



Raman scattering in right angle configuration on $\text{Cu}_2\text{ZnSiSe}_4$ single crystals

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Abstract

Polarized Raman scattering and resonance Raman scattering spectra of $\text{Cu}_2\text{ZnSiSe}_4$ crystals measured at temperature 300 and 10 K were investigated. Nine vibrational modes of A_2 symmetry, seven modes of B_2 symmetry and nine modes of B_1 symmetry were determined in Raman spectra taken at right angle configuration from the (2 1 0) crystal plane. A resonance Raman scattering with participation of 2LO, 3LO and more phonons was observed at photon energies higher than the ground state of exciton transition at low temperature.