Donostia International Physics Center

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 3rd 2013. 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 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.

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JOB OPENINGS

- ***Electronic and magnetic properties of metal-organic coordination networks on topological insulators***

  Post-doctoral position, contact person: A. Arnau (andres.arnau@ehu.es) Reference: 2013/1.

  An interesting alternative to magnetic doping of topological insulators (TIs) with 3d transition metal impurities is the adsorption and/or intercalation of thin films made of metal-organic coordination networks (MOCNs) that present magnetic order. For example, it has recently been found that strong electron acceptor molecules, like TCNQ or TCNE, can be used as ligands to link metal atoms like Mn, Fe, Co or Ni, showing ferromagnetic order in some cases. In this project we aim at understanding in detail the changes introduced by the metal-organic film in the electronic structure of TIs like Bi2Se3, Bi2Te3 or Sb2Te3 with a clear target to hit: convince well-experienced experimental groups to do XMCD, magnetization and spin-resolved ARPES measurements to characterize the different samples and clarify whether the oppening of the Dirac cone gap at the Gamma point is feasible or not, as well as the realization of the quantized anomalous Hall effect.

  The candidate should have a good background in solid-state and many-body physics, as well as experience in using various DFT ab-initio codes: KKR, LAPW and VASP.

- ***Nano-composites layered materials based on Graphite Oxide (GO) and polymers***

  Post-doctoral position, contact person: J. Colmenero (juan.colmenero@ehu.es) Reference: 2013/4

  The ability of layered materials to host a polymer phase in the interlayer's allows the study of fundamental issues related to the structure and dynamics of confined matter, as well as organic–inorganic interactions at the nanoscale. In this context, graphite oxide (GO) offers unique opportunities associated with its subnanometer multilayer structure, hydrophilic character, and possibilities for the large-scale production of high-quality specimens. At a more fundamental level, polymer intercalation into GO is a convenient platform for the much needed studies of the macromolecular structure and dynamics under extreme two-dimensional confinement, where theory predicts particular scaling laws for the chain dimensions and the predominance of amoeba-like fluctuations. Based on preliminary studies, we know that a convenient polymer to start with is poly(ethylene oxide).

  The candidate should have a good background in chemistry and polymer science as well. Experience in using characterization techniques as X-ray diffraction, inelastic neutron scattering, dielectric and infrared spectroscopy, would be also very valuable.