

Research Grant Announcement - Master (M/F)

Call open for applications for a research grant - Master within the framework of project “Rheologically optimized 2D-material-based inks - RheoOptimized2Dinks” with the reference POCI-01-0145-FEDER-030765 financed by Fundo Europeu de Desenvolvimento Regional (FEDER), through COMPETE2020 – Programa Operacional Competitividade e Internacionalização (POCI), and with the financial support of FCT/MCTES through National funds (PIDDAC), under the following conditions:

Scientific Area: Mechanical Engineering / Chemical Engineering / Physical Engineering/

Physics / Bioengineering

Admission requirements: MSc degree in Mechanical Engineering, Chemical Engineering, Physical Engineering, Physics or related areas with formation in Fluid Mechanics (both experimental and numerical approaches). It would be evaluated positively the experience in microfluidics, rheology, CFD, numerical optimization and computer-aided design.

Activity Outline: It is intended to develop works of electro-rheological characterization of 2D inks at macro and microscales. On the macroscale and under shear flow, a rotational rheometer adapted with an electro-rheological cell will be used; to enable electro-rheological tests in extensional flow, a turnkey device will be developed that allows the application of an electric field in line with the direction of flow during the rheological tests. The microscale and under shear flow, will use straight microchannels and optical techniques and pressure drop measurements; under extensional flow, channels with contraction / expansion or cross-slots, as well as the same techniques of characterization of the flow, will be used. For the design of the devices at the macro and microscales, will also require knowledge of techniques of computer-aided design and numerical techniques (CFD) and optimization.

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 n.º 89/2013, of 09th July (Statutes of Scientific Research Fellow); Regulation of Research Grants of Fundação para a Ciência e a Tecnologia, in force (<https://www.fct.pt/apoios/bolsas/regulamentos.phtml.pt>) and Grant regulation of University of Porto.

Work place: The work will be developed on an exclusive basis at the Research Unit Transport Phenomena Research Centre (CEFT – Centro de Estudos de Fenómenos de Transporte) of the Faculty of Engineering of the University of Porto (FEUP), under the scientific supervision of Dr. Francisco J. Galindo-Rosales and Professor Laura Campo-Deaño.

Grant

duration:



Initial duration of 6 months with predicted starting date at the end of July 2018, on exclusive basis, eventually renewable up to a maximum of 30 months, but not exceeding the end of the project.

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

The payment will be made by bank transfer.

Selection procedure:

The selection will be made in two stages: initially a selection will be made based on the curricular evaluation from which a list of the best candidates to evaluate in the second phase will be made, the weights for the final grade being 60% and 40% of the curricular evaluation and the interview, respectively.

Curricular evaluation (60%):

- a) Academic training (Master in Mechanical Engineering / Chemical Engineering / Physical Engineering / Physics / Bioengineering – up to 5 points; Master in related areas - up to 2 points);
- b) Experience in research (experimental) in the area of Rheology / Microfluidics (up to 1 year - up to 3 points, more than 1 year - up to 5 points).
- c) Research experience (numerical) CFD / Numerical optimization / Computer assisted design (up to 1 year - 3 points, more than 1 year - up to 5 points).

Only candidates with a rating of 7.5 or higher will be considered for the interview (up to 15 points) to assist the jury in selecting the candidate to be recruited (1st class). Candidates who do not pass the second phase are classified with a nil grade at the interview stage for the purpose of final classification and will not be serial.

The interviews can be done in person at FEUP, or by videoconference through the Skype application or similar.

If none of the candidates reach the minimum final mark of 7.25, the scholarship will not be assigned.

Selection committee:

President of the selection committee – Dr. Francisco José Galindo Rosales

1st Effective member – Professor Manuel António Moreira Alves

2nd Effective member – Professor Fernando Manuel Coutinho Tavares de Pinho

Supplementary member – Professor Alexandre Miguel Prior Afonso

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



Deadline for applications and form of presentation of the applications:

The call is open from **18-06-2018 to 29-06-2018**

Applications must be formalized by email to galindo@fe.up.pt and to recursoshumanos@fe.up.pt, and should clearly state the reference **FEUP-RheoOptimized2Dinks-PhD**, and must include: Motivation letter, Curriculum Vitae, Certificates evidencing academic degree and other documents considered relevant by the applicant.

