From Yu and Cardona, *Fundamentals of Semiconductors* (4th edition)

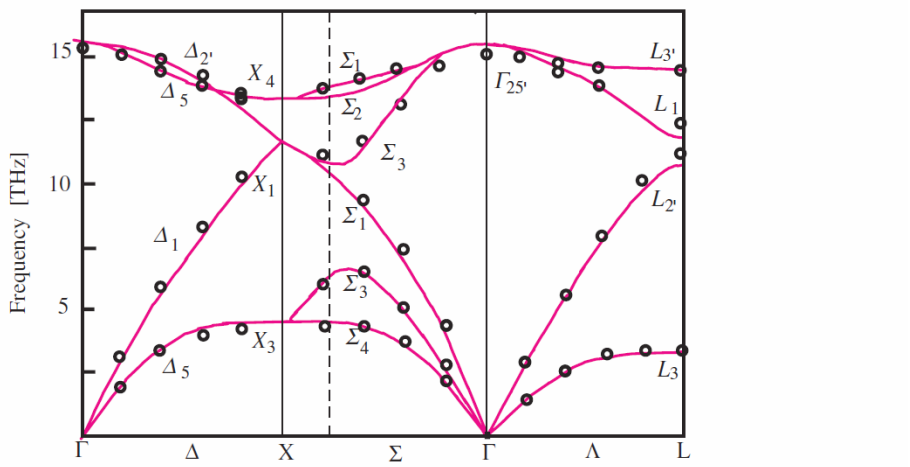

Fig. 3.1. Phonon dispersion curves in Si along high-symmetry axes. The *circles* are data points from [3.4]. The continuous curves are calculated with the adiabatic bond charge model of *Weber* [3.5]

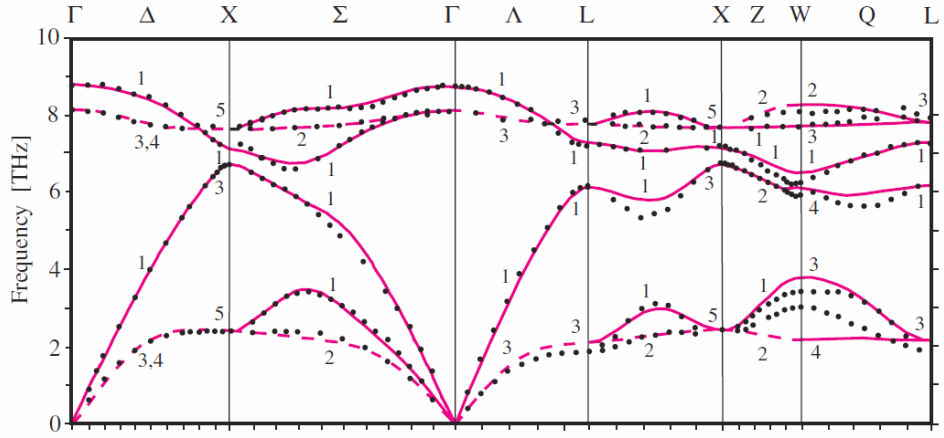

Fig. 3.2. Phonon dispersion curves in GaAs along high-symmetry axes [3.6]. The experimental data points were measured at 12 K. The *continuous lines* were calculated with an 11-parameter rigid-ion model. The numbers next to the phonon branches label the corresponding irreducible representations

