Geometry Design and Transient Simulation of a Heat Pipe Micro Reactor

In recent years, micro-reactor concepts have attracted increasing attention in the nuclear industry due to the market demand for flexible, reliable, and sustainable power and heat on-site for industrial or federal installations or remote communities. Micro-reactor AGile Non-nuclear Experimental Test-bed (MAGNET) is at Idaho National Laboratory (INL) with an initial focus on the thermal and structural performance of heat pipe cooled micro-reactors. System Analysis Module (SAM) code is a multi-dimensional modern software tool provided by Argonne National Laboratory (ANL). This webinar will review the designs of heat-pipe micro reactors, steady-state and transient simulation of MAGNET by SAM, to explore the performance limit by heat transfer and temperature distribution.

Jun Wang, Ph.D., is an associate scientist of Nuclear Engineering and Engineering Physics at the University of Wisconsin-Madison. Wang gets his Ph.D. from Xi’an Jiaotong University. His research interests include the advanced numerical analysis of nuclear safety and reliability for various reactor designs. Wang is leading a few projects on the heat pipe micro reactor, high temperature gas cooled reactor transient analysis, and uncertainty quantification by artificial intelligence. Wang also serve the ANS thermal hydraulics committee, and the journal Progress in Nuclear Energy, Annals of Energy Research as editorial board.

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