

PUBLIC NOTICE

Research Fellowship (BI) Position - R&D Unit CISE - Electromechatronic Systems Research Centre - UID/EEA/04131/2013 and UID/EEA/04131/2016

CISE - Electromechatronic Systems Research Centre is opening a position for one post-doctoral Research Fellowship (BI) within the framework of the Projects Ref. UID/EEA/04131/2013 and Ref. UID/EEA/04131/2016, under development at the R&D Unit “CISE - Electromechatronic Systems Research Centre”. The fellowship is intended to the development of research work in the scope of “Thermal Analysis of Synchronous Reluctance Machines (SynRM) Operating under Fault Conditions”. The activities will be conducted at University of Beira Interior, Covilhã, Portugal, under the following conditions:

Reference: “BI - CISE”

Scientific field: Electrical Engineering.

Admission requirements: 1) PhD degree in Electrical Engineering. 2) Strong background and orientation for the development of theoretical and experimental research work in the field of Electrical Machines, preferably with previous research experience on SynRM technology. 3) Solid research background on electromagnetic and thermal analysis of electrical machines through the Finite Element Method (FEM); previous experience using software Flux CEDRAT is highly valued. 4) Solid knowledge of written and spoken English.

Work plan: The research activities aim the evaluation of the thermal performance of SynRM drives, considering several fault scenarios. The list of tasks to carry out include:

- Full characterization of the SynRM used in the experimental tests;
- Development of a SynRM computational model using the Finite Element software tool Flux CEDRAT;
- Perform a convenient electromagnetic and thermal analysis of the SynRM model, considering a normal operation scenario;
- Development of computational models considering different SynRM fault scenarios: supply voltage unbalance (amplitude and phase unbalance), stator inter-turn short-circuits, bearing faults, etc.
- Experimental validation of the developed computational models;

- Promotion and dissemination of the research activities and major achievements through the elaboration of scientific reports.

Applicable laws and regulations:

Law N.º 40/2004, from August 18th (Research Fellowship Holder Statute - <http://www.fct.pt/apoios/bolsas/docs/FellowshipHolderStatute2013.pdf>), changed by Decree-Law N.º 202/2012, from August 28th; Regulation for Research Studentships and Fellowships 2015 - <http://www.fct.pt/apoios/bolsas/docs/RegulationFellowships.pdf>

Working place: The work plan will be developed at CISE - Electromechatronic Systems Research Centre, Laboratory of Electromechatronic Systems, Department of Electromechanical Engineering, University of Beira Interior, under the supervision of Professor Dr. António João Marques Cardoso.

Duration of the research fellowship: The research fellowship contract will last 12 months, possibly extendable for equal periods, and it is foreseen to start by January 2nd, 2018.

Value of monthly maintenance stipend: The fellowship amount corresponds to € 1.495,00, according to the table of stipends values established by FCT, I.P. in Portugal (<http://www.fct.pt/apoios/bolsas/valores.phtml.en>). The grant is paid at the end of each month by bank transfer, plus social security (voluntary social insurance, first level contributions).

Selection criteria: Candidates will be evaluated based on their *Curriculum Vitae*. The evaluation parameters, the corresponding weighting, scoreboard and final score will be included in the Jury Report, taking into account the scientific, technical and professional curriculum, and corresponding adequacy to the work plan. The evaluation will result in a numeric classification comprised between 0 and 20 (classification rounded to the decimal places). In the event that none of the Candidates satisfy the necessary requirements, this call will be closed without selection of any of the Candidates.

Composition of the selection Jury:

President: Professor Dr. António João Marques Cardoso;

Full members: Professor Dr. Carlos Manuel Pereira Cabrita and Professor Dr. Davide Sérgio Baptista da Fonseca;

Substitute member: Professor Dr. Jorge Oliveira Estima.

Form of disclosure / notification of results: The final evaluation results will be announced, through sorted list of final classification, fixed in public and visible places at the University of Beira Interior. Following the disclosure of the results, candidates will be notified via email. The candidates have a maximum period of 10 working days after that date for prior hearings.

Deadline for submission of applications and formalization of the application: The call will be open between December 12th, 2017 and December 26th, 2017.

All applications must be formalized by the candidates through the submission of an application letter, along with the following documents: *Curriculum Vitae*, list of publications, copy of the PhD degree certificate, and other documents that might be considered relevant to support the application.

Applications should be sent, preferably, to the email address cise@ubi.pt, in pdf format, until 23h59m (Lisbon Time) of December 26th, 2017 or, alternatively, sent via physical mail, to the following address:

Professor Dr. António João Marques Cardoso
Universidade da Beira Interior
Laboratório de Sistemas Electromecatrónicos
Depto. de Engenharia Electromecânica
Calçada Fonte do Lameiro
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Further clarifications may be requested using the following email address: cise@ubi.pt