

## Nuclear Engineering Seminar

### Dr. Kyoung-Ho Kang,

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**Wednesday, September 25, 2024**

**3:30 pm | MATH 175**

Thermal-Hydraulics R&D of KAERI

#### Abstract

The Reactor System Safety Research division is dedicated to ensuring the highest level of nuclear safety and disseminating critical knowledge through the development of innovative technologies in thermal-hydraulic safety and the integration of related technologies. In order to prevent multi-failure accidents and enhance the defense-in-depth capabilities of reactor systems, we developed and validated a prototype of an integrated analysis platform linking the core, reactor coolant system, and containment, and established a comprehensive experimental database. Additionally, we launched a thermal-hydraulic safety validation project to evaluate and verify the safety of innovative small modular reactor (i-SMR) and produce safety analysis data supporting for licensing process. The conceptual design of major test facilities including an integral effect test and two separate effect tests are in progress. Furthermore, to secure the competitiveness of the domestic nuclear industry, we conducted research on the core flow distribution test of APR1000, IBLOCA safety analysis, and the development of thermocouples for reactor coolant level monitoring. As an international cooperation, we have been operating the OECD/NEA ATLAS international joint project since 2014 with an aim of safety evaluation of light water reactor and validation and improvement of safety analysis codes. 19 organizations from 11 countries including US-NRC participate in the third phase of ATLAS project. The fourth phase of ATLAS project will be started from January 2025.



Dr. Kyoung-Ho Kang is working as a principal researcher at KAERI since 1995. His major research interests include thermal hydraulic integral effect testing and system-scale safety analysis for pressurized water reactor. He was also involved in the experimental program for verification of new safety systems implemented to the advanced light water reactors such as APR1400, APR+ and iPOWER. Since 2014, he has been playing a leading role in coordinating the OECD/NEA ATLAS international joint project with an aim of enhancing safety analysis technology and resolving safety issues. Dr. Kang is currently working as a director of reactor system research division at KAERI and is fully responsible for the thermal-hydraulic safety R&D. He also joined the faculty member of the department of advanced nuclear system engineering of UST from 2015.