

INFLUENCE OF ABSORPTION SATURATION
ON POLARIZATION OF LIGHT PROPAGATING
IN DICHROIC SINGLE CRYSTALS

M.R. Kulish, V.P. Kunets, M.P. Lisitsa, N.I. Malysk

Institute of Semiconductor Physics,
Nat. Acad. Sci. of Ukraine
(45, Nauky Prosp., Kyiv 03028, Ukraine)

S u m m a r y

Relations that describe the polarization state of a light propagating in a uniaxial dichroic single crystal have been analyzed in the case of weak absorption, when $\text{Re } \varepsilon \gg \text{Im } \varepsilon$, ε being the relative dielectric permittivity of the crystal. It has been found that those relations allow the state of light polarization to be predicted in the validity range of the linear optics laws, as well as provided that saturation and two-photon absorption are in operation. It has also been shown that those relations quantitatively describe the experimentally established regularities in a variation of such parameters of the light polarization ellipse as the angle of rotation of its major semiaxis, ellipticity, focal parameter, and eccentricity.