

## **Spectral dependence of nonlinear optical absorption of silica glass with copper nanoparticles**

Golubev A., Nikitin S., Smirnov M., Stepanov A.  
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### **Abstract**

The nonlinear optical properties of silica glass with copper nanoparticles synthesized by ion implantation were investigated by z-scan method in nanosecond time scale. The reverse saturation absorption (RSA) at the wavelength range of 450-540 nm and saturation absorption (SA) at 550-585 nm were observed. It was supposed that the two-photon electron absorption from bound of d-states determined the RSA effect and the SA is due to saturation of plasmon excitation.

<http://dx.doi.org/10.1088/1742-6596/324/1/012038>

---