

and $\exp[4\langle\kappa^2 X^2\rangle_T] = 1.00039$. That is, the pseudo-Debye-Waller factor provides a negligible correction at 30°K for tungsten, and the effect of virtual phonon processes accompanying a net emission or absorption of one phonon cannot account for the deviation of theoretical values for α from experimental values at low temperatures.

Indeed, one could see physically that $\langle\kappa^2 X^2\rangle_T$ must be small compared to unity without the laborious terms of

Eq. (8). For κX is of the order of the vibrational displacement of an atom divided by the interatomic distance, and this must be small if the lattice vibrations theory, which after all is a small oscillations theory, is to hold.

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Errata

Quantitative Determination of Sources of the Electro-optic Effect in LiNbO₃ and LiTaO₃, I. P. KAMINOW AND W. D. JOHNSTON, JR. [Phys. Rev. **160**, 519 (1967)]. A factor-of-2 error in Eq. (1) has been called to our attention by R. Loudon. It should read

$$S_{ij,k}^m = \left(\frac{\hbar\omega_m\omega_s^4(n_0^m+1)n_s l d \Omega}{32\pi^3\epsilon_0^2 c^4 n_p} \right) \left(\frac{v|\alpha_{ij,k}^m|^2}{K_k^m} \right), \quad (1)$$

where we now distinguish n_s and n_p , the refractive indices at ω_s and $(\omega_s + \omega_m)$. Despite the reduction in $\alpha_{ij,k}^m$ by $2^{-1/2}$, the correlations between electro-optic coefficients and Raman measurements can still be satisfied within experimental accuracy by suitable choices of the arbitrary signs in Eq. (4). For example,

$$\begin{aligned} r_{33} &= 23.5\{1 - 0.12 - 0.02 + 0.24\} + 7.5 = 33, \\ r_{13} &= 6.6\{1 - 0.25 - 0.07 + 0.49\} + 1.1 = 8.8, \\ r_{42} &= 12.2\{0 + 1 + 0.15 + 0.17 + 0.15 + 0.14 \\ &\quad + 0.02 + 0.02 + 0\} + 1.0 = 21, \\ r_{22} &= 3.5\{0 + 1 + 0.09 + 0.23 - 0.18 + 0.05 - 0.05 \\ &\quad - 0.25 - 0\} - 0.5 = 2.6, \end{aligned} \quad (4)$$

where the electronic contribution is given [G. D. Boyd and D. A. Kleinman, J. Appl. Phys. **39**, 3597 (1968)] by $\epsilon_0 n_i^2 r_{ij,k} n_j^2 \rightarrow 4d_{ijk}$ ($\xi_{ijk} = 4d_{ijk}$) and we have used recent d_{ijk} data [J. E. Bjorkholm, IEEE J. Quant. Electron. **QE4**, 970 (1968); S. Singh (private communication) ($d_{33} = (66 \pm 6)d_{36}(KDP)$)].

Temperature Dependence of Raman and Rayleigh Scattering in LiNbO₃ and LiTaO₃, W. D. JOHNSTON, JR., AND I. P. KAMINOW [Phys. Rev. **168**, 1045

(1968)]. Equations (1) and (7) should read

$$S_{ij,k}^m = \frac{(n_0^m+1)\hbar\omega_s^4 n_s (l d \Omega) |\alpha_{ij,k}^m|^2}{32\pi^2 \epsilon_0^2 c^4 \rho^m \omega_m n_p} \quad (1)$$

and

$$g_s = \frac{8\pi^2 c^2 (S/l d \Omega) (I)}{\hbar\omega_s^3 n_s^2 (n_0+1)\Gamma}, \quad (7)$$

respectively. With these corrections, estimates of g_s/I in Table I are reduced by $\frac{1}{2}$ for all cases except H₂ gas.

Optical Second-Harmonic Generation in Reflection from Media with Inversion Symmetry, N. BLOEMBERGEN, R. K. CHANG, S. S. JHA, AND C. H. LEE [Phys. Rev. **174**, 813 (1968)]. Two equivalent expressions on the right-hand side of Eq. (25) should be multiplied by a factor $\sin^2\theta$. In Eq. (25), $P_s^{NL}(2\omega)$ should be changed to $P_s(2\omega)$, and $\bar{\delta}$ should be replaced by $\bar{\delta}\sin^2\theta$ everywhere following this equation. This additional factor comes from the $\delta(z)$ character of E_{2s} , which is a direct consequence of the fact that $D_{2s} = E_{2s} + 4\pi P_{2s}$ should be continuous everywhere and finite even at the surface. Note that this condition is satisfied by the solution of the nonlinear boundary problem obtained by Bloembergen and Pershan [N. Bloembergen and P. S. Pershan, Phys. Rev. **128**, 606 (1962)]. This is also true for a physical model in which the second harmonic wave is assumed to arise from an electric double layer at the surface [C. C. Wang, Phys. Rev. (to be published)].

In the fourth column of Table III, the experimental value for β should be changed from 0.55 to 1.0 for KI.