

**Supplemental Material: Characterization of a catalyst-based total nitrogen and carbon conversion technique to calibrate particle mass measurement instrumentation**

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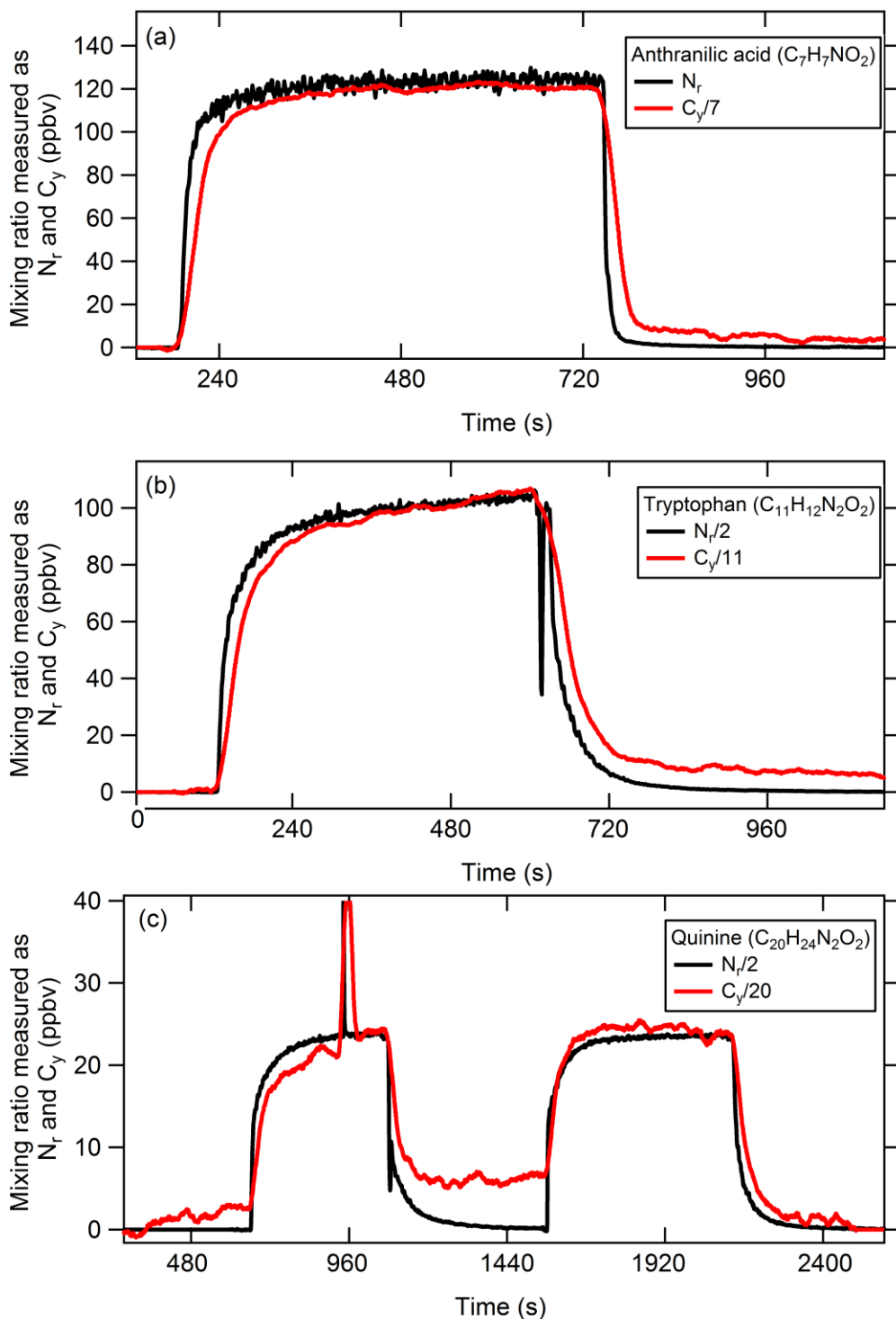
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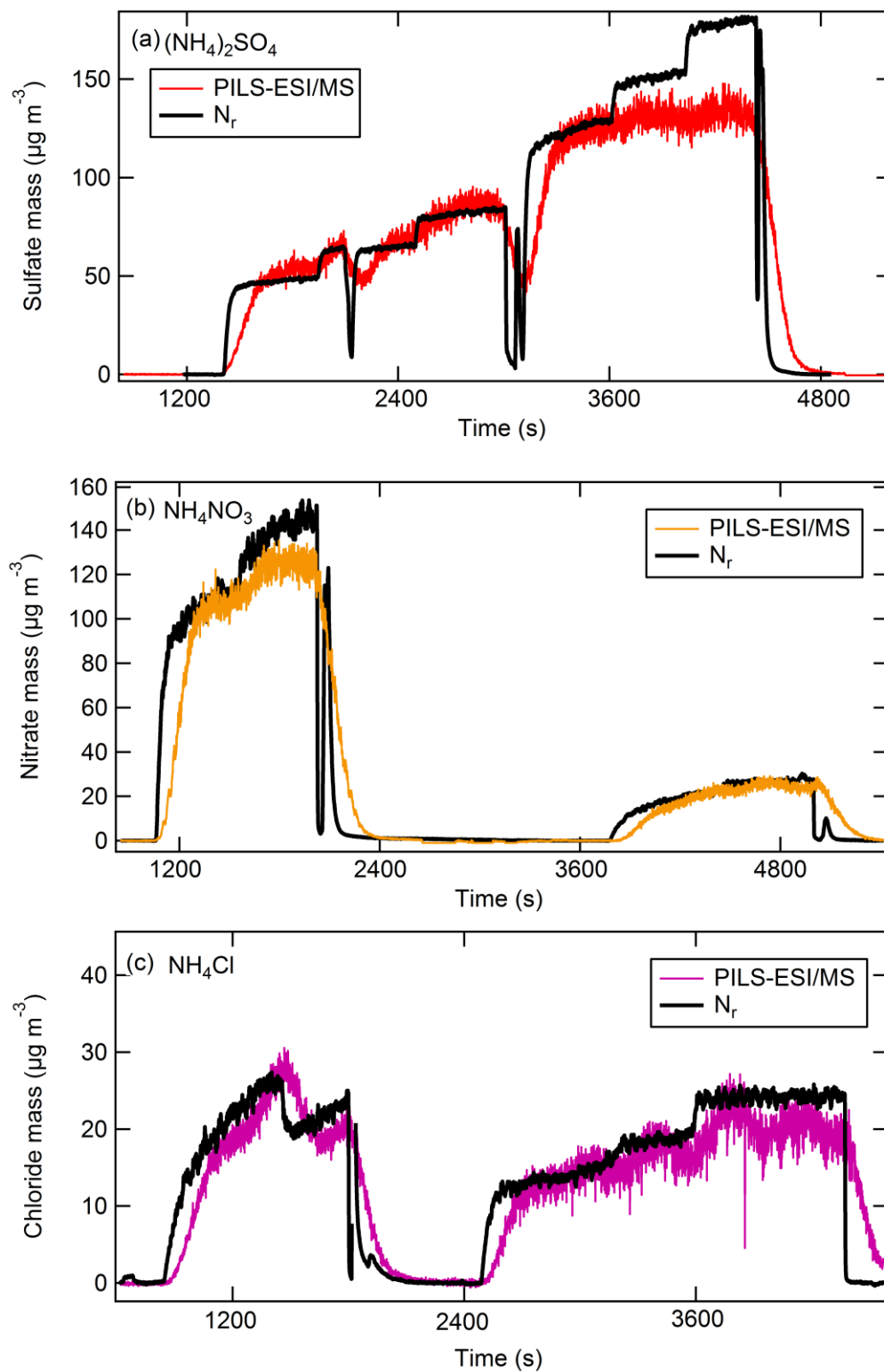
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**Figure S1.** An example of the quantitative conversion of atomized polydisperse (a) anthranilic acid ( $C_7H_7NO_2$ ), (b) tryptophan ( $C_{11}H_{12}N_2O_2$ ), and (c) quinine ( $C_{20}H_{24}N_2O_2$ ) to NO and  $CO_2$  measured by NO- $O_3$  chemiluminescence and a LICOR-6251, respectively. The measured total  $C_y$  (red) is divided by the number of C atoms and total  $N_r$  is divided by the number of N atoms in the corresponding compound.



**Figure S2.** The PILS-ESI/MS measured sulfate (red), nitrate (gold), and chloride (magenta) concentration ( $\mu\text{g m}^{-3}$ ) and the corresponding anion concentrations measured as  $N_r$  (black) for atomized solutions of (a)  $(\text{NH}_4)_2\text{SO}_4$ , (b)  $\text{NH}_4\text{NO}_3$ , and (c)  $\text{NH}_4\text{Cl}$ . The  $(\text{NH}_4)_2\text{SO}_4$  concentration exceeded the linear response of the PILS-ESI/MS above 130  $\mu\text{g m}^{-3}$  as noted after 3600 s in (a).