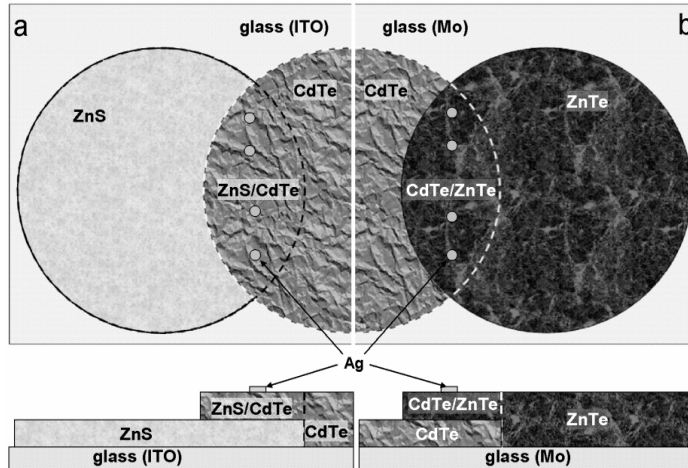




RESEARCH LABORATORY «OPTOELECTRONICS AND SOLAR POWER ENGINEERING»



Mono- and polycrystalline compounds from A_2B_6 , A_4B_6 group and some other materials has attracted an increased interest can be used as an anti-reflective, absorptive and window layers of photovoltaic unijunction and tandem solar cells (SC), base layers of photodetectors and hard radiation detectors, injection photodetectors, light-emitting diodes, gas sensors, pyro- and piezoelectronic devices etc.

Direction of laboratory scientific activities is associated with the researchers of structural, electrical and optical compound properties of A_2B_6 (CdTe, CdSe, ZnO, ZnTe, ZnSe, ZnS), A_4B_6 (SnS, SnSe) and solid solutions based on them (CdMnTe, CdMnS, ZnCdTe); studying of defect formation process; properties of thin film heterojunctions based on these compounds. Great attention is given to the study of a new class of four-components compounds such as CZTS (Se) (Cu_2ZnSnS_4 and $Cu_2ZnSnSe_4$) which is perspective for use in solar energy as absorbing layers of thin-film solar cell for widespread use.

Research laboratory proposes the technology of the device structures (solar cells, optical detectors, and hard radiation detector gases) development based on heterojunctions and semiconductor-metal structures.

The main advantages of proposed technology - reduce costs by replacing single-crystal silicon.