

## **SENSITIZED ANTI-STOKES LUMINESCENCE OF IONIC-COVALENT CRYSTALS WITH ADSORBED MOLECULES OF ORGANIC DYES AND LOW-ATOMIC SILVER CLUSTERS**

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The phenomenon of anti-Stokes luminescence appearing in the heterogeneous systems on the basis of  $\text{AgCl}_{0.95}\text{I}_{0.05}$ ,  $\text{ZnS}$ ,  $\text{Zn}_{0.60}\text{Cd}_{0.40}\text{S}$  micro crystals with adsorbed molecules of organic dyes, their aggregates and also silver atoms and low-atomic silver clusters has been studied. It is shown, that the formation of silver particles of atomic-molecular dispersion as well as adsorbed molecules of organic dyes on the surface of  $\text{AgCl}_{0.95}\text{I}_{0.05}$ ,  $\text{ZnS}$ ,  $\text{Zn}_{0.60}\text{Cd}_{0.40}\text{S}$  micro crystals causes intensive anti-Stokes luminescence. This luminescence is observed at the temperature 77 K and the excitation of optical radiation from the spectral range of 600- 750 nm and stream density  $10^{13}$ - $10^{15}$  quantum· $\text{cm}^{-2}$ · $\text{s}^{-1}$ . The main regularities in the changes of excitation spectra of sensitized anti-Stokes luminescence in the mentioned crystals systems at the creation on their surface of adsorbed silver atoms and low-atomic silver clusters in particular concentrations have been found. The mechanisms of excitation of such luminescence based on consequent transfer of electrons or electronic excitation energy from the molecule of a dye to the surface impurity silver centre have been suggested.