

INFLUENCE OF PEKAR ADDITIONAL LIGHT
WAVES ON OPTICAL SPECTRA OF CRYSTALS
(REVIEW)

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S u m m a r y

Experimental works, which confirm the existence of additional light waves (ALWs) in the exciton resonance range predicted by S.I. Pekar in 1957, have been reviewed. The scope of the review includes works concerning the measurements of absorption, reflection, and scattering spectra and the spectra of phase changes of a reflected light wave, as well as the measurements of the refractive index dispersion. The works concerning the spatial separation of Pekar waves in thin wedge-shaped crystals have been considered in detail. A transition to classical single-wave crystal optics, which takes place after achieving some critical value of the exciton damping constant, has been traced. The applicability criteria of classical Kramers–Kronig relations (KKRs) and Fresnel formulas for the determination of optical characteristics of crystals have been presented. The characteristic features of the approximation of reflection spectra under different additional threshold conditions (ABCs) have been analyzed, as well as the influence of surface treatment on the profiles of exciton reflection spectra.