Research Placement KIT - SNU

Project Description – 2026/27

Current partners:

Seoul National University (South Korea)

Project Title	Applications on power-hydrogen multi energy system in power system stability enhancement
Abstract of the Project	The student will study, design, and understand deployment of grid-forming inverters for enhancing stability of inverter-based resource (IBR) dominant power systems. Approaches will be tested in realistic transmission systems modeled in real-time simulator.
Tasks	The student will: • Study the current state of the art in control of grid-forming inverters. • Choose, design and implement, together with the Power Conversion Systems Laboratory students, the approach in simulation environment (e.g., Simulink). • Develop control, operation, and deployment methodologies of multi energy systems to enhance the stability. • Summarize and present the results. The student will be supported during the stay by the faculty member and students in Seoul National University.
Learning Outcomes	• Comprehensive knowledge of architecture and control of grid-forming inverters • EMT simulation with PLECS software or PSCAD • Real-time simulation of large-scale power grid with grid-forming inverters deployed

Requirements	Electrical or computer engineering student with background in power electronics and power systems
Language Skills	Strong English Knowledge (B2-C1 English)
Software Skills	experience with power electronics and power systems analysis software. Electromagnetic transient (EMT) simulation tools recommended. Laboratory experience is a plus.
Other Skills	
Minimum Duration of the Project	Up to six months
Type of Research Project	Research project
Expected Candidate Level	☐ Undergraduate ☐ Graduate
Cooperation Preference	☐ Seoul National University
Responsible Professor	Shenghui Cui (SNU)
Supervisor / Mentor	Phone number: Email: cuish@snu.ac.kr
Faculty / Institute / Company Name	Seoul National University
Address	

Timeline Information

	Placement at SNU	**Placement at KIT**
Duration	6 months	6 months
Start / end	September 2026-February 2027	October 2026 – March 2027
Application Deadline	**15 May 2026**	**15 May 2026**

Application procedure for SNU and KIT students:

Please send motivation letter, CV and current transcript (if applicable degree certificates) to:

- For students coming to KIT: Prof. Dr.-Ing. Giovanni De Carne giovanni.carne@kit.edu
- For students coming to SNU: Prof. Dr.-Ing. Shenghui Cui cuish@snu.ac.kr

Information for KIT students:

Students selected for the research placement at SNU should apply immediately for Erasmus+ Traineeship (Travel compensation and monthly scholarship) funding:

https://www.h-ka.de/koor/erasmus-praktikum
Please note: funds are limited, apply as soon as possible!

Information for SNU students:
Students selected for the research placement at KIT need to complete their application for KIT as soon as possible: https://www.intl.kit.edu/istudies/3175.php
Please apply for a study visa before departure and complete your enrolment at KIT before arrival in Germany.