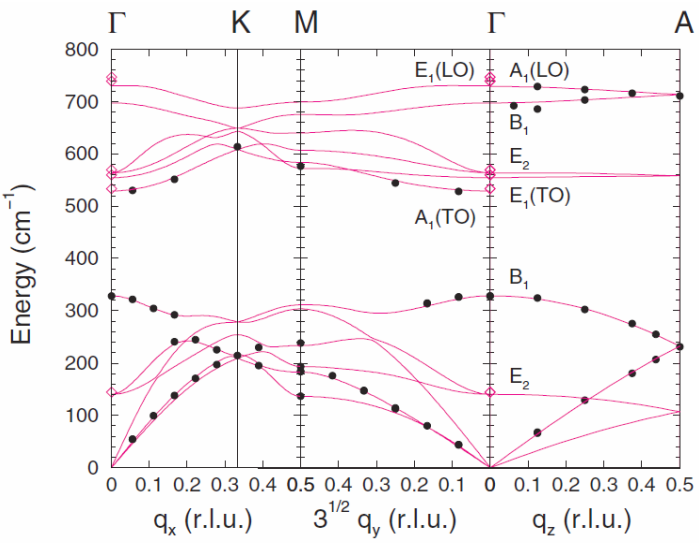

Fig. 3.3. Phonon dispersion along high symmetry directions in the wurtzite structure semiconductor GaN [3.7]. The experimental points have been obtained by Raman scattering (open circles) and by high resolution inelastic x-ray scattering (closed circles). The continuous curves are obtained by an *ab initio* calculation

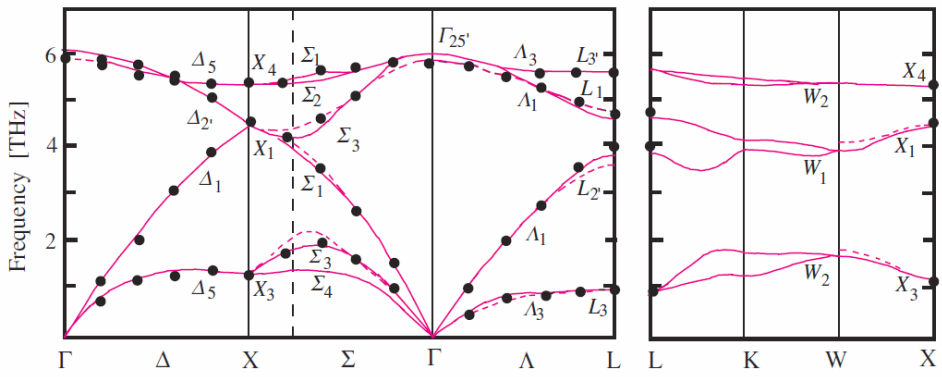

Fig. 3.10. Phonon dispersion curves of α-Sn. The solid lines were calculated with the ABCM of Weber; the broken lines are calculated by a valence force field model while the solid circles are experimental points. (From [3.5])

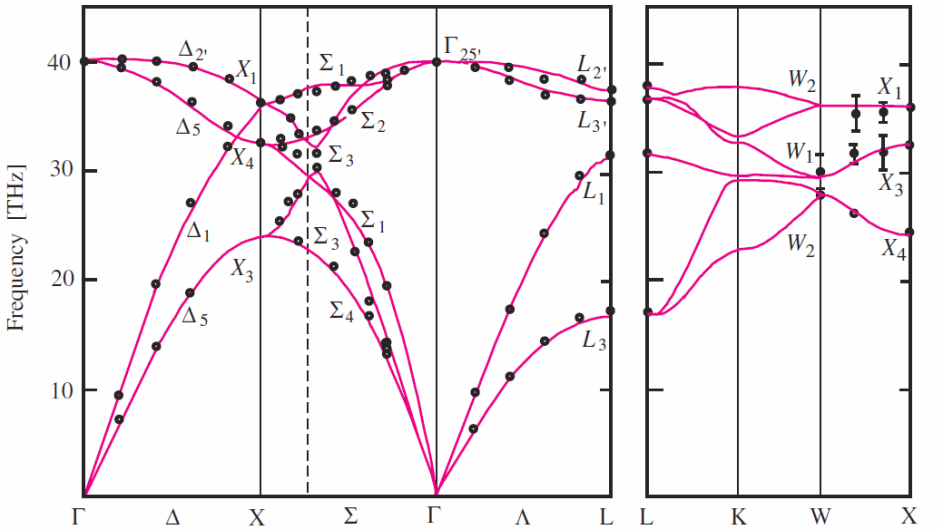

Fig. 3.11. Phonon dispersion curves of diamond. The *solid lines* were calculated with the ABCM of Weber while the *circles* represent experimental points. (From [3.5])