THE INFLUENCE OF THE UNIAXIAL PRESSURES ON BIREFRINGENCE OF $(NH_4)_2SO_4$ CRYSTALS

V.Yo. Stadnyk, M.O. Romanyuk, M.R. Tuzyak, V.Yu. Kurlyak

I. Franko L'viv National University
(*8, Kyryl i Mefodii Str., L'viv 79005, Ukraine; e-mail: vasylstadnyk@ukr.net*)

S u m m a r y

We have studied the influence of the uniaxial mechanical load $\sigma_m \leq 200$ bar on the spectral (300–800 nm) and temperature (300–77 K) dependences of the birefringence Δn_i and the phase transition point of crystals $(NH_4)_2SO_4$. It is established that the uniaxial pressure does not change the character, but only the value of the dispersion $d\Delta n_i/d\lambda$. It is revealed that the simultaneous action of the pressures σ_x and σ_y leads to the appearance of a uniaxial isotropic state in $(NH_4)_2SO_4$ crystal. We have analyzed the spectral and temperature changes of the piezooptical constants. A significant baric shift of the ferroelectric phase transition point is observed.