Donostia International Physics Center

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 December 1st 2014. 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.

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PhD OPENINGS

- ***Time-dependent density functional theory calculations of the energy loss of particles in metallic media.***

  Contact person: Dr. D. Sánchez-Portal (sqbsapod@ehu.es@ehu.es). Reference: 2014/18

  The candidate will perform numerical calculations to understand the energy loss of charged particles traveling in metallic media. The complexity of the dynamic interaction between charges and condensed matter makes it difficult to apply theoretical schemes that can cover the full range of projectile velocities. A detailed description of electronic excitations, dynamic screening, electron emission, and possible charge transfer processes is required. The methodology to employ will be time-dependent density-functional theory (TDDFT) with real-time propagation. TDDFT can accurately describe the energy loss for a wide range of projectile velocities. Metallic clusters will be used as test targets and the candidate will explore the connection of the obtained results to those of bulk systems.

- ***Electronic and magnetic properties of metal organic coordination networks***

  Contact person: Dr. A. Arnau (andres.arnau@ehu.es). Reference: 2014/19

  The candidate will perform a systematic theoretical analysis of magnetic and electronic properties of some two-dimensional metal-organic coordination networks on Au(111) and BN/Cu(111) surfaces. The metal organic networks that we will consider are composed by organic molecules and different 3d transition metal atoms. A basic knowledge of many-body theory and computational skills using ab-initio codes based on density functinal theory are required.