

## **Thermal diffusivity measurement of copper nanofluid using pulsed laser thermal lens technique.**

### **Abstract**

The pulsed laser thermal lens technique was used to study the thermal diffusivity of fluids containing copper nanoparticles (Cu-NPs) prepared by  $\gamma$ -irradiation method. The samples were prepared for the different concentrations of Cu precursor at 20 KGy dose. A Q-switched Nd-YAG pulsed laser of wavelength 532 nm was used as an excitation source and He-Ne laser was used as a probe beam in the present thermal lens experiment. It was found that the thermal diffusivity of the solution depends on the density of Cu-NPs.

**Keyword:** Copper nanoparticles; Thermal lens; Thermal diffusivity; Pulsed laser.