ChemPhysChem

Supporting Information

Beyond Beer's Law: Revisiting the Lorentz-Lorenz Equation

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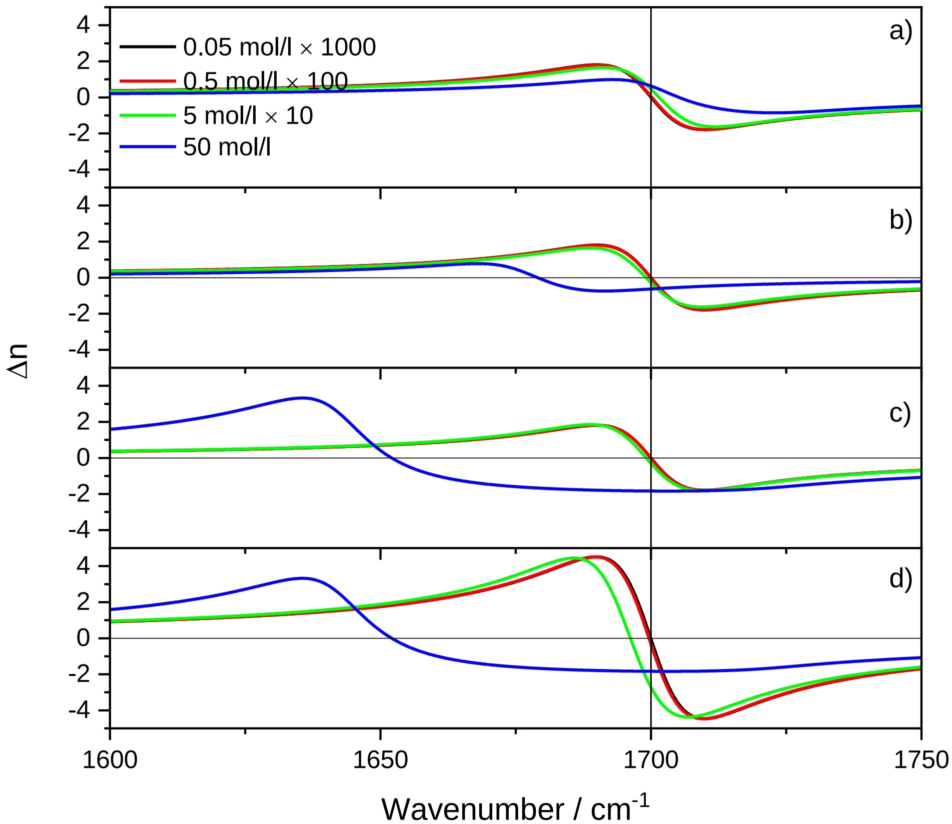

Figure S1. Normalized Change of the index of refraction for different concentrations of 0.05, 0.5, 5 and 50 mol/l of the hypothetical material a) conventional dispersion formula. b) conventional dispersion formula assuming a redshift according to $\tilde{\nu}'_{0i} = \sqrt{\tilde{\nu}_{0i}^2 - \frac{c}{3} S_i^{*2}}$. c) Lorentz-Lorenz formula eqn. **Fehler! Verweisquelle konnte nicht gefunden werden.** in combination with **Fehler! Verweisquelle konnte nicht gefunden werden.**. d) Same as c) but with hypothetical solvent.

