Supporting Information

Surface Electric Fields of Aqueous Solutions of NH_4NO_3, $Mg(NO_3)_2$, $NaNO_3$, and $LiNO_3$: Implications for Atmospheric Aerosol Chemistry

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SUPPLEMENTARY FIGURES

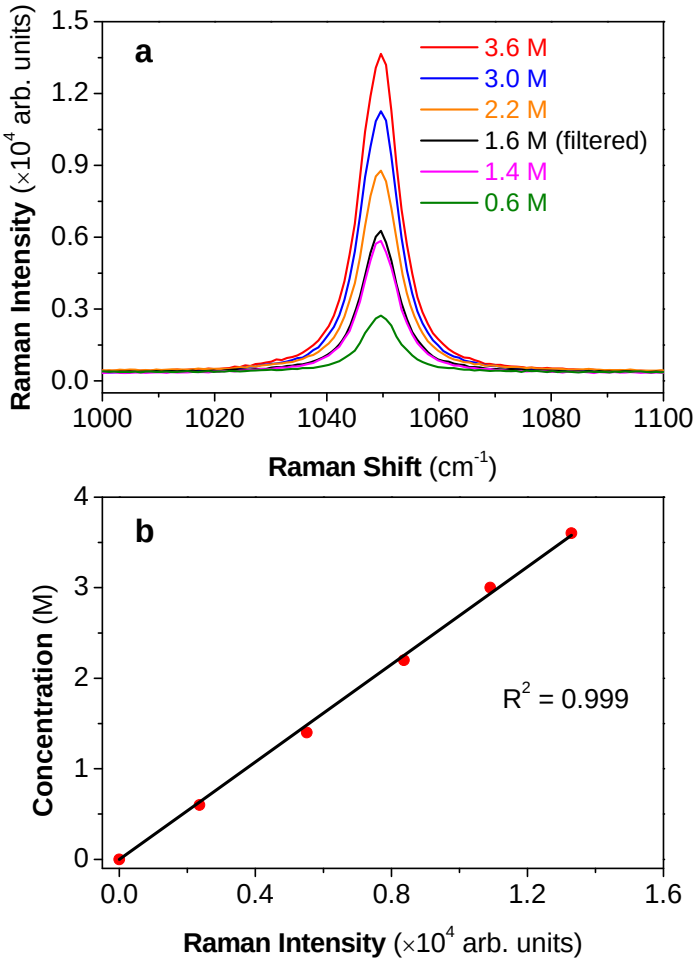

Figure S1. (a) Raman spectra of 0.6, 1.4, 2.2, 3.0, and 3.6 M unfiltered NH_4NO_3, as well as filtered VSFG stock solution (1.6 M), (b) Calibration curve of NH_4NO_3 solutions using the height of each individual Raman spectra. The concentrations of other nitrate VSFG stock solutions were determined in the same manner.

