

CALL FOR APPLICATIONS: RESEARCHER

Job/position/grant:

Job reference:	AE2023-0368 (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 Power Electronics

Project:	Alliance for Energy Transition
Scientific Advisor:	Justino Miguel Rodrigues
Start Date:	2023-11-15
Location:	INESC TEC, Porto, Portugal

Job description:

Work Area: Power Electronics

Project overview: The work to be developed by the researcher is framed within the activities of the Smart Grids and Electric Vehicles Laboratory of INESC TEC, namely: a) the design and specification of power conversion systems and electric vehicles chargers, considering hybrid AC/DC networks and green hydrogen production; b) construction of digital twins of components/assets and application of artificial intelligence algorithms to optimize the operation and maintenance of facilities with renewable-based electricity generation. The work will also include production, testing, validation, and demonstration of technological solutions developed for different projects.

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

Academic Qualifications:	Bachelor's degree or Master in electrical and computer engineering, electronics, power electronics, energy systems or other related.
Minimum profile required:	Experience in the specification, design, and implementation of power electronics systems, MPPT algorithms and battery management, and printed circuit boards; Experience in simulation (e.g. MATLAB/Simulink or Modelica) and programming of real-time controllers for power conversion systems (e.g. Texas Instruments C2000); Experience in the implementation and development of MODBUS (TCP/RTU), CAN, REST, etc. communications.
Preference factors:	Experience in the development and testing of embedded systems based on Linux and programming (e.g. Python, C); Experience in testing electronic converters in laboratory and field environments with thermography equipment, power/energy analysis, efficiency and electromagnetic compatibility; Fluency in English (spoken and written).

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.
Selection Jury:	President of the Jury: Prof. Justino Miguel Rodrigues; Member: Prof. Rui Esteves Araujo; Member: Prof. Ricardo Jorge Bessa;
Notification of results:	The results of the selection process will be sent to the interested by electronic mail.
Application period:	From 2023-09-21 to 2023-10-20
Application submission:	Electronic form filling in www.inesctec.pt in the section Work with Us