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 August 18th 2017. 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.

The DIPC could revoke its decision in case the candidate does not join his/her duties within 6 months after the publication of the list of selected candidates.

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PhD OPENINGS

- Adsorbing Atoms and Molecules on van der Waals Heterostructures

Contact person: A. Ayuela (andres.ayuela@ehu.eus). Reference: 2017/8.

We are currently looking for a PhD in the field of condensed matter physics and first principles calculations to carry research on the adsorption of atoms and molecules, such as hydrogen molecules and water, on van der Waals layered nanostructures. This work could have a direct application, for instance, to the hydrogen storage technology.

Experience in the use of ab-initio electronic structure calculations to study physical properties of condensed matter and to relate them to their chemical composition and atomic structure is preferred. For instance, candidates can show, if they have previous experience or strong interest in first principles calculations and layered nanostructures

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- Statically screened potentials, Hookean systems and Quantum Dots

Contact person: X. Lopez (xabier.lopez@ehu.eus). Jon M. Matxain (jonmattin.matxain@ehu.eus). Reference: 2017/12.

We are looking for a PhD student in the field of theoretical and computational chemistry in order to develop models of interparticle potentials for electron-nuclei and electron-electron interactions, to model different type of confinements (quadratic, gaussian and long-range exponential yukawa-type confinement) and screened Yukawa-type electron-electron interactions. These models could be further applied in the field of quantum dots in biological environments.

The candidates should have experience in the use of quantum chemical programs to carry out ab-initio electronic structure calculations, along with programing skills in Fortran. It is required that the candidates have a strong background in theoretical chemistry.

- Theory of quantum transport in graphene-based nanostructure networks

Contact person: T. Frederiksen (thomas_frederiksen@ehu.eus) Reference: 2017/13.

We are looking for one PhD student to study electronic structure and quantum transport in multi-terminal networks composed of graphene-based constituents such as pristine and doped graphene nanoribbons. The project involves developing a complete understanding of electron beam splitting in graphene-based nanostructures and how such device components can be combined into extended networks for controlled electron routing, logic gates, interferometry, sensing applications, etc.

Candidates should be motivated students with a strong background in condensed matter physics, good communication skills and English knowledge. Previous experience with band structure theory, quantum transport methods, and Green's functions is preferred.