

SOLID SOLUTIONS
OF THE $\text{AgCd}_2\text{GaS}_4$ — $\text{AgCd}_2\text{GaSe}_4$ SYSTEM, THEIR
ELECTRIC AND PHOTOELECTRIC PROPERTIES

*G.E. Davydyuk, I.D. Olekseyuk, O.V. Parasyuk,
S.V. Voronyuk, O.A. Husak, V.I. Pekhnyo¹*

Lesya Ukrainka Volyn' State University
(13, Volya Ave., Lutsk 43009, Ukraine;
e-mail: serge@lab.univer.lutsk.ua),

¹V.I.Vernadsky Institute of General and Inorganic
Chemistry, Nat. Acad. Sci. of Ukraine
(32/34, Academician Palladin Ave.,
Kyiv 03680, Ukraine)

S u m m a r y

Solid solutions of the $\text{AgCd}_2\text{GaS}_4$ — $\text{AgCd}_2\text{GaSe}_4$ system are photosensitive materials with a photoconductivity maximum in a spectral region of 510—810 nm, the position of which depends on the solution composition. By physical properties, those solid solutions are similar to their electron analogs, CdS—CdSe alloys. In specimens with 30—50 mol.% of $\text{AgCd}_2\text{GaSe}_4$, similarly to binary semiconductor alloys, an abrupt change of the energy position of centers, which are responsible for the optical activity of specimens, is observed. We suggest that those centers are Ag_{Cd}^- and Ga_{Cd}^+ , whose parameters depend on the nature of anion environment.