

Evaluation of Nationwide Energy Savings Potential of Variable Refrigerant Flow (VRF) Systems using ORNL's Flexible Research Platform

featuring

Dr. Piljae Im

**Thursday, July 21, 2016**

3:00–4:00 PM

Bldg 4500N, Weinberg Auditorium

Room 1126

Abstract

Multi-split variable refrigerant flow (VRF) heating, ventilation, and air-conditioning (HVAC) systems have been in use in Europe and Asia for 30 years, but they have yet to gain wide acceptance in the US market. Compared with traditional HVAC systems, VRFs offer easier installation and maintenance, more economical operation, and individual zone control, but awareness of the systems will have to be raised, and issues of cost and code compliance will need to be addressed before VRFs gain wider acceptance in the United States. In this seminar, the speaker (1) presents research conducted on ORNL's two-story flexible research platform to evaluate the energy performance of VRF systems and (2) describes how the results of the research was scaled up and dynamic building-energy models were used to evaluate the nationwide energy savings potential of VRFs.



Dr. Piljae Im

Dr. Im joined Oak Ridge National Laboratory in 2009. He is a member of the R&D staff in the Whole-Building and Community Integration Group, where he is leading several projects that use ORNL's Flexible Research Platform, a small office building in which occupancy can be emulated. Projects include an evaluation of the performance of a variable refrigerant flow system compared with the performance of conventional HVAC systems and validation of EnergyPlus, which is a flagship building energy modeling tool developed by the Department of Energy. Dr. Im is a graduate from Texas A&M University with MS and PhD degrees in architecture.