Analysis of the effect of interaction layer on thermo-physical properties of U-Mo/Al dispersion fuel

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ABSTRACT

This paper describes the analysis results of the thermo-physical properties of heat-treated U-7Mo/Al dispersion fuel where interaction layers between U-Mo and Al were formed. The thermal diffusivity, heat capacity, and density of heat-treated samples were measured to investigate the effects of interaction layer (IL). The measured data were expressed as functions of temperature and U-Mo and IL volume fractions. The thermal diffusivity and density decreased while the heat capacity did not change distinctively after the formation of IL. Using the measured data, the thermal conductivity and density of IL were evaluated.