



**Seminar: Division of Nuclear Energy and Environmental Studies (UZ3)**  
**Department of Complex Systems (DUZ)**  
Tuesday: **04.03.2025, 11:30 AM**

**Hybrid seminar: room 172, building 39 (Cyfronet, 3rd floor)**

Online broadcast: <https://www.gotomeet.me/NCBJmeetings/uz3-and-phd4gen-seminars>

**Speaker: online**

**Mikołaj Brzeziński & Rafał Stoga**  
**KINGS**

**Insights into Graduate Research at KINGS University in South Korea**

**Abstract:**

KEPCO International Nuclear Graduate School (KINGS) is a South Korean university established in 2012 to educate international professionals in the field of nuclear energy. From the beginning, the university's primary goal has been to create a welcoming learning environment for students from Korea and around the world. For several years, KINGS has also cooperated with several Polish universities through student exchange programs, faculty collaborations, and the organization of summer schools on nuclear energy in Korea. During the seminar, current KINGS students, Mikołaj Brzeziński and Rafał Stoga will provide insights into student life and details about the university, as well as outline their master's thesis research.

After the introduction to KINGS, Mikołaj Brzeziński will discuss the details of his master's thesis, which focuses on the application of Genetic Algorithms to optimize the fuel loading pattern for the Korean i-SMR reactor. He will also discuss the nuclear design codes utilized in his research, including CASMO-3/MICBURN-3 for microscopic cross-section generation and MASTER-3.0 for core analysis.

Subsequently, Rafał Stoga will discuss his master's thesis, focusing on the external coupling of the South Korean thermal-hydraulic system code MARS with the pin-by-pin core simulator SPHINCS, developed at Seoul National University. Additionally, a main steam line break accident will be modeled to validate the coupled codes.

You are cordially invited,  
Tomasz Kwiatkowski, Mariusz Dąbrowski

**Bio:**

**Rafal Stoga and Mokolaj Brzeziński** – are master's students who began their graduate studies in 2024 in the Nuclear Power Plant Design and Safety program at KEPCO International Nuclear Graduate School (KINGS). In 2023, they completed their undergraduate studies in Power Engineering at the Faculty of Environmental Engineering and Energy at the Poznań University of Technology, where they conducted their bachelor's theses under the supervision of Jakub Sierchuła, focusing on neutronic analysis using the Monte Carlo code. Between 2021 and 2023, they served on the board of the Interfaculty Student Science Club “Polonium”. In 2022, they participated in the first edition of internships offered by Westinghouse Electric Company in the United States. In recent years, they attended numerous conferences, including the Saudi International Conference on Nuclear Power Engineering 2023 (SCOPE), the European Nuclear Young Generation Forum 2023 (ENYGF 2023), and Korean Nuclear and High-Tech Day 2022. They also participated in workshops organized by institutions such as the Joint Institute for Nuclear Research in Dubna (Russian Federation), the Heavy Ion Laboratory (Warsaw), Czech Technical University in Prague (Czech Republic), and the Jožef Stefan Institute (Slovenia).