

Additional Raman Scattering Mechanism due to Transverse Polar Modes

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Abstract: Longitudinal polar modes generate a macroscopic electric field in piezoelectric crystals and cause an additional mechanism of Raman scattering. The classical theory holds that transverse polar modes cannot produce such an additional mechanism. Our quantum theory shows that there is an additional Raman scattering mechanism arising from the electro-optic effect of transverse polar modes.

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Key words: Raman scattering, transverse polar modes

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