



## CALL FOR APPLICATIONS - February 2023

### Post-doctoral Position

Donostia International Physics Center (DIPC) is currently accepting applications for Post-doctoral positions. This is a unique opportunity for junior researchers with a recent PhD degree in Physics or related fields to join one of DIPC's high-profile research teams. A description of each of the available openings, contact information and deadlines can be found on the following pages.

Although candidates are welcome 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 listed as "application email".

Applications received by the deadline will be evaluated by a Committee designed by the DIPC board on the basis of the following criteria:

- CV of the candidate (40%)
- Adequacy of the candidate's scientific background to the project (40%)
- Reference letters (10%)
- Other: 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 may revoke its decision if the candidate fails to join by the appointed time, in which case the position will be awarded to the candidate with the next highest score, provided it is above 50 (out of 100).

However, the selected candidate may keep the position if, in the opinion of the Selection Committee, the candidate duly justifies the reasons why he or she cannot join before the specified deadline, and as long as the project allows it.

**Ref. 2023/10**  
**Synthesis and Characterisation of Organic Donor–Acceptor  $\pi$ -Conjugated Molecules as platforms for reversible charge-to-spin conversion**

**Supervisor(s):**  
*Daniel Reta (daniel.reta@ehu.eus)*

**Duration\*:** 3 years

**Application Deadline:** 13/02/2023

**Application Email:** [jobs.research@dipc.org](mailto:jobs.research@dipc.org)

Applications are invited for a Postdoctoral Research Associate in “Synthesis and Characterisation of Organic Donor–Acceptor  $\pi$ -Conjugated Molecules as platforms for reversible charge-to-spin conversion” to work with Dr Daniel Reta for a period of up to three years.

Organic molecular magnetism is a rapidly evolving field that offers exciting applications in areas ranging from qubits to chemical synthesis. However, presently available molecular architectures exploit only a fraction of the available chemical space, inadvertently constraining its potential. Current efforts in our group aim at remedying this – we focus on establishing a general approach to obtain diradicals in  $\pi$ -conjugated donor-acceptor molecules, by exploiting the interplay between charge transfer and open-shell states. For this, we direct a concerted experimental and computational effort to synthesise targeted molecules, characterise their magnetic properties via electron paramagnetic resonance and describe the electronic structure using correlated quantum chemistry methods.

Building on ongoing studies at the group, in this project you will lead the synthetic efforts and assist with the characterisation of the reactivity and magnetic properties of the samples.

Duties and responsibilities:

- To synthesise a library of molecules with varying constituent elements. This will help determine how the interplay between donor-acceptor strength coupled to the extent of  $\pi$ -conjugation affects diradical stabilisation.
- To handle, characterise and crystallise air-sensitive samples.
- To take initiatives in the planning of research.
- To manage the work of a small research team.
- To write drafts for publishing results in peer reviewed journals.
- To participate in grant writing to secure external funding.
- To participate in local seminars and international conferences to disseminate findings.

Essential requirements:

- Hold a PhD, or being near completion, in the general area of organic chemistry or a closely related discipline.
- Experience working on a glovebox.
- Good oral and written communication skills in English.

More information about the group can be found in <https://www.danielreta.com/>

**Interested candidates should submit an updated CV and a brief statement of interest to the application email listed above. Reference letters are welcome but not indispensable. The reference of the specific opening to which the candidate is applying should also be stated in the subject line.**

**\*Openings with a duration of more than one year are for a 1-year contract, renewable based on performance and availability of funding.**