Centro Interdisciplinar de Investigação Marinha e Ambiental

Novo Edifício do Terminal de Cruzeiros do Porto de Leixões

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Announcement of a call for research grant

Reference: 2026_01_BIPD_OPTIWEF.AI

A competition is open for the attribution of 1 Post-doctoral Research Grant in the framework of the project *OPTIWEF.AI –Optimization of Wave Energy Farms using Artificial Intelligence*, with the reference 2024.16830.PEX , supported by Fundação para a Ciência e a Tecnologia – FCT , according to the following conditions:

1. Scientific area: Civil Engineering

2. Admission requirements:

The candidate must hold a PhD* Civil Engineering, Ocean Engineering, Mechanical Engineering, Marine Renewable Energies or closely related fields, and demonstrate experience in the following areas:

- Wave energy, with a particular focus on the application of evolutionary computation techniques (e.g. Genetic Algorithms) for multi-objective optimization of wave energy farm layouts;
- Numerical modelling for wave energy resource characterization and assessment of far-field impacts on wave climate resulting from wave farm operation (e.g. SWAN, SNL-SWAN);
- Machine Learning applications, including sea-state clustering and the development of surrogate models for wave resource characterization;
- Knowledge of statistical or probabilistic methods applied to ocean engineering;
- Advanced scientific programming skills, particularly in Python;
- Experience working with high-performance computing (HPC) environments, including parallel workflows and large datasets;
- Experience in data management, version control (e.g. Git), and reproducible research practices;
- A strong publication record in high-quality scientific journals and conferences, as well as experience in producing technical reports and research project deliverables;
- Ability to communicate scientific results to both specialist and non-specialist audiences through public talks, workshops, or media interactions;

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- Experience with offshore renewable energy projects or participation in national or European research projects
- Fluency in English, both written and spoken.

*BIPD can only be granted if the following are cumulatively verified requirements:

a) The doctoral degree was obtained in the three years prior to the date of submission of the scholarship application;

b) Post-doctoral research is carried out in a host entity distinct from the entity where the research work that led to the award of the doctorate degree was carried out;

c) Research activities do not require post-doctoral experience;

d) Research activities have a development and execution period equal to or less than three years;

e) The scholarship holder does not exceed, with the conclusion of the scholarship contract in question, including the possible renewals, an accumulated period of three years in this type of scholarship, consecutive or interpolated.

Academic degrees awarded by a foreign higher education institution must comply with the provisions of Decree-Law no. 66/2018 of 16th August, which approves the legal regime of recognition of academic degrees and diplomas of Higher Education, attributed by foreign higher education institutions, being any formalities established therein fulfilled only by the date of the contracting act.

3. Work plan:

The selected candidate will actively participate in the following activities:

- Development of an open-source Genetic Algorithm (GA) enabling multi-objective optimization (power production, cost-effectiveness, coastal protection, and synergies with other marine renewable energies) for the layout optimization of wave energy farms;
- Development of a surrogate machine learning model to predict power absorption and park effects of wave energy farms, with the aim of integrating it into the GA to improve its computational efficiency;

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- Development of an open-source database containing a broad range of test cases for wave farm layout optimization, which will serve as the basis for the development of guidelines and recommendations to optimize the design of wave energy farms;
- Collaboration in the organization of a thematic seminar to present the developed tools and guidelines to academic and wave energy industry stakeholders

4. Legislation and official rules:

Law nº. 40/2004, 18th August (Research Fellowship and Studentship Regulation) in its current version; Regulations for Studentships and Fellowships of the Fundação para a Ciência e a Tecnologia, I.P. and CIIMAR Grants Regulation approved by FCT.

5. Work place:

The work will be carried out as part of the Marine Energy and Hydraulic Structures Research Group of CIIMAR – Interdisciplinary Centre of Marine and Environmental Research at the Faculty of Engineering of the University of Porto (FEUP), Rua Dr. Roberto Frias, s/n, 4200-465 Porto, Portugal, under the supervision of Dr. José Víctor Ramos Castro.

6. Duration of the grant:

Duration of 12 months, starting on April 2026, eventually renewal up to legal terms, under the regime of exclusive dedication.

7. Monthly maintenance stipend:

The monthly maintenance allowance is: Doctoral graduates (BIPD) - PT 1 901,00€.

8. Selection methods:

The selection of the fellowship holder will be based on a curricular assessment (CA), focusing on the scientific and technical merit of the candidate, and a personal interview (PI), both scored on a scale from 0 to 20 points. The PI will only be conducted with candidates whose score in the CA is equal to or higher than 14 points in this component of the evaluation process.

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The global evaluation (GE) of the candidate will be calculated according to the following formula:

$GE = 0.6 \times CA + 0.4 \times PI$

The evaluation criteria for the CA are as follows:

- Academic profile of the candidate: PhD in Civil Engineering, Ocean Engineering, Marine Renewable Energies, or Mechanical Engineering (up to 6 points); other scientific areas (up to 3 points);
- Scientific publications related to the topic of the project, namely wave farm layout optimization (up to 6 points); scientific publications in other related areas (up to 2 points);
- Participation in research and development (R&D) projects: in the scientific area of the project (up to 5 points); in scientific areas related to the project (up to 2 points);
- Motivation letter, allowing the assessment of the candidate's English language proficiency and motivation for the proposed work (up to 3 points).

If none of the candidates achieves the minimum GE of 15 points, the fellowship shall not be awarded.

9. Composition of the jury selection:

President of the jury: Dr. José Víctor Ramos Castro

Vogal: Prof. Paulo Jorge Rosa Santos

Vogal: Dr. Daniel Rubén da Silva Pinto Clemente

10. Form of Advertising/notification of results:

The final results of the evaluation will be published through a list sorting the candidates according to their attributed mark by e-mail; in case of disagreement, the candidates have a 10-working day term in which to contest the decision, if it so wishes, as provided for in the Administrative Procedure Code in a preliminary hearing setting. The jury reserves the right to not assign the grant depending on the quality of the applications.

In case of resignation or withdrawal of the selected candidate, the next candidate with the highest evaluation score will be notified immediately.

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11. Deadline for application and presentation of applications:

The competition is open from **16/03/2026 until 27/03/2026.** The applications must be formalized, compulsorily, by sending the following documents:

- Detailed Curriculum vitae, in English;
- Past research activities and its relevance to the current project explained in a motivation letter written in English;
- Certificates of academic qualifications;
- Copy of the PhD dissertation;
- Other documents considered relevant by the applicant;
- Contact e-mail address and phone number;

To ensure the readability of all documents, the preferred file format is the Portable Document Format (.pdf).

The applications cannot exceed 20 MB and must be sent by e-mail to: rh@ciimar.up.pt , with the reference "**2026_01_BIPD_OPTIWEF.AI"** in the subject line. The applications that do not include all the elements previously indicated will not be considered.

12. Non-discrimination and equal access policy:

CIIMAR actively promotes a non-discrimination and equal access policy, wherefore no candidate can be privileged, benefited, impaired or deprived of any rights whatsoever, or be exempt of any duties based on their ancestry, age, sex, sexual preference, marital status, family and economic conditions, instruction, origin or social conditions, genetic heritage, reduced work capacity, disability, chronic illness, nationality, ethnic origin or race, origin territory, language, religion, political or ideological convictions and union membership.

Pursuant to Decree-Law no. 29/2001 of 3 February, disabled candidates shall be preferred in a situation of equal classification, and said preference supersedes any legal preferences. Candidates must declare, on their honour, their respective disability degree, type of disability and communication/expression means to be used during selection period on their application form, under the regulations above.