PostDoctoral

Ecole/Institution/Société:
AIT Austrian Institute Of Technology, **Austria / Vienna**

Discipline:
Structural Engineering

Type d'emploi::
Full-time

Date de publication:
2025-02-23

Personne à contacter:
If you wish to apply for this position, please specify that you saw it on AKATECH.tech

Postdoc “Power Electronics in System Operations

As Austria's largest research and technology organisation for applied research, we are dedicated to make substantial contributions to solving the major challenges of our time, climate change and digitalisation. To achieve our goals, we rely on our specific research, development and technology competencies, which are the basis of our commitment to excellence in all areas. With our open culture of innovation and our motivated, international teams, we are working to position AIT as Austria's leading research institution at the highest international level and to make a positive contribution to the economy and society.

At the Center for Energy we are committed to creating cutting-edge solutions for tomorrow's energy challenges – Our topic portfolio is based on three central systems: Public Energy Supply Systems, Industrial Processes and Cities & Built Environment.

As a PhD student for our team “Power & Renewable Gas Systems” located in Vienna, you will have the opportunity to tailor your research on the topic of “Power Electronics in System Operations”. Together with academic institutions and electricity supply companies from Austria your goal will be to develop solutions for a secure electricity supply after the energy transition has been completed, focusing on the period of 2030 and beyond.

PhD Thesis “Power Electronics in System Operations 2030+”

CENTER FOR ENERGY

You will analyse the overall effects of the increasing penetration of power electronics into the electrical energy system and the associated effects on the electrical system behavior under fault conditions.

You will use detailed grid models to research how the contribution of power electronically connected

generators to short-circuit and earth fault currents will develop in the future and to what extent this will affect operational management.

You will analyse the level and shape of the expected short-circuit currents and relate them to the behavior of the network protection devices in detailed network models.

From your results, you will derive strategies for the future improvement of the fault-clearing behavior and black start capabilities of large-scale power electronically connected generator and will show ways in which this can be achieved for the 100% renewable energy systems of the future.

Your qualifications as an Ingenious Partner:

A successfully completed university degree (MSc.) in electrical power engineering.

In-depth understanding of power grid planning and operation

Sound knowledge of control theory, linear algebra, simulation techniques, modeling and data analysis

Experience with programming languages (e.g. MATLAB, Python, R, …), is an asset

Special interest in applied research and the solution of practical problems, ideally already project experience in this context

Willingness to publish in scientific journals and present research results at international conferences

Very good English language and presentation skills are essential, German language skills are an asset

Why should you join us:

Join a diverse team, that values your unique perspective and encourages innovation

Be part of the interdisciplinary PhD-Class Programme “Power System Security 2030+ ” that brings together AIT experts, PhD students from TU Wien and specialists from the Austrian Power Grid to analyse potential issues & develop holistic solutions for future power systems – Hereby you will research on aspects of security of supply, focusing on the Austrian & European electricity grids and become an expert in this field.

Enjoy working and living in Vienna, which is claimed to be the world’s most liveable city!

What to expect:

Start date: as soon as possible

EUR 2.684,10 gross per month (14 times / year), for 30 h / week.

In addition to AIT’s excellent research infrastructure, numerous trainings in scientific work for your personal and professional development, you will benefit from you own AIT-supervisor, mentorship

opportunities, supportive colleagues and last but not least, you will be part of our AIT PhD community with around 150 international students.

At AIT we have a strong commitment to diversity and inclusion. This is why we strive to inspire women to join our teams. We welcome applications from women, who will be given preference in case of equal qualifications after taking into account all relevant facts and circumstances of all applications.

Please submit your application documents including your CV, cover letter and certificates online.

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