

## S1-P.6

# Optical Activity in Mn Doped As<sub>2</sub>S<sub>3</sub> Glasses

V.V. Zalamai<sup>1</sup>, A.V. Tiron<sup>1</sup>, M.S. Iovu<sup>2</sup>, and N.N. Syrbu<sup>1</sup>

<sup>1</sup>Technical University of Moldova, Chisinau, Republic of Moldova

<sup>2</sup>Institute of Applied Physics, Chisinau, Republic of Moldova

Spectral dependences of transmittance (T) and wavelength modulated transmittance ( $\Delta T/\Delta\lambda$ ) of As<sub>2</sub>S<sub>3</sub> layers doped by manganese (Mn) of different concentrations (0 - 0.5%) were investigated at temperatures from 10 K to 300 K. Photoluminescence bands at 1.762 eV, 2.107 eV and 2.282 eV due to transition  $^4A_{2g}(^4F) \rightarrow ^4E_g(^2G)$ ,  $^4T_{1g}(^4G) \rightarrow ^6A_{1g}(^4F)$  and  $^4T_{2g} \rightarrow ^6A_{1g}$  of Mn ions, respectively were observed at argon laser excitation. On the luminescence spectra the absorption bands of electron transitions  $^6A_{1g}(^4F) \rightarrow ^4T_{1g}(^4G)$  were recognized. The magnitude of refractive index (n) of Mn (0.1% and 0.5%) ions doped As<sub>2</sub>S<sub>3</sub> layers in low-energy range (1.6-1.9 eV) does not change at temperature decreasing from 300 to 10 K. The spectral dependences of refractive indices of As<sub>2</sub>S<sub>3</sub> samples doped with Mn ions of different concentrations (0.1% and 0.5%) did not have any features.