates with a background in polymer chemistry or synthetic organic chemistry are very welcome. This project offers excellent opportunities to work with national and international collaborators in a multi-disciplinary environment.

- Quantum description of plasmonic systems and their coupling with single emitters

Contact person: R. Esteban (ruben_esteban@ehu.eus). Reference: 2016/8

Small metallic particles support plasmonic resonances at optical frequencies due to the excitation of collective oscillations of the free electron gas. In the last years, it has become clear that quantum effects introduce new effects and possibilities in the study of plasmonic structures, and in particular in the coupling between plasmons and emitters such as quantum dots or molecules.

The main objective of the PhD project will be to analyze and understand new phenomena in such hybrid plasmon-emitter systems, using full Quantum Electrodynamics (QED) or simpler models. A complementary aim of the work will be to develop effective models to describe non-linear effects in plasmonic dimers formed by two nanoparticles separated by a gap that is narrow enough for tunneling to have a strong effect on the optical response.

The work will be theoretical but the PhD student must be able to collaborate with experimentalists and be willing to move for research stays on leading international groups. In particular, a strong collaboration is expected to be established with the group of Brahim Lounis in Bordeaux. Experience on the study of plasmonic systems and especially their coupling with emitters would be valued.