

Supplemental Information

Size Resolved Chemical Composition of Nanoparticles from Reactions of Sulfuric Acid with Ammonia and Dimethylamine

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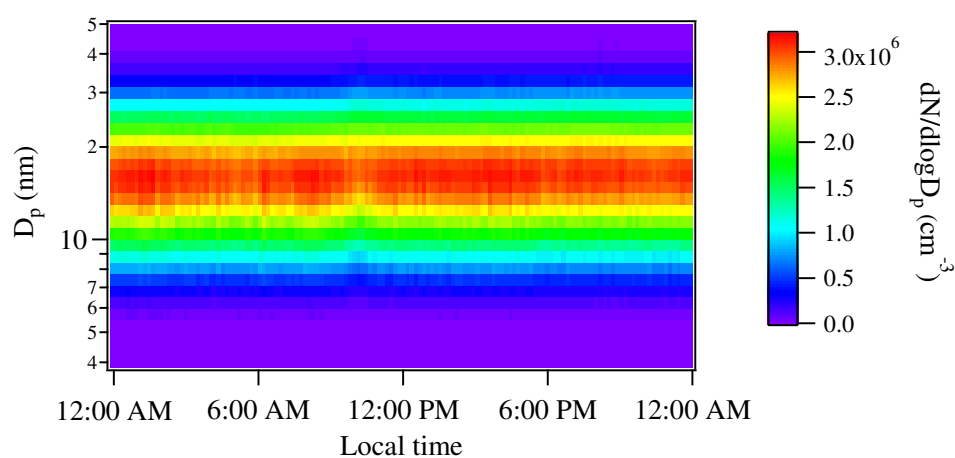


Figure S1. Time evolution of size distributions of particles measured by SMPS from the reaction of $2.5 \times 10^{10} \text{ cm}^{-3} \text{ H}_2\text{SO}_4$ with $8.9 \times 10^{10} \text{ cm}^{-3} \text{ DMA}$ under dry conditions.

