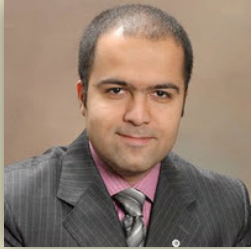


Colloquia



Maziar Rostamian

Graduate Research Assistant

Department of Mechanical Engineering,
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Research: Rostamian's doctorate research, under the supervision of Dr. Tokuhiro, is on the computational modeling and simulation of graphite moderators in frictional contacts as anticipated in a pebble bed reactor. The potential dust generation due to frictional contact at the surface of pebbles and the ensuing entrainment and transport of graphite particulates and absorbed fission products are a safety concern at elevated temperatures under accident scenarios such as air ingress in the high temperature gas-cooled reactor. This research project, which is under the Nuclear Engineering University Program, is funded by the Department of Energy of the United States. In this NEUP project, an experimental model is designed to estimate the quantity of the nuclear grade graphite dust produced from a typical anticipated configuration. This model is accompanied by a set of computational simulations using commercial Finite-Element-based Software ABAQUS and COMSOL Multi-physics.

The computational simulations, which are conducted by Rostamian, have been used to perform an initial prediction of the graphite dust in pebble bed reactors. Dr. Cogliati and Dr. Abderrafi from INL have provided input, information and precious consultation to the advancement of this project.

Currently, a lift-off model representing the entrainment of the dust particles into the coolant flow is under investigation.

Speaker Bio: Maziar Rostamian has a BS and MS in Mechanical Engineering, heat transfer and fluids subfield, from Mazandaran University in northern Iran. He is now a doctorate student at the University of Idaho, Department of Mechanical Engineering, under the supervision of Dr. Tokuhiro. His background is in modern and advanced analytical methods in mechanical engineering. His current research is in computational solid and fluid mechanics involving interactions between the two media.

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Wednesday • 4 p.m. • CAES Auditorium