INESC TEC | Research Grant (AE2025-0070)
INESC TEC

Job Title	INESC TEC | Research Grant (AE2025-0070)
Department	CPES
Institution	INESC TEC
	PORTO, , Portugal
Date Posted	Feb. 14, 2025
Application Deadline	Feb. 19, 2025
Position Start Date	Feb. 6, 2025
Job Categories	Graduate Student
Academic Field(s)	Engineering - Other
	Electrical and/or Electronics
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Job Description	

Research Opportunities

Electrical engineering

Work description

The work programme focuses on developing advanced real-time control and protection algorithms to address the evolving challenges in power systems due to the massive integration of renewable energy sources. These challenges include increased variability in system conditions and changing fault dynamics, which can impact the performance and coordination of protection schemes.

The programme will involve implementing simulation models that incorporate centralized protection approaches, combined with optimization tools and machine learning techniques to enhance protection performance. The developed algorithms and models will be tested and validated using PHIL infrastructure and real-time simulators, such as OPAL-RT, at INESC TEC's Smart Grid and Electric Vehicles Laboratory. Appropriate documentation will be prepared to detail the methodologies, testing processes, and results, ensuring transparency, reproducibility, and scalability of the developed solutions.

Minimum profile required

- Knowledge of power system protection principles and dynamics.
- Experience in modeling and simulation of power systems using tools such as Matlab/Simulink or Power Factory DigSilent.
- Basic understanding of optimization tools and machine learning techniques applied to protection systems.

Preference factors

- Experience in power system protection and renewable energy integration.
- Familiarity with real-time digital simulators (e.g., OPAL-RT) and PHIL.
- Experience in modeling and simulation tools such as Matlab/Simulink or PowerFactory DigSilent.
- Programming experience in Python, particularly for optimization and machine learning applications.
- Knowledge of centralized protection schemes.

Maintenance stipend: € 1259,64, according to the table of monthly maintenance stipend for FCT grants , paid via bank transfer. Grant holders may be awarded potential supplements, according to a

quarterly evaluation process (Articles 19, 21 and 22 of the Regulations for Grants of INESC TEC and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: "Payment of Tuition fees to grant holders".

The grant holder will benefit from health insurance, supported by INESC TEC.

Application Period

Since 06 Feb 2025 to 19 Feb 2025

Centre

Power and Energy Systems

Scientific Advisor

Clara Sofia Gouveia

What we offer

- **Multicultural and collaborative environment**
- A multicultural, international and collaborative environment that makes it easier to exchange ideas, work in networks and create synergies.
- **International projects**
- The possibility of working in international projects with some of the most important companies in the field.

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- **Mentoring**
- Mentoring with the best researchers in the fields of electrical and industrial engineering, bioengineering, information technology and physics.
- **Self Improvement**
- The possibility of participating in international conferences, workshops, seminars and vocational training.
- **Other Benefits and Perks**
- Flexible working time, health insurance, discounts in hotels, transportation, etc.
- **Informal Events**
- Annual informal events, such as the multicultural party.

For more information: Click Here

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

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