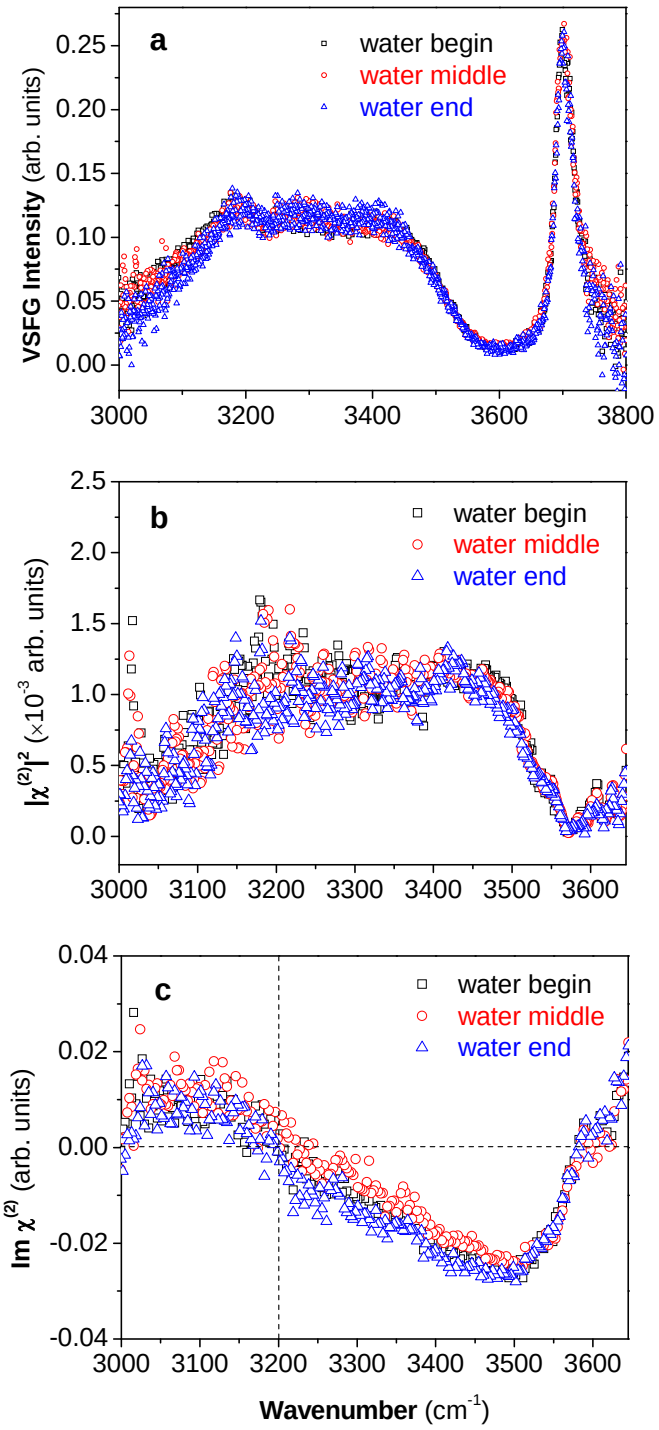

Figure S2. VSFG spectra at the neat air/water interface in the OH stretching region (3100–3800 cm^{-1}). (a) VSFG spectra, (b) VSFG deduced power ($|\chi_{\text{eff}}^{(2)}(\omega_{\text{IR}})|^2$) spectra from HD-VSFG, and (c) Im $\chi_{\text{s}}^{(2)}(\omega_{\text{IR}})$ spectra.

