

ANNOUNCEMENT FOR THE AWARD OF A POST-DOCTORAL RESEARCH FELLOWSHIP

Title: *Post-Doctoral research Fellowship; 1 vacancy*

A call for applications is now open for the attribution of one Post-Doctoral Research fellowship within the scope of the R&D project “Plasma2Gas - Development of a microwave plasma gasification system for the thermochemical conversion of sewage sludge into synthesis gas” , ref^a POCI-01-0247-FEDER-070233, financed by the European Regional Development Fund (FEDER), through of the Competitiveness and Internationalization Operational Program (POCI) of PORTUGAL 2020, managed by the National Innovation Agency, under the following conditions:

Scientific Area: Physics / Chemistry

Recipient category: The BIPD are intended for doctorates in the area of Physics, Physical Engineering, Chemistry, Chemical Engineering, Mechanical Engineering, who cumulatively meet the following requirements:

- Holders of a PhD degree obtained in the three years prior to the date of submission of the fellowship application;
- Have carried out the research work that led to the attribution of a PhD degree in an entity other than the host unit Centro de Física da Universidade do Minho;
- Do not exceed, with the conclusion of the contract in question, including possible renewals, a cumulative period of three years in this type of fellowship, consecutive or interpolated.

Candidates who do not cumulatively meet the requirements described will be excluded.

Other requirements: The candidates should preferably have experience in one or more of the following topics: Glow discharges, microwave discharges, Plasma Characterization, Plasma Simulation.

Applicants eligibility: Applicants must comply with the eligibility conditions laid down in article 9 of the Research Grants Regulation of the Portuguese Foundation for Science and Technology (2019).

Workplan and objectives to be achieved: Support the development of a prototype gasification system based on a microwave plasma torch for treatment of industrial and domestic sludges.

1. Development of a microwave plasma torch model using Comsol and exploration of plasma properties as function operation parameters (injected power, gas mixture).
2. Optimization of the microwave plasma torch, in terms of plasma plume length, gas temperature, and plasma stability, as a function of various operating parameters (gas flow, gas mixture, injected power, quartz tube cooling).
3. Test of plasma torch stability with real sludge samples.

Applicable legislation and regulations: Research Fellowship Holder Statutes, approved by Law no. 40/2004 of August 18, in its current version published by Decree-Law no. 123/2019 of August 28; Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119,

through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021 and Regulation of Research Studentships and Fellowships (RBI) of the Foundation for Science and Technology, I.P. - in force.

Host/Contracting institution and scientific supervision: The work will be developed at the Physics Center of the University of Minho, located in the Campus de Gualtar – Braga, under the scientific guidance of Professor Luís Silvino Alves Marques.

Fellowship duration: The scholarship will have the maximum duration of 24 months, not renewable, with a provisional starting date on December 2021.

Amount of the research grant: The value stipend (Monthly Maintenance Allowance) is 1646 euros, per month, in accordance with the stipends values published by the Foundation for Science and Technology (FCT I.P.) in the country (Annex I – Monthly Stipends Values for the maintenance allowances of the [FCT Regulation for Research Studentships and Fellowships](#)) and Annex II of the Regulation of Scientific Research Fellowships of the University of Minho (RBIC), published in “Diário da República”, 2nd series, no. 119, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, according to the applicable regulation.

Payment is made on the 23rd of each month, through bank transfer to the Bank Identification Number of the fellow identified in the contractualization process.

Other benefits: Reimbursement of Voluntary Social Security (Social Security contributions), corresponding to the 1st level of discounts and personal accident insurance.

Exclusivity regime: The grantee will perform the activities under exclusivity, as foreseen in article 5º of the Research Fellow Statutes and applicable regulations.

Selection panel: Luís Silvino Alves Marques, Assistant Professor Department of Physics of Minho University (president); Dr. Veniero Lenzi PhD Researcher at Centro Física University of Minho (effective member); Dr. Sergey Pyrlin PhD Researcher at Centro Física University of Minho (effective member), José Carlos Teixeira, Full Professor Department of Mechanical Engineering of Minho University (Substitute member) and Maria Cândida Vilarinho, Associate Professor Department of Mechanical Engineering of Minho University (Substitute member).

The first effective member will substitute the President of the selection panel in case of impediment, being nominate the first substitute member in the place of the first effective member.

