

## **Investigation on nonlinear-optical properties of palm oil/silver nanoparticles.**

### **Abstract**

The study carried out using continuous wave diode pumped solid state laser with wavelength of 405 nm and power of 50 mW. The strong spatial selfphase modulation patterns were observed that suggest the palm oil/Ag-NPs have a relatively large nonlinear refractive index. The obtained values of nonlinear refractive index were increased with the increase of volume fractions. The observed experimental patterns were also theoretically modeled which are in good agreement with experimental results.

**Keyword:** Nonlinear optical properties; Silver nanoparticle; Palm oil.