OPTICAL PROPERTIES OF CdS FILMS OBTAINED BY HOT-WALL TECHNIQUE

G.S. Khrypunov[1], *D.A. Kudiy*[1], *N.I. Klyui*[2], *L.V. Avksentyeva*[2], *A.N. Klyui*[3]

[1]National Technical University
"Kharkiv Polytechnical Institute"
(*21, Frunze Str., Kharkiv 61002, Ukraine*),
[2]V. Lashkaryov Institute of Semiconductor Physics,
Nat. Acad. of Sci. of Ukraine
(*41, Prosp. Nauky, Kyiv 03680, Ukraine;*
e-mail: klyui@isp.kiev.ua),
[3]Taras Shevchenko National University of Kyiv,
Faculty of Physics
(*6, Academician Glushkov Ave., Kyiv 03022, Ukraine*)

S u m m a r y

The structure of CdS films deposited with the use of the hot-wall technique has been studied. The growth of a film thickness was found to result in a reduction of mechanical stresses in the films, with compressive and tensile macrostresses being observed in thin and thick films, respectively. The increase of a CdS film thickness was found to be accompanied by an increase in the energy gap width E_g, which is associated with an extension of the coherent scattering region. It is established that CdS films about 0.3 μm in thickness annealed in air are expedient to be used as wide-gap "windows", while fabricating the efficient solar cells based on CdS/CdTe heterosystems.