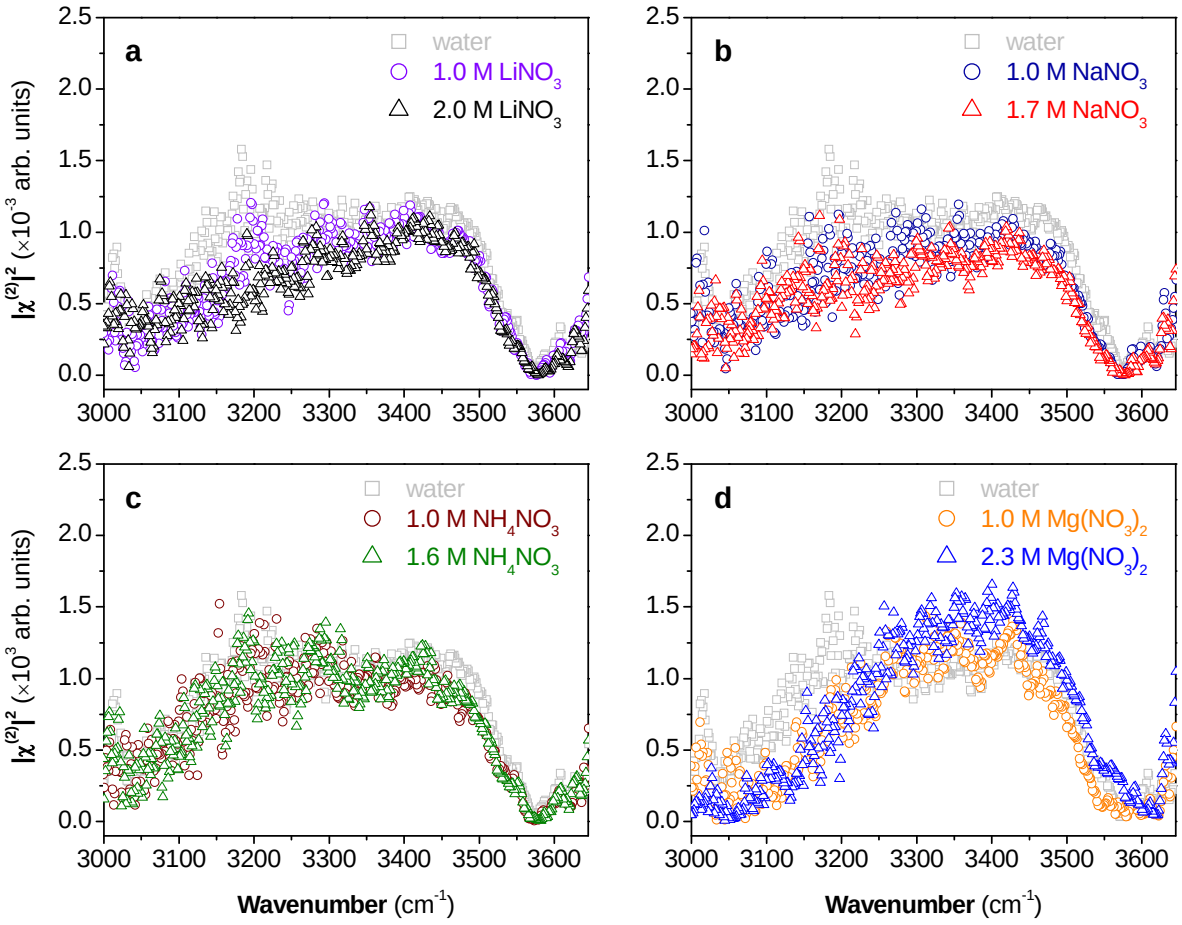

Figure S3. VSFG deduced power ($|\chi_{\text{eff}}^{(2)}(\omega_{\text{IR}})|^2$) spectra from HD-VSFG at air/aqueous solution interfaces of (a) 1.0 M and 2.0 M $LiNO_3$, (b) 1.0 M and 1.7 M $NaNO_3$, (c) 1.0 M and 1.6 M NH_4NO_3, and (d) 1.0 M and 2.3 M $Mg(NO_3)_2$ salt solutions. VSFG deduced power spectrum of the neat air/water interface is shown as reference.

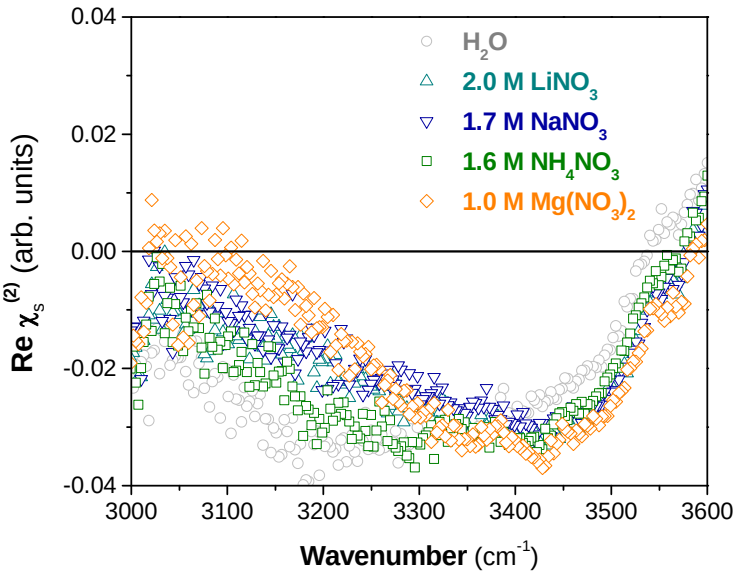

Figure S4. HD-VSFG Re $\chi_s^{(2)}(\omega_{IR})$ spectra at air/aqueous solution interfaces of 2.0 M $LiNO_3$, 1.7 M $NaNO_3$, 1.6 M NH_4NO_3, and 1.0 M $Mg(NO_3)_2$ salt solutions. HD-VSFG Re $\chi_s^{(2)}(\omega_{IR})$ spectrum of the neat air/water interface is shown as reference.

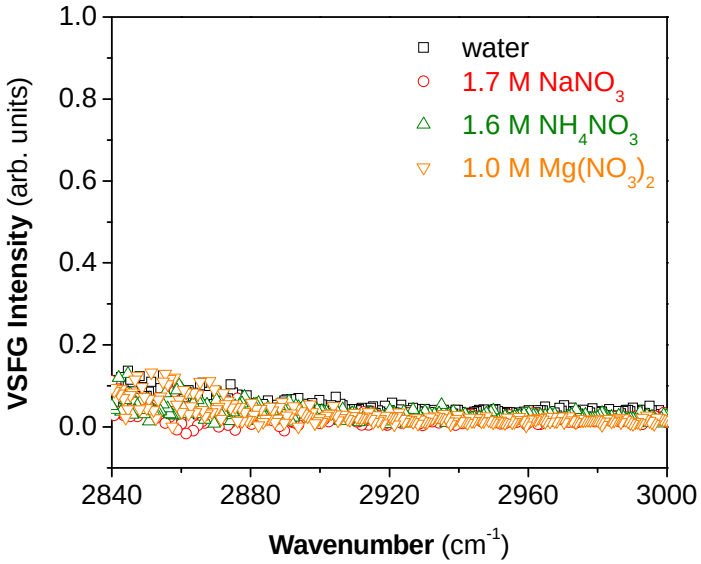

Figure S5. VSFG spectra of neat water, 1.7 M $NaNO_3$, 1.6 M NH_4NO_3, and 1.0 M $Mg(NO_3)_2$ salt solutions in the surfactant CH stretching region (2800–3000 cm^{-1}).