

# **Optical and photoconductivity spectra of novel $\text{Ag}_2\text{In}_2\text{SiS}_6$ and $\text{Ag}_2\text{In}_2\text{GeS}_6$ chalcogenide crystals**

## **Abstract**

Complex spectral studies of near-band gap and photoconductive spectra for novel  $\text{Ag}_2\text{In}_2\text{SiS}_6$  and  $\text{Ag}_2\text{In}_2\text{GeS}_6$  single crystals are presented. The spectral dependences of photoconductivity clearly show an existence of spectral maxima within the 450 nm-540 nm and 780 nm-920 nm. The fundamental absorption edge is analyzed by Urbach rule. The origin of the spectral photoconductivity spectral maxima is discussed. Temperature dependences of the spectra were done. The obtained spectral features allow to propose the titled crystals as photosensors. An analysis of the absorption and photoconductivity spectra is given within a framework of oversimplified spectroscopic model of complex chalcogenide crystals.