Donostia International Physics Center

DIPC research assistantship

The Donostia International Physics Center DIPC is currently accepting applications for a six months research assistantship under the title ***"Ab initio plasmonics using LCAO basis sets"***. The purpose of this research project is the implementation within our in-house "mbpt-lcao" code of Casida equations to compute the optical response of systems containing hundreds of atoms using TDDFT.

The "mbpt-lcao" code is currently developed by Peter Koval and Daniel Sanchez-Portal at DIPC, and Dietrich Foerster at the Univ. of Bordeaux. It uses a very powerful iterative algorithm to compute the TDDFT optical response first developed by Prof. Foerster, Prof. Coulaud and Dr. Koval at the Univ. of Bordeaux [1]. The "mbpt-lcao" is heavily based on the used of strictly localized basis sets in real-space, like strictly confined atomic orbitals [2]. We now want to incorporate the capability of using Casida equations, complementary to the existing iterative method, to compute the optical response of nanostructures within TDDFT.

[1] P. Koval, D. Foerster, O. Coulaud, Journal of Chemical Theory and Computation, 2010, 6 (9), 2654.
[2] J.M. Soler, E. Artacho, J.D. Gale, A. García, J. Junquera, P. Ordejón, D. Sánchez-Portal. Journal of Physics: Condensed Matter, 2002, 14 (11), 2745.

This research assistantship will last for 6 months, starting at the earliest possible incorporation date of the candidate during July 2016.

Experience in code development and the basic aspects of TDFFT is necessary to develop this project. Candidates should hold a bachelor in physics or quantum chemistry. Research experience will be highly appreciated.

Interested candidates please send an updated CV including an academictranscript with the obtained marks, a brief statement of interest, and contactinformation to phd@dipc.org. Reference letters are welcome but not indispensable

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. The position will only be filled if a qualified candidate is found.