

## VACANCY

### Power Systems Researcher - Substation Automation (M/F)

#### The Company:

- R&D Nester comes from REN and State Grid Corporation of China's (SGCC) will to synergize core competences and create an R&D centre in order to promote and implement applied research, development, demonstration and testing in an international context, innovating for a smart energy system.
- We are a global and independent R&D centre, with a multicultural DNA and a long run strategic thinking, innovating for a smart, clean, efficient and sustainable energy system, aiming to be a prestigious R&D centre with a leading position in the intelligent management of energy systems.
- With a vibrant culture of creative and long run strategic thinking, focused on finding and developing unique opportunities to create value, we shall bring unconventional strategies that will shape the future of the energy market.
- We believe in Talent, Multiculturalism, Audacity, Agility and Flexibility.

#### Function details:

- Researcher – Substation Automation Engineer (Full-time)

R&D Nester has built a Substation Automation System (SAS) Test Platform in its Real-Time Power System Simulation Laboratory. Research projects involving smart substation secondary system are carried out based on this SAS Test Platform, which includes state of the art open-loop and hardware-in-the-loop test instruments as well as software tools, to achieve future-proof SAS architecture. Both power systems and communications network simulation and analysis tools are available on the environment so that accurate results can be obtained.

The successful candidate will benefit from a state of the art research environment and a dynamic research team.

#### Main Duties and Responsibilities:

The main objective of this position is to carry out smart substation automation related research, specifications and testing based on the Substation Automation System (SAS) Test Platform of R&D Nester. The candidate is expected to be involved in the following:

- Participation and contribution to the internal and European research and innovation projects currently ongoing within R&D Nester related to substation automation and smart substations
- Development of plans and procedures for Substation Automation System testing, including but not limited to, Protection Automation and Control (PAC) equipment, communication and time-synchronization protocols and cybersecurity related aspects
- Operation of SAS Test Platform executing testing procedures – tests include use of power system simulators, communications network simulators and testing equipment, PAC testing equipment and time synchronization sources and analyzers
- Perform SAS configuration, which includes configuration of Intelligent Electronic Devices (IEDs), time servers, communication flows between equipment, communication switches and routers, using technologies like IEC 61850, Precision Time Protocol (PTP) and Parallel Redundancy Protocol (PRP), amid others

- Use and further development of cooperative simulation system between power and communications networks (co-simulation system)

### **Qualifications:**

Candidates should have experience in power systems subjects and Protection Automation and Control (PAC) system testing. Relevant laboratory and/or field experience will be particularly welcome as well as to be open to work closely with international partners.

#### **The successful candidate should have / be:**

- Master / higher degree in electrical engineering (Power Systems), preferably with computer science knowledge and with minimum final grade of 14/20
- Familiar with development of Protection Automation and Control (PAC) system testing procedures and also with current testing equipment and software
- Knowledge on PAC system architecture, IEC 61850 standard, PTP (Precision Time Protocol)
- Knowledge on electromagnetic transient power system simulation (time domain simulation) – experience in software like EMTP-RV or PSCAD is a strong value
- Preferably, good knowledge of ICT technologies used in the substations (Ethernet and Internet Protocol traffic)
- Preferably, work experience in PAC system deployment in the field
- Preferably, laboratory operations experience
- Fluent in English.

### **Personal profile:**

- Team working
- Goals oriented
- Scientific maturity and autonomy
- Proactivity
- Flexibility and resilience
- Multi-tasking
- Written and oral proficiency
- Accountability.

### **Others:**

- Job is located in Sacavém (Portugal).

### **How to apply:**

This position is available for entry from April 2018 onwards. Potential applicants are invited to upload their CV and a covering letter highlighting their interests and suitability for the vacancy.