

Research Grant Announcement - Master (BI) (M/F)

Call open for applications for a research grant (“Bolsa de Investigação, BI-Mestre) within the framework of project **PTDC/EMS-ENE/3362/2014, POCI-01-0145-FEDER-016665** “MOLDPRO -Multi-scale approaches to plastic injection molding”, funded by FEDER funds through COMPETE2020 - Programa Operacional Competitividade e Internacionalização (POCI) – and by national funds through FCT - Fundação para a Ciência e a Tecnologia, under the following conditions:

Scientific Area: Mechanical Engineering / Chemical Engineering / Polymer Engineering / Bioengineering / Physics / Applied Mathematics

Academic Requirements: Master degree in Mechanical Engineering, Chemical Engineering, Bioengineering, Physics, Applied Mathematics or related areas with experience of fluid dynamics, particularly in complex fluids and numerical methods.

Activity Outline: Perform numerical simulations to study the flow of rheologically complex fluids using existing numerical methods. Recollect data and case studies with industrial partners.

Applicable legislation: Portuguese law no 40/2004, of August 18 (“Estatuto do Bolseiro de Investigação”), with changes introduced by Decree-Law nº 202/2012, of August 27, Decree-Law nº 233/2012, of October 29, Law nº 12/2013, of January 29 and Decree-Law nº 89/2013, of July 09; Grant regulations of University of Fundação para a Ciência e a Tecnologia (<https://www.fct.pt/apoios/bolsas/regulamentos>) and Grant regulations of University of Porto (“Regulamento de Bolsas da Universidade do Porto”).

Work place: The research work will be conducted in the CEFT labs at the Mechanical Engineering Department of University of Porto, Faculty of Engineering (FEUP), under the supervision of Dr. Alexandre Miguel Prior Afonso and Dr. Fernando Manuel Tavares de Pinho. Eventually, if necessary, there will be short stays (up to about 1 month) at international partners (France) and visits to national partners (Leiria and Oliveira de Azeméis).

Grant duration: The grant will start as soon as possible and finish at the end of 6 months. The tentative start date is June 2018, or as soon as possible thereafter. The grant will be on an exclusive basis.

Stipend: The grant stipend amounts to 980,00 per month, according to the table of values of grants awarded directly by FCT, I.P. (www.fct.pt/apoios/bolsas/valores).

Selection procedure: The selection will follow a two-stage process: in the first stage, the curriculum vitae, CV, will be evaluated and the best candidates will be selected for interview in a second stage (maximum of 3 candidates). The interviews may be in person at FEUP, or by video-conference. The final evaluation will have the following weights: 60% for the CV and 40% for the interview.

CV evaluation (Maximum 20 points):

- Grades in the Master degree referred in the Academic Requirements with particular focus on the grades in Fluid Mechanics, Transport Phenomena and numerical methods (up to 10 points) or related subjects (up to 5 points);
- Experience in Computational Fluid Mechanics, computational rheology and numerical methods in Heat and fluid dynamics (up to 4 points);
- Experience in non-Newtonian Fluids mechanics, thermo-fluids and polymer injection (up to 4 points);
- Experience in programming, mathematical methods on multi-scale order reduction and separate decomposition techniques (up to 2 points).

Interview evaluation (Maximum 20 points): Only candidates with a grade of 15 or higher in the curricular evaluation will be interviewed. Interviews (either at FEUP or using video conference) to a selected number of candidates (up to 3) will be done in a second step, to assess the candidate motivation and adequacy of the qualifications for the research work.

The final evaluation will be the weighted average between the CV evaluation (60%) and the interview (40%). Only the candidates that will be interviewed will be ranked in the final list, and the candidate with the best weighted average on the final evaluation will be proposed for this research grant.

Selection committee:

- Prof. Alexandre Miguel Prior Afonso (Assistant Professor, FEUP and President of the selection committee);
- Prof. Fernando Manuel Coutinho Tavares de Pinho, Full Professor, FEUP (Effective member);

- Dr. Luís Jorge Lima Ferrás, Pos-doc, UM (Effective member);
- Prof. Manuel António Moreira Alves, Associate Professor, FEUP (Supplementary member);
- Prof. Paulo José da Silva Martins Coelho, Assistant Professor, FEUP (Supplementary member).

Advertisement of final decision: The candidates will be notified by letter about the decisions of the selection committee. Therefore, the full address indication is mandatory on the application process.

Applications and documents Required: Applications should be sent by email to recursoshumanos@fe.up.pt, with copy to aafonso@fe.up.pt, and should clearly state the reference “FEUP-MOLDPRO-CEFT-BI1-2018” and must include: application letter with a brief description of the motivation for this application; detailed Curriculum Vitae; academic degree certificate(s) (please do not send the originals). Other documentation, including reference letters, may also be sent, but are not mandatory.

Timeframe of the call: The call is open between **May 25, 2018 and June 08, 2018**. Additional information can be requested by email to aafonso@fe.up.pt

Cofinanciado por:



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