

Dependence of thermal diffusivity on particle size in Au nano-fluid

ABSTRACT

In this paper we report the measurement of thermal diffusivity of gold nanofluid prepared by γ -radiation with various particle sizes ranging from 7.0 nm to 18.7 nm. The thermal lens technique is used to measure thermal diffusivity of gold nano-fluid. In this technique a diode laser (wavelength 514 nm, power 80 mW) and He-Ne laser were used as the excitation source and probe beam respectively. Experimental results showed that thermal diffusivity values of nanofluid increase when the particle size increase.

Keyword: Thermal diffusivity; Au; Nano-fluid; Particle size