香港城市大學
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Nuclear reactor severe accident visualization: safety-oriented project development based on DesignEP simulation platform

Project Number: 6000581

Principal Investigator: Dr. Alice HU

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Abstract:

The project is to apply multiphysics simulation to enhance the teaching of JC4231- Nuclear reactor physics. Aiming to give an overview of the physics of nuclear reactors and their behavior. It also introduces how chain reaction can be used to induce controlled rate of fission in fissile materials for energy generation in reactors. Finally, it describes the factors that affect the design and behavior of nuclear reactors. The application severe accident code package MAAP coupling with graphical interface DesignEP will enable the students to visualize the nuclear reactor and observe its dynamic behavior and thermal characteristics. Through the visualization of a nuclear reactor core inside the pressure vessel, students would learn how to relate mathematical formulas of nuclear reactor theory to the real world in order to develop a deeper understanding of the reactor physics.