

The goal of this work was to observe third harmonic generation in semiconductor nanocrystals and to determine the efficiency of this nonlinear-optical phenomenon. Samples used for examination included silicon, diamond and zinc oxide nanocrystals. Using the measured efficiency of third harmonic generation and the parameters of infrared laser pulses used for the generation, we were able to determine the approximate value of the third order nonlinear susceptibility of the materials used in this study. Besides third harmonic generation we observed high harmonic generation in zinc oxide samples up to the ninth order.