Criteria and procedures for applications assessment and selection: The applications assessment will focus on the candidate's Merit, following evaluation criteria, valued on a scale of 1 to 5 values:

Applicant Merit - AM (100%):

- Academic Qualifications - AQ, (which reflects the evaluation of the academic degree), with a weighting of 50%
- Personal Curriculum - PC, which reflects the scientific and professional path, and research experience in applications of plasma discharges, with a weighting of 40%
- Interview - INT, with a weighting of 10%.

The candidate's final classification (CF) of candidate's merit will be obtained by applying the following formula:

$$CF = AM=(AQ*0,5) + (PC*0,4) + (INT*0,1)$$

The academic degrees and diplomas documents, or their respective recognition when awarded by foreign higher education institutions are not mandatory in the application phase, being replaced by a declaration of honor of the candidate with the contents of academic results. The documents of academic qualification or respective recognition will be required in the contracting phase and must attest facts that occurred on a date prior to the application. In situations of divergence between the information contained in the declaration and the documentation submitted for contracting the grant, only the information contained in the latter will be considered. If the documents proving the ownership of the academic degree and diploma, or the respective recognition under the terms of Decree-Law No. 66/2018, of August 16, do not correspond to the classifications awarded in the evaluation of the academic path, which can change the candidate's ranking, the fellowship won't be contracted.

Disclosure of results: The provisional results of applications, based in the selection panel minutes, will be sent to the applicants by email until 90 working days from the applications deadline.

If case of unfavourable results, the candidates have a period of 10 working days to comment, if desired, in a prior hearing to interested parties, pursuant to articles 121 and 122 of the Code of Administrative Procedure (DL no. 4 / 2015 of January 7th).

Complaint and appeal procedures: The final results of the evaluation will be published through an ordered list (*alphabetically, by final grade obtained*), posted in a visible and public place of the host unit, as well as by email to all applicants, enclosing for that purpose, the minutes of the jury deliberations.

The selected candidate must inform its willingness to accept the grant, in writing. In case of rejection, the fellowship will be awarded to the next candidate in the ordered list of applicants.

The final decision can be contested within 15 working days, by sending to the President of the jury the corresponding claim. Interested parties may also submit an optional hierarchical appeal, addressed to the Pro-Rector for Research and Projects, Professor Filipe Vaz.

Application deadline and submission: The call for applications is open from 17 november 2021 till 23 december 2021.

Applications must be formalized, mandatorily, by sending an application letter accompanied by the following documents: *curriculum vitae; certificate of qualifications or declaration of the candidate; letter of interest; letters of recommendation (2); other documents considered relevant to the assessment of the scientific and professional path.*

Applications should be sent by email to lsam@fisica.uminho.pt and bolsas@ecum.uminho.pt indicating 015/ECUM/CFUM/2021 – PLASMA2GAS in Subject. Applications submitted by other means will not be accepted.

Fellowship contractualization: The fellowship will be attributed by signing a fellowship contract between the University of Minho and the fellow, accordingly with the contract minute (annex IV of the Regulation of Research Fellowships of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021, as indicated in 2.4 of the FCT document: “Rules for Granting and Management of Grants within the scope of R&D projects, including infrastructure projects, the multi-annual financing program for R&D units and other FCT financing instruments (Version 2021)”.

The contract may only be concluded after all the documentation required is collected, which must take place within a maximum period of 6 months, including evidences of doctoral degree or its recognition in Portugal, under Decree-law no. 66/2018 of august 16th.

Once all the documentation has been received, the contracting entity has a period of 60 working days to conclude the scholarship contract. Once received, the fellow must return the contract duly signed within 15 working days.

The activities under the fellowship contract can only began after proper authorization by the contracting entity.

Term and cancellation of fellowship contracts: Without prejudice to the other causes provided the fellowship regulations (FCT and UMinho) and in the Statute of the Research Fellow, the fellowship ends with the completion of the work plan, as well as with the expiration date for which it was granted or renewed.

At the end of the fellowship, the grantee is obliged to present a Final Report of the work carried out, in accordance with the objectives and evaluation criteria defined with the scientific advisor, within 30 days after the end of the scholarship.

The **final report** must be prepared in accordance with Annex I of the Scientific Research Fellowships Regulation of the University of Minho (RBIC), published in *Diário da República, 2nd Série, no. 119*, through dispatch no. 6524/2020 of 22-06-2020, ratified by ratification declaration no. 447/2021 of 22-06-2021.