CALL FOR APPLICATIONS: RESEARCHER

Job/position/grant:

Job reference:	AE2024-0361 (ATE - CPES)
	INESC TEC - Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência
Job/position/grant:	RESEARCHER
City:	Porto
Research field:	Main: ENGINEERING
	Sub: Electrical engineering

Job summary:

INESC TEC is accepting applications for 1 RESEARCHER job in the Electrical Engineering

Project:	Alliance for Energy Transition
Scientific Advisor:	Justino Miguel Rodrigues
Start Date:	2024-10-01
Location:	INESC TEC, Porto, Portugal

Job description:

Work Area: Electrical Engineering

Project overview: The work to be developed by the researcher is framed within the activities of the Laboratory of Smart Electrical Grids and Electric Vehicles at INESC TEC. The activities to be carried out, and for which the candidate's collaboration is expected, are as follows: - Design and specification of power conversion systems, considering applications related to hybrid AC/DC grids and green hydrogen production; - Design and specification of electric vehicle charging systems, considering applications related to hybrid AC/DC grids, particularly hybrid electric vehicle charging solutions (AC and DC) integrating energy storage and renewable production; - Development of digital twins of components/assets, such as photovoltaic generation systems, electric vehicle chargers, hydrogen electrolyzers, among others; - Collaboration in the application of artificial intelligence algorithms for optimizing the operation and maintenance of facilities with renewable energy production; - Production, testing, validation, and demonstration of technological solutions developed for different projects or service provisions for the industry. An opportunity is offered to join a dynamic and motivated team and to integrate into a challenging research and experimental environment, working on highly relevant and contemporary topics.

Objectives: - Design, specification, and implementation of power conversion systems (e.g., inverters, DC-DC converters, and electric vehicle chargers);
- Development and operationalization of digital twins of components/assets in energy systems with renewable production;
- Application of artificial intelligence algorithms for control and predictive maintenance of distributed energy resources in different contexts, such as PV generation systems, hybrid AC/DC grids or green hydrogen production;
- Laboratory testing and validation in a real demonstration environment.

Academic Qualifications:	Bacharel or Master electrical and computer engineering; electronics; power electronics; energy systems; other related
Minimum profile required:	- Experience in specifying, designing, and implementing power electronics systems and printed circuit boards; - Experience in simulation (e.g., MATLAB/Simulink or Modelica) and microcontroller programming for power conversion systems (e.g., Texas Instruments C2000); - Experience in implementing and developing communications, such as MODBUS (TCP/RTU), CAN, REST, among others.
Preference factors:	- Experience in developing and testing embedded systems based on Linux and programming (e.g., Python, C); - Experience in testing power electronic converters in both laboratory and field environments, using equipment for thermography, power/energy analysis, efficiency, and electromagnetic compatibility; - Fluency in English (written and spoken); - Good autonomy and teamwork capabilities.

Funding Entity:	ATE funded by IAPMEI with reference 56 Co-financed by Component 5 - Capitalization and Business Innovation, integrated in the Resilience Dimension of the Recovery and Resilience Plan within the scope of the Recovery and Resilience Mechanism (MRR) of the European Union (EU), framed in the Next Generation EU, for the period 2021 - 2026.
Type of contract:	Uncertain term contract

The hiring shall be governed by what is stipulated in the legislation in force regarding uncertain term employment contracts and by INESC TEC norms.

Selection criteria:	The selection of the candidates will be based on the following criteria, in descending order of consideration: a) Relevant Curriculum in the concerned field of this tender b) Proven experience.
Disability Incentive:	Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment. Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment. Said score may, in these cases, exceed 100 points. Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 - currently in effect. Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations.
Selection Jury:	President of the Jury: Justino Miguel Rodrigues; Member: Rui Esteves Araujo; Member: Ricardo Jorge Bessa;
Notification of results:	The results of the selection process will be sent to the interested by electronic mail.
Application period:	From 2024-08-16 to 2024-09-10
Application submission:	Electronic form filling in www.inesctec.pt in the section Work with Us