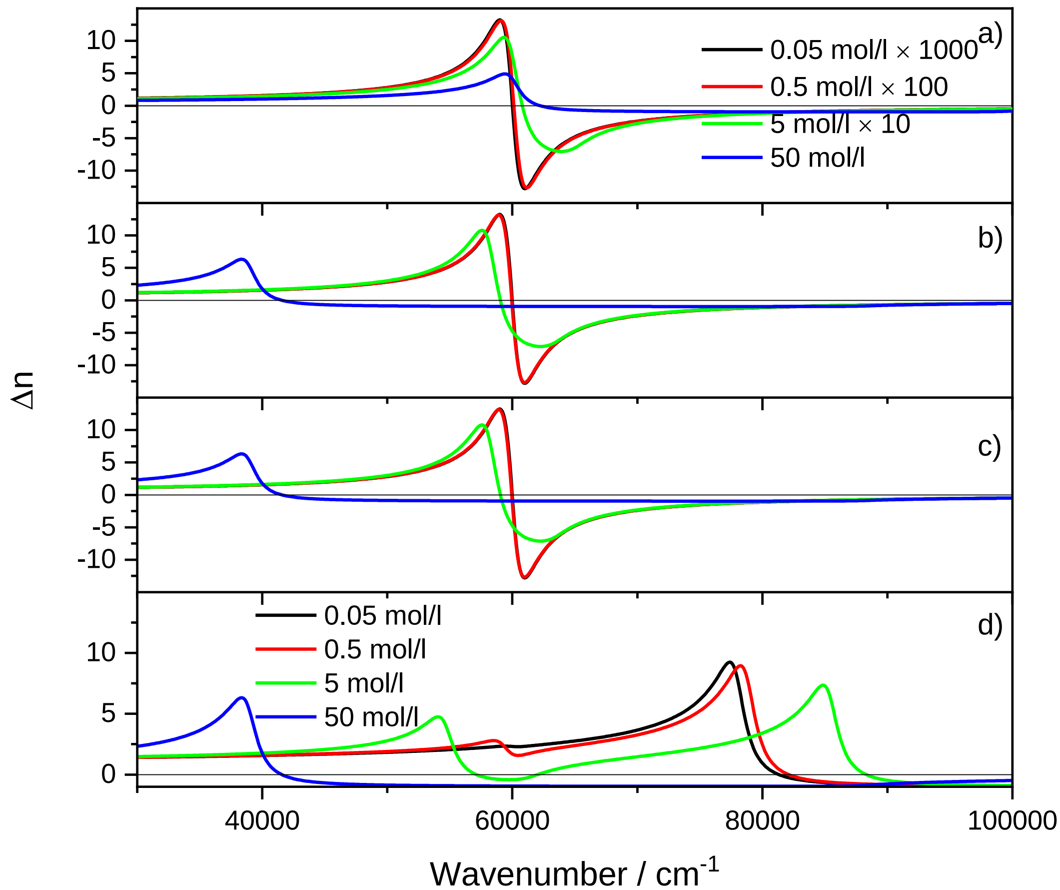

Figure S2. Normalized change of the index of refraction for different concentrations of 0.05, 0.5, 5 and 50 mol/l of the hypothetical material. a) conventional dispersion formula. b) conventional dispersion formula assuming a redshift according to $\tilde{\nu}'_{0i} = \sqrt{\tilde{\nu}_{0i}^2 - \frac{c}{3} S_i^{*2}}$. c) Lorentz-Lorenz formula eqn. **Fehler! Verweisquelle konnte nicht gefunden werden.** in combination with **Fehler! Verweisquelle konnte nicht gefunden werden.**. d) Same as c) but with hypothetical solvent. Note that for d), in contrast to a) - c), a constant d = 10^{-6} cm was chosen.

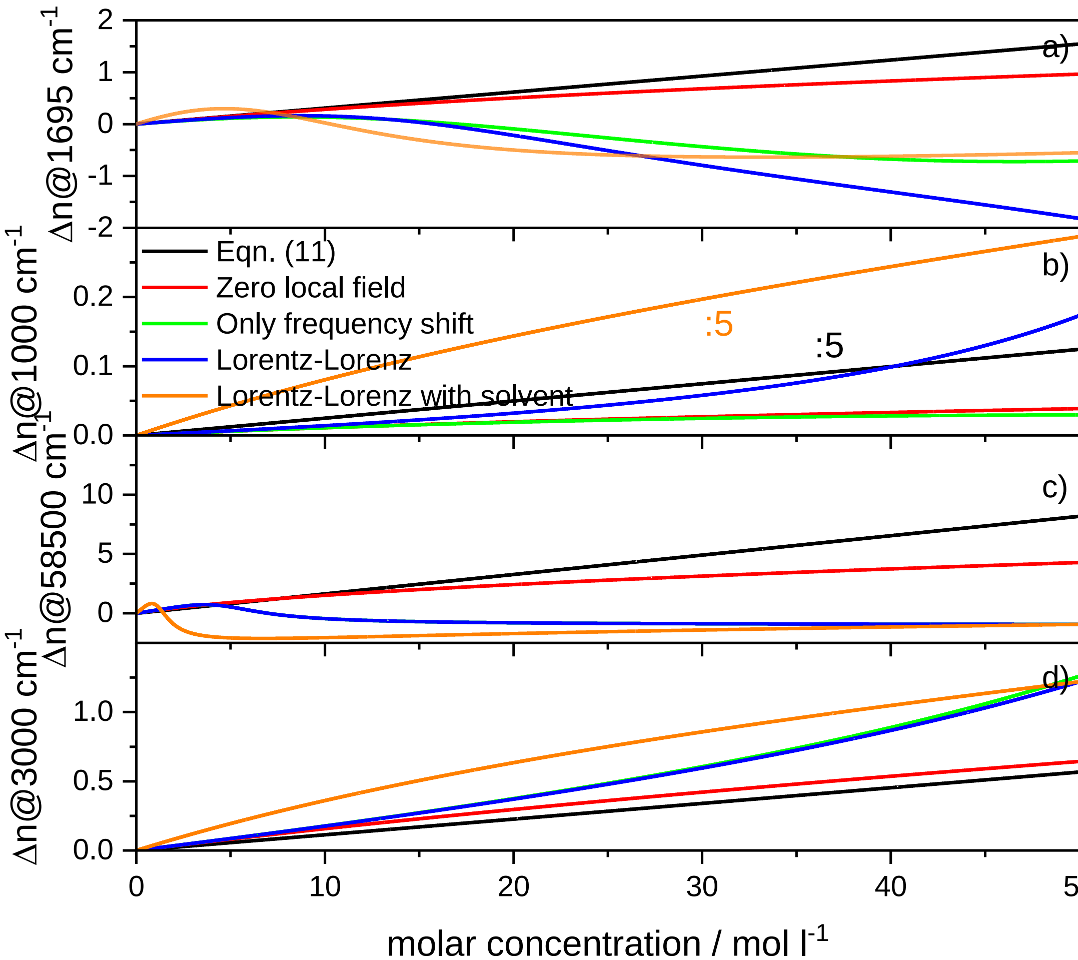

Figure S3. Dependence of the index of refraction change from the concentration. a) at 1695 cm^{-1}. b) at 1000 cm^{-1}. c) at 58 500 cm^{-1}. d) at 3000 cm^{-1}.