

**Predoctoral Contract Linked to the 2024 Call for "Knowledge Generation Projects" Grants
Under the State Plan for Scientific, Technical, and Innovation Research 2024–2027**

Center: Instituto de Investigación Tecnológica (IIT)

Description:

A position is offered for a predoctoral researcher to undertake a doctoral thesis regarding the detection, analysis, and mitigation of interactions between controls and devices in electric energy systems with significant penetration of generation integrated through electronic converters, at the Institute of Research in Technology (IIT) of the School of Engineering (ICAI) (c/ Rey Francisco 4, 28045 Madrid and c/ Alberto Aguilera 25) in-person.

The evaluation and selection process is convened to fill the predoctoral contract awarded in the provisional resolution of AEI on July 28, 2025, ensuring the principles of competition, publicity, and transparency. These processes may be conducted prior to the publication of the final grant resolution.

Funding:

The predoctoral contract is linked to the research project “Tools for the Detection, Analysis, and Mitigation of Electronic Converter Interactions in Power Systems,” reference PID2024-158935OB-C21, funded by MICIU/AE /10.13039/501100011033 and FEDER, EU.

The position will be funded by the European Social Fund Plus (FSE+), within the FSE+ Programme for Employment, Education, Training, and Social Economy.

Desired Start Date:

As soon as possible, from December 1, 2025. The selected candidate must join the university as determined by the AEI concession resolution, without prejudice to interruptions and extensions outlined in point 12 of this call and article 25.7 of the AEI call.

Candidate Requirements:

This call targets Spanish and international students who have completed the university studies qualifying, according to Spanish law, for doctoral or official postgraduate access. Candidates will be selected solely based on academic and/or scientific-technical track record and suitability for the research activities proposed.

1. Nationality:

Candidates must meet one of the following conditions:

- o Hold Spanish nationality.
- o Be a national of a European Union (EU) member state.
- o Regardless of nationality, be the spouse of Spaniards or EU nationals (provided not legally separated), or their dependent children under 21 or older if dependent.
- o Be covered by the scope of international treaties signed by the EU and ratified by Spain concerning free movement of workers.
- o Foreigners not covered above must pursue legal residency in Spain.

2. Academic Qualification:

- o A Spanish Bachelor's Degree in Engineering or a related field and a Master's Degree, or equivalent, always having passed at least 300 ECTS credits in total between both studies.

The following situations also apply:

- o Hold Spanish university degrees or equivalent, with at least 300 ECTS credits and accreditation of level 3 under the Spanish Higher Education Qualifications Framework.
- o Hold foreign degrees from European Higher Education Area countries, with level 7 under the European Qualification Framework, if those degrees give access to doctoral studies in the country of issuance.
- o Hold foreign degrees from outside the EHEA, if (a) the university can confirm their equivalence to the training to a Spanish official Master's, and (b) the candidate can accredit that those degrees give access to the doctoral studies in the country of issuance.

Note: Homologation in Spain of the degrees presented is not required and the admission to the doctoral studies does not mean homologation of those degrees or effect beyond doctoral study access.

- 3. The candidate must register for the doctoral programme at Universidad Pontificia Comillas** as per article 21b of Law 14/2011, before joining.
- 4. The candidate must not have previously held predoctoral contracts** that, added to the duration of this contract, exceed the legal maximum allowed by Law 14/2011. Prior contracts, if any, will be subtracted from the maximum duration allowed.

5. The candidate must not hold a PhD degree from any Spanish or foreign university.

6. The candidate must have the necessary functional capacity for the required tasks.

Experience:

No previous experience required.

Language:

Spanish or English (minimum B2 or equivalent).

Other Valuable Technical Skills:

Teamwork, autonomy and creativity, research experience, background in electrical systems analysis, power electronics, control systems, artificial intelligence tools, and software such as Matlab/Simulink, PowerFactory, and Python.

Main Tasks:

1. Develop a taxonomy of the interactions caused by electronic converters in modern electrical energy systems.
2. Determine appropriate modelling details for each identified interaction.
3. Establish optimal detection methods for converter-driven interactions in modern electrical energy systems.
4. Propose systematic procedures for designing robust control systems for generator units based on electronic power converters.

Application Instructions:

Using [this link](#), candidates must submit the following documents (in Spanish or English):

- Motivation letter
- Academic certificates: Degrees and transcripts (Bachelor's and Master's), issued by the relevant institutions. Certified copies must be provided (certification can be obtained at the original institution or a notary).
 - o Documents issued in Spain or EHEA countries (EU and EEA members) require no further legalization.

- o Documents from other countries require a certified translation and legalization of the original document and its translation:
 - i. In Hague Convention countries, legalization is through the Apostille.
 - ii. In other countries, legalization must follow diplomatic channels involving the Ministry of Education, Ministry of Foreign Affairs, and Spanish consular authorities.
- o For degrees obtained outside the EHEA, documentation proving that the degrees held give access to doctoral studies in the country of issuance is required. This must be certified by the university of origin.
- Curriculum Vitae
- Applicants participating as persons with disabilities must indicate this in the application and submit proof of a disability rating of 33% or higher.
- Two letters of recommendation

What Is Offered?

- Four-year full-time employment contract, with continuation subject to annual approval by the academic committee of the doctoral programme or graduate school at Universidad Pontificia Comillas. A post-doctoral orientation period of up to 12 months is included for those who finish their doctorate during the project's execution period, focused on professional development and specialization. For persons with disabilities, the maximum contract period is 6 years, including extensions, as per article 21c) of Law 14/2011.
- The gross salary for the first year is €31,472.55 for the year 2025.
- An allowance of €7,000.00 to cover expenses for research stays in R&D centers and doctoral tuition fees.
- At Comillas, we strive to create and maintain an environment that provides resources and support for all equally. If a disability certificate of 33% or more is held, candidates are encouraged to declare this in their application.

Benefits:

- 90% of training activity costs
- Flexible compensation and social benefits plan

- Comillas Plus: exclusive portal with over 200 commercial discounts
- Training plan
- Professional development
- Access to internal services: discounts and special terms (gym, bookstore, library, etc.)

Evaluation Process

The evaluation will follow the criteria and subcriteria described in article 12.2 of the Order of December 9, 2024.

Regulations:

- Order of December 9, 2024 approving the call for early processing in 2024 for the granting procedure for "Knowledge Generation Projects" and predoctoral researcher training actions linked to these projects, under the State Plan for Scientific, Technical, and Innovation Research 2024–2027. (<https://www.aei.gob.es/convocatorias/buscador-convocatorias/proyectos-generacion-conocimiento-2024>)