

Title: Advance Reactor Concepts: Advance High Temperature Reactor (AHTR)

Abstract for the talk

For the past few years various advance reactor concepts are being developed to meet the energy demand and provide process heat for industrial applications. The talk will focus on Advance High Temperature Reactor (AHTR) and mainly focus on INL's work for the development of AHTR. An evaluation of viable secondary heat exchanger concepts is presented based on thermal design study using KF-ZrF_4 as the secondary coolant. Along with the parameters such as potential materials, system configuration, coolant properties, hot corrosion and discussion on challenges associated with steam power cycle integration with the molten salt reactor. The reference reactor design and configuration is a 3,400 MW(t) utilizing Rankine subcritical or supercritical cycles for power production.

Bio of the Author

Dr. Piyush Sabharwall is a staff research scientist working in Nuclear Science and Technology Division at the Idaho National Laboratory (INL). Dr. Sabharwall has expertise in heat transfer, fluid mechanics, thermal design, thermodynamics, and nuclear safety analyses. He obtained his Masters in Nuclear Engineering from Oregon State University and was recipient of INL Energy Fellowship Award to further pursue his Doctorate in Nuclear Engineering at University of Idaho. In 2011 he received the New Faces of Engineering ASME National Award.