

1 Post-Doctoral Research Grant Announcement (M/F)

Call open for applications for a Post-Doctoral research grant in modelling and simulation of transport processes at the microscale, within the framework of project “SPRINT - Ultra-versatile Structural printing of amorphous and tuned crystalline matter on multiple substrates”, financed by H2020-FETOPEN-2016-2017 with the reference 801464 under the following conditions:

Scientific Area: Modelling and Numerical Simulation, Fluid Mechanics, Microfluidics.

Admission requirements:

- i) Doctoral degree in the field of Transport Phenomena or related areas

Preferential conditions:

- i) Proven experience in Numerical Simulation (CFD/FEM) of transport phenomena, Heat and Mass Transfer, Fluid Mechanics/Microfluidics
- ii) Previous experiences with ANSYS FLUENT, COMSOL, OPENFOAM (or similar platforms)
- iii) Experience in programming (e.g. MATLAB, VBA or other)
- iv) Excellent oral and written communication skills in English
- v) Ability to drive research initiatives forward independently and to interact positively with fellow researchers

Activity Outline: Progress in miniaturization has fuelled exciting developments in the field of microfluidics, which allows taking advantage of the vastly different behaviour of fluids when dimensions are reduced from the macro- to the micro-scale. This has fuelled the development of a multitude of solutions known as lab-on-a-chip platforms, with application in many different fields (e.g. biotechnology, biomedical solutions, crystallization processes and surface engineering). As part of SPRINT project (www.project-sprint.com), you will develop innovative concepts of microscale gas nozzles for controlled diffusion/reaction of precursors. Using computational fluid dynamics approaches, you will investigate the performance virtual prototypes, to fine-tune potential output and identify optimal geometries and operating conditions. The activities will be developed in close collaboration with our partners in ETH Zürich (puigmartisgroup.com). The highly motivated candidate will be offered a post-doc position in a team with diversified scientific backgrounds, have the possibility to explore ideas and synergies with fellow researchers, and contribute to several ongoing international projects (including some with industrial links). More information can be found in www.simtechlab.com.

Legislation and regulations: Law N.º 40/2004, of 18th August, amended by Decree-Law n.º 202/2012, of 27th August, and amended by Decree-Law n.º 233/2012, of 29th October and by Law n.º 12/2013, of 29th

January and by Decree-Law nº 89/2013, of 09th July (Statutes of Scientific Research Fellow) and Grant regulation of University of Porto.

Work place: The work will be developed at the Simulation Technologies Laboratory, in the Chemical and Biological Engineering Department of Engineering Faculty of Porto University (FEUP), under the scientific supervision of Doctor Tiago Sotto Mayor and on an exclusive basis. More information can be found in www.simtechlab.com.

Grant duration: We offer an initial duration of 12 months, renewable upon performance assessment, up to the end of the project (Aug / 2022). The fellowship has a provisional start date of February 2019.

Stipend: The grant stipend amounts to 1495,00€ (net income), with payment by bank transfer.

Selection procedure: Curricular analysis, based on the following factors:

- (a) Doctoral degree in the area of Transport Phenomena (10 points), Doctoral degree in a related area (5 points);
- (b) Numerical expertise on Fluid Mechanics/Microfluidics (0-5)
- (c) Expertise on Heat and Mass Transfer (0-5)
- (d) Expertise on Numerical Simulation (CFD/FEM) (0-5)

Interview: The curricular assessments and the interviews will have weights of 50% and 50%, respectively.

Selection committee:

President of the selection committee – Doctor Tiago Sotto Mayor Moura Santos

Effective member – Professor Alexandra Maria Pinheiro da Silva Ferreira Rodrigues Pinto

Effective member – Professor Alexandre Miguel Prior Afonso

Supplementary member – Doctor Francisco José Galindo Rosales

Advertisement of final decision: The final results of the evaluation will be released to the candidates by letter. Correct address in the application is required.

Deadline for applications of the applications:

The call is open from **05/01/2019 to 20/02/2019**.

Applications must be formalized by email to recursoshumanos@fe.up.pt and to [tiagosmayor\[at\]gmail\[dot\]com](mailto:tiagosmayor[at]gmail[dot]com), should clearly state the reference **FEUP-SPRINT**, and must include Motivation letter, Curriculum Vitae (with classifications), Certificates evidencing academic degree and other documents considered relevant by the applicant.