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**Thermal Conductivity Modeling of U-Mo/Al Dispersion Fuel**

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**ABSTRACT**

Thermal conductivity data of U-Mo/Al dispersion fuel meat measured by KAERI was reanalyzed. The measurement errors caused chiefly by the irregularity in the U-Mo particle content in the samples were removed. Using this dataset, an analytical model was obtained by expanding the Bruggeman model. Specifically, the newly developed model modified the Bruggeman model by including thermal resistances at the interfaces between the U-Mo particles and Al matrix and the grain boundaries in the Al matrix. The interfacial resistances are expressed as functions of temperature and U-Mo particle size or Al grain size that were empirically obtained by data fitting to the measured data. The new model was validated against an independently measured dataset by ANL. The new model can be further expanded to assess the effects of a silicon addition in the matrix and a coating on the U-Mo.