



## **CALL FOR APPLICATIONS - August 2022**

### **Research Assistant Positions**

Donostia International Physics Center (DIPC) is currently accepting applications for Research Assistant positions. This is a unique opportunity for highly motivated students, recently graduated from the University in Physics or related fields, to gain research experience in 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. 2022/54**

**New Biomolecules with Huisgenase Activity: Metalloproteins as Biocatalysts for (3 + 2) Cycloadditions**

**Supervisor(s):**

*Iván Rivilla de la Cruz (ivan.rivilla@ehu.es)*

**Duration\*:** 1 year

**Application Deadline:** 11/08/2022

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

Proteins can perform a huge number of biological functions with amazing efficiency. In order to achieve these different functions, proteins rely on the precise 3D arrangement of functional groups which are referred to as the protein fold. In particular, enzyme-catalysed chemical reactions are of great interest in green biotechnology.

The enzyme's amino acid sequence determines its ability to fold into a defined native structure, positioning and tuning the dynamics of its functional groups required for substrate binding and catalysis. Many efforts have been devoted to understanding how proteins evolve to adopt new functions; the consensus emerged that new functions originate from latent promiscuous enzymes or broad specificity enzymes that serve as starting points for further evolution. Indeed, the redesign of existing proteins in order to perform new reactions has been very fruitful. These approaches rely mostly on the grafting of active catalytic sites or catalytic cofactors onto protein scaffolds.

The main goal of this project is the design and synthesis of a new family of metalloproteins to catalyse the 1,3-dipolar reaction between an imine and a  $\pi$ -deficient dipolarophile in water media.

The candidate must have knowledge in organic synthesis. In addition to having experience in characterization techniques such as NMR, IR, etc.

**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.**