

ANNOUCEMENT

Marie Skłodowska-Curie ITN

1 Early Stage Researcher Post in multi-scale modelling and optimization of aerospace composite structures

Applications are invited to work with Dr. Albertino Arteiro, Prof. Pedro Camanho and Prof. António Torres Marques and the team of Airbus Defence and Space Germany GmbH in the framework of the **European industrial doctorate for efficient multidisciplinary design Optimization of Multifunctional Aerospace Composite Structures - "OptiMACS"**.

OptiMACS project is a European Training Network (ETN) funded by the European Union's Horizon 2020 Marie Skłodowska-Curie Actions Programme.

Successful applicants will register for a PhD programme at the Faculty of Engineering - University of Porto related to the topic "*Development of extended and advanced failure models and design criteria for aerospace composites*".

Modern aeronautical structures are increasingly made of composite layered materials. The usage of composite structures however implies a radical increase of the structural design parameters that have to be determined and optimized for an aircraft during its design process. There is therefore a genuine industrial need for developing advanced computational schemes and optimization processes, able to reliably provide the optimal design of the composite structure under consideration.

The successful applicant is expected to build on advanced computational models to predict and to optimise the multidisciplinary (static, weight, dynamic etc.) performance of complex aerospace components. These may include the effect of dynamic loading on the response of composite materials, the developments of models across different length and time scales and the study of the effect of triaxiality in fibre-dominated failure modes.

The PhD work will combine substantial theoretical and computational developments together with experimental tasks.

Position Information:

Eligibility and admissibility conditions:

- Candidates must hold a first class master's degree in mechanical engineering, aerospace engineering, applied mathematics/physics, or a relevant discipline at the date of recruitment, which is expected to be in September 2018, and have a solid background in composite structures and computational modelling;
- Excellent written and verbal communication skills are essential;
- Fluency in English (written and spoken) is required;
- At the time of the recruitment the researcher must be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree;
- Mobility Rule: At the time of the recruitment researchers shall not have resided or carried out their main activity (work, studies, etc.) in Portugal for more than 12 months in the 3 years immediately prior to the appointment (compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account);
- 'Date of Recruitment' means the first day of the employment of the researcher (i.e. contract starting date) and 'Full-Time Equivalent Research Experience' is measured from the date when the researcher obtained the degree entitling him/her to embark on a doctoral degree programme.
- (http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-msca_en.pdf).

Activities to be performed within the position:

- Successful applicants will have the opportunity to interact with researchers from around Europe and will be encouraged to promote collaborative work between the various partners of the OptiMACS project.
- An excellent opportunity to work in an international and multisectorial research environment. Candidates will spend time both in Airbus Defence and Space as well as in Faculty of Engineering - University of Porto, a leading university in the domain of composites engineering. The Airbus Defence and Space is the Europe's number one defence and space enterprise, the second largest space business worldwide and among the top ten global defence enterprises.
- Intense mobility within, as well as outside Europe is envisaged throughout the duration of the project.

- The successful candidate will also benefit from a comprehensive training programme aiming at developing her/his soft skills.

Duration:

This full-time position is offered on a fixed-term 12 months renewable contract (until the maximum of 36 months of contract).

Expected starting date:

1st September 2018

Financial conditions/benefits:

- Employment Contract (Temporary), Full-time
- € 2.771,01/month
- Mobility allowance: € 600/month
- Family allowance: € 500/month (subject to family situation)

These amounts are gross amounts, subject to taxation according to Portuguese national law. Consequently, the net salary results from deducting all compulsory (employer and employee) social security contributions as well as direct taxes (e.g. income tax) and insurance from these gross amounts.

- Legislation and regulations: Labour Code, Law no 7/2009, February 12, amended by Laws no 105/2009, September 14, 53/2011, October 14, 23/2012, June 24, 69/2013, August 30, 27/2014, May 8, 55/2014, August 25, 28/2015, April 14, 8/2016, April 1.

Applications:

Informal enquiries should be addressed to Prof. Pedro Camanho (pcamanho@fe.up.pt), Dr. Fernass Daoud (fernass.daoud@airbus.com) and Prof. António Torres Marques (marques@fe.up.pt).

The applications should be e-mailed to recursos humanos@fe.up.pt mentioning the reference **FEUP-OptiMACS** in the subject, and to Prof. Pedro Camanho pcamanho@fe.up.pt and Prof. António Torres Marques marques@fe.up.pt

Selection procedure:

- CV (40%) - to evaluate the merit of the applicant;
- Interview (40%) - to evaluate the applicant ability to develop ideas and his/her motivation;

- Motivation letter and list of publications (20%) – to evaluate the applicant’s written communication skills and his/her capability to develop interesting and high-quality research;
- Detailed information about the selection criteria is available at https://sigarra.up.pt/feup/pt/conteudos_service.conteudos_cont?pct_id=531200&pv_cod=48bw6MaoaSia

Only candidates with the best score on their CV and motivation letter will pass the first selection phase and be interviewed. If no suitable candidates are found for the position, the selection committee may decide not to fill it, and may start a new recruitment process.

Documents to be submitted with the application:

- Elements of identification document;
- A detailed CV, including list of publications and a Master thesis summary;
- A motivation letter (please refer whether or not you have applied to any other position in this project OptiMACS);
- Copies of academic transcripts and degree certificates, regarding a higher education degree, in English;
- Two recommendation letters. The person who writes the recommendation letters should know the candidate well, know the candidate long enough to write with authority, know the candidate work and the candidate educational and career goals;
- Declaration of honour regarding the residency for the last three years. You have the template of this declaration available here: https://sigarra.up.pt/feup/pt/conteudos_service.conteudos_cont?pct_id=531239&pv_cod=08maFas3Ofaa

Deadline of the recruitment process: From 08-06-2018 until 07-07-2018.

Notice for the selected candidate: If the selected candidate for the job position obtained a higher education degree abroad, and in order to sign the employment contract and enrol in the PhD Programme, he/she might be required to deliver the academic transfers and degree certificates authenticated by consular offices or embassies of Portugal located in the country where the qualification was obtained, or hold the Hague Apostille, for countries that acceded to the Hague Convention. The same applies to the translations (mandatory) of documents whose original language is not Portuguese, Spanish, French or English.