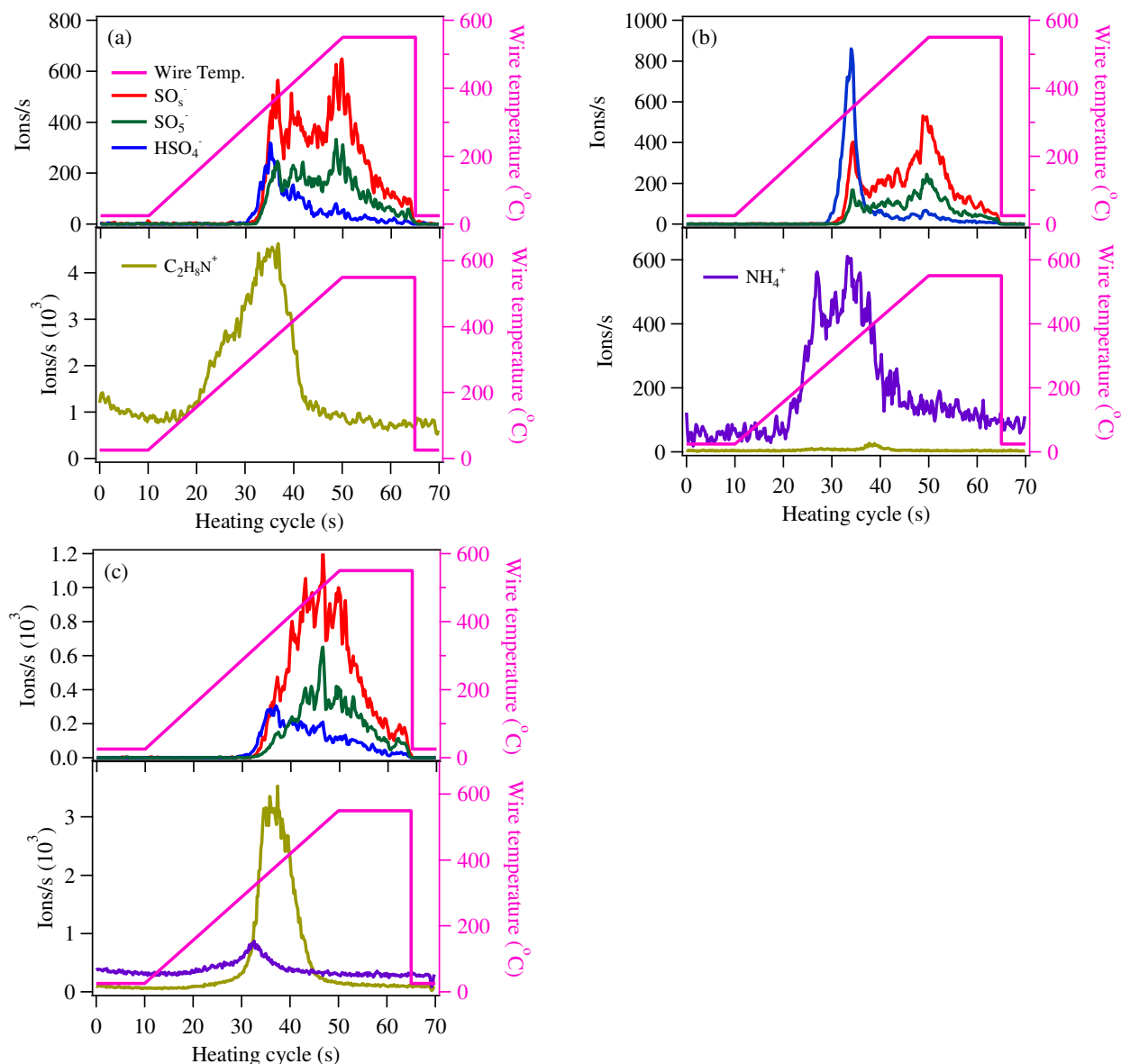


Figure S2. Typical desorption profiles of ions formed by heating atomized particles of (a) $(\text{C}_2\text{H}_8\text{N})_2\text{SO}_4$, (b) $(\text{NH}_4)_2\text{SO}_4$ and (c) mixture of $(\text{C}_2\text{H}_8\text{N})_2\text{SO}_4$ and $(\text{NH}_4)_2\text{SO}_4$ in a 1:1 molar ratio collected on the Pt filament. The top panels show ions collected in the negative ion mode. The lower panels show ions collected in the positive ion mode. The magenta lines show the evolution of the filament temperature. The signal of $\text{C}_2\text{H}_8\text{N}^+$ is much higher than NH_4^+ in the lower panel of (c), suggesting that TDCIMS is more sensitive to $\text{C}_2\text{H}_8\text{N}^+$ ions.

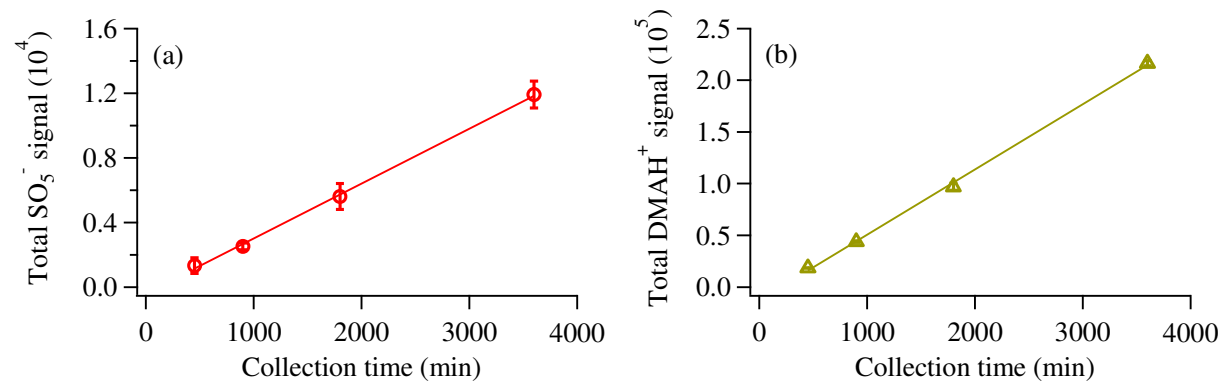


Figure S3. Total (a) SO_5^- and (b) DMAH^+ signals as a function of collection time for H_2SO_4 -DMA particles. The error bars represent standard deviations of at least three repeated measurements.