



**Seminarium Zakładu Energetyki Jądrowej i Analiz Środowiska (UZ3)  
Departament Badań Układów Złożonych (DUZ)**

Wtorek: **20.12.2022**

**Wyjątkowo: 18:00**

transmisja online:

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

**dr inż. Izabela Gutowska**

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**Integral effects testing of the beyond design basis accidents in VHTR**

**Abstract:**

Among the Next Generation Nuclear Plant (NGNP) designs, the modular High-Temperature Gas-cooled Reactors (HTGRs) are very attractive, due to their inherent safety features, high power conversion efficiency, and potential of providing high-temperature process heat. The performance of HTGR systems during accident scenarios is a key consideration in the design, safety analysis, and licensing of these reactors since it is during these events that peak core temperatures and vessel wall temperatures can be reached. A key part of the HTGRs deployment in the US is the development of an integral test facility (IET) that enables testing of accident scenarios and supports gas cooled reactors thermal-hydraulic codes verification and validation. This talk will scope the modeling efforts, design, test matrix, and instrumentation of the OSU High Temperature Test Facility (HTTF). Also, the HTTF benchmark on the Lower Plenum Mixing, Pressurized Conduction Cooldown (PCC) and DCC (Depressurized Conduction Cooldown) will be outlined.

Serdecznie zapraszamy  
Mariusz Dąbrowski, Tomasz Kwiatkowski

<http://www.phd4gen.pl>

**Biographical Note:**

**Dr. Izabela Gutowska** is an Assistant Professor at the Oregon State University (OSU) School of Nuclear Science and Engineering. Before joining OSU in 2016, she worked at GE EDC in Warsaw as an Advanced CFD Engineer. She obtained her master's degree in Nuclear Engineering from the Warsaw University of Technology (WUT) and received a Fulbright Graduate Student Award to pursue her Doctorate in Nuclear Engineering, which she received from OSU in 2015. Dr. Gutowska participated in several EU-funded projects at WUT, including TERMET and SARWUT projects. Her main expertise scopes heat transfer, thermal design,

computational fluid dynamics, nuclear safety analyses, scaling studies, SET/IET test facility design. She is currently a Principal Investigator on DOE NEUP project: Progression of High Resolution SET and IET Benchmarks on PCC and DCC events in HTGRs and on the INL project: Supporting Design and Analysis of the In-Reactor Advanced Test Reactor – Boiling Test Loop, and a collaborator on the EU GEMINI 4.0 project. She also collaborated with Kairos Power on the design development of KP-SET and with NuScale on the CFD Analysis of a Liquid Metal-hydride Cooled Microreactor. Gutowska's Research Group is also working on CFD-based Digital Twinning for Smart Virtual Sensing in Advanced Reactors Systems. Dr. Gutowska is certified in CAD/CAM/CAE systems (SIEMENS CAD I Certificate-PLM Software), Lean Six Sigma (GE Green Belt), and Nuclear Knowledge Management (Joint ICTP-IAEA School). She is a member of Women in Nuclear, Society of Women Engineers, and American Nuclear Society (Program Committee Vice-Chair).