

# IBERIAN Project

Project description 2021 Call

## General Description and Motivation:

The fast and effective development of novel technologies defines an economic growth concept which finds solutions to the socioeconomic and ecologic challenges of our time. Providing tools and knowhow which not only image systems, organisms and devices but also allow to zoom in on all important length scales including the atomic scale, will be essential in understanding the complex structural and functional correlations; ultimately these insights will enable rational design of new devices, tools and treatments enabling the new and sustainable technologies.

The magnitude of this grand challenge for modern science and engineering requires new ways of coordinating intellectual leadership and scientific resources like characterization, computation, and growth capabilities. Fundação para a Ciência e a Tecnologia (FCT, Portugal) in collaboration with the Alba Synchrotron (Spain) has recognized this need; by developing together with its partners four collaboration networks, covering all essential resources, proving its efficiency within the international competition, and disseminating progress and research background, the project brings together the essential ingredients for success and leadership.

Scientifically, the program is focused on the four key areas:

- 1.) Multi-length scale imaging in life sciences: understanding how molecular dynamics results in function of the tissue.
- 2.) Rational design of catalysts.
- 3.) Electrical storage: E-mobility in an economic and environmental context.
- 4.) Designing metamaterials based on 2-D materials with exotic topological states: new paths to room temperature, high bit-width quantum computing.

Building on already existing networks of Alba's staff we identified Spanish centers of excellence working in these areas. Together with a Portuguese initiative with the goal of strengthen the Portuguese user community of Synchrotrons and X-ray free electron lasers, we are able to broaden this Spanish to an Iberian initiative. By providing four postdocs to Alba, the Portuguese FCT is enabling the start of pilot projects in all four fields.

Each of the four initiatives can be understood as a virtual center which combines the best available tools located in Iberia to a single unit with a working plan and a well-defined scientific goal. On the long run, these virtual centers can be developed to a new form of user support which will provide answers to problems and not only data. By providing the full machinery to the user community this science infrastructure will benefit a large number of users in Portugal and Spain, giving them a significant research infrastructure advantage within Europe.

## The Funding Opportunity:

The maximum funding period of the four awarded project is five years. After three years, the progress of each awarded project will be reviewed by a review panel; the continuation of the project will depend on the review panel endorsement. The review panel will be formed by selected members of the proposal review panel of the ALBA public user program.

Each awarded project will be supported by a Full Time Equivalent (FTE) postdoctoral researcher (PDR) funded by FCT and ALBA ( $\frac{3}{4}$  and  $\frac{1}{4}$  respectively) and employed by ALBA. The PDR will participate both to the specific project and to the usual PDR activities at ALBA, like user support in the corresponding beamlines.

Required other resources, like staff time, materials and supplies, or any other investments are not eligible for funding through this project and it is expected that the required resources are in kind provided by the participating institutes.

## The Proposal Process:

To apply for this project, you can fill the attached proposal template and submit it by email to [bcalisto@cells.es](mailto:bcalisto@cells.es) with the subject "IBERIAN Project". The successful submission will be acknowledged by a receipt email. Submission deadline is 20.1.2021 midnight.

## Eligibility and Award Process:

Within the IBERIAN-project a group or single researcher, funded by a Portuguese or/and Spanish funding-agency, can apply for one of the four projects. The team should, but has not to include, at least one Portuguese, one Spanish, and one ALBA contributor. The synergetic formation of the team will be essential to support the formation of a long-lasting research network and will be an important evaluation criterium. A bi-national group will be strongly favoured but is not essential.

All fully completed proposals submitted at the call deadline will be reviewed and rated by review committees. Each of the four areas will be reviewed by an independent committee formed by an external expert, a member of ALBA's upper management, and a representative of the scientific community. The numeric results of the review including a short review summary will be published.

## Review criteria:

The review panel will review each proposal by the following criteria:

1. Strategy:
  - a. Strategic and tactical alignment with described call. (10)
  - b. Synergies of the team. (15)
  - c. Potential follow-up funding. (5)
2. Potential:
  - a. Capacity and leadership of the team. (10)
  - b. Executability of proposed research approach. (30)
  - c. Novelty in respect to the national and international competition. (10)
  - d. Quality of the proposal (motivation, well defined research plan with milestones and deliveries). (20)

To be selected the proposal must

- be best rated.
- and has to be rated with more than 50 points.

### **Dissemination:**

The abstracts of all received proposals and the initial corresponding funding decision will be published. In addition, the continuous funding after the progress review will also be disseminated.

The result of the detailed reviews will be only available to the two Principal Investigators (PIs) of the proposal. The results of the review can be disputed by the Portuguese PI. The PI will send an email to [kattenkofer@cells.es](mailto:kattenkofer@cells.es) explaining why the team disagrees with the review results.