APPLICATION OF THE METHOD OF PROJECTIVE REPRESENTATIONS TO THE ANALYSIS OF SECOND-ORDER RAMAN SCATTERING SPECTRA IN ENANTIOMORPHOUS TETRAGONAL CRYSTALS

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S u m m a r y

We propose a method to determine the selection rules for two-phonon transitions and zero-slope points in the Brillouin zone with the use of irreducible projective representations. The appropriate calculations are carried out for points Γ, Z, A, M, X, and R of the first Brillouin zone of tetragonal enantiomorphous crystals that are described by the space symmetry groups $P4_12_12$ and $P4_32_12$. The results of these calculations are applied to the analysis of the spectra of two-phonon Raman scattering (RS) in the crystals of zinc and cadmium diphosphides, α-ZnP_2 and CdP_2, and paratellurite TeO_2.