

PHOTOELECTRIC PROPERTIES OF VERTICAL CIGS/CdS HETEROSTRUCTURES

Photosensitive properties of heterostructures based on CuInGaSe₂ (CIGS) for solar cells were studied. Vertical structures Mo/CIGS/CdS with Indium Tin Oxide (ITO) as a transparent top electrode were grown on glass substrates. Raman spectroscopy manifested modes typical for CIGS within 170-270 cm⁻¹. The photovoltage spectroscopy revealed CIGS as anode and CdS as cathode. The heterostructure was found to be photosensitive with the onset ~ 1.0 eV and allowed to estimate the optical bandgap of the CIGS film about 1.10 eV at room temperature and 1.12 eV at 80 K. The barrier height for charge carriers was estimated from capacitance-voltage profile to be about 0.65 eV. The current-voltage characteristic was found to be varistor-like, maybe due to an opposite barrier at the CdS/ITO interface.

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Type of presence

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