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Supplement of

Comparison of secondary organic aerosol formation from toluene on initially wet and dry ammonium sulfate particles at moderate relative humidity

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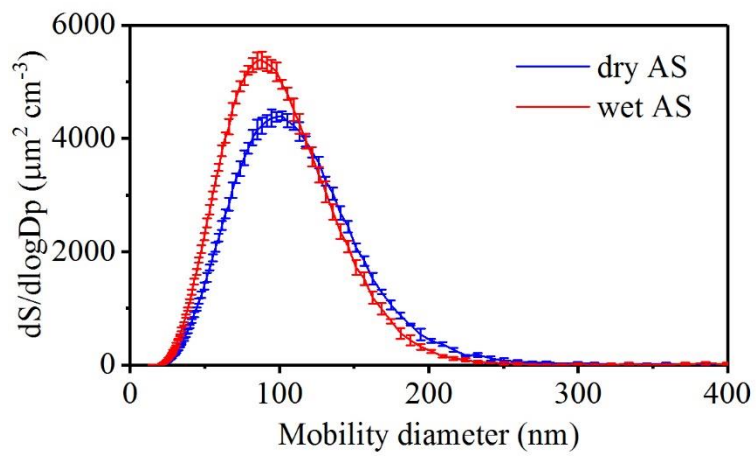


Fig. S1. Size distribution of particle surface of initially wet and dry AS seeds.

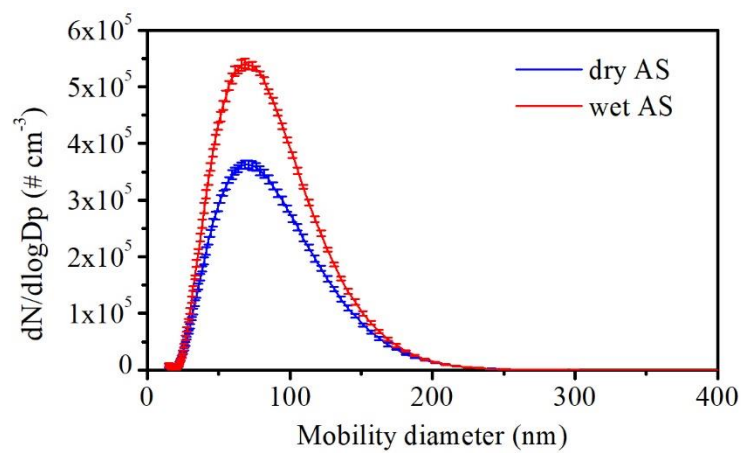


Fig. S2. Size distribution of particle number at an OH exposure of 0.47×10^{11} molecules cm^{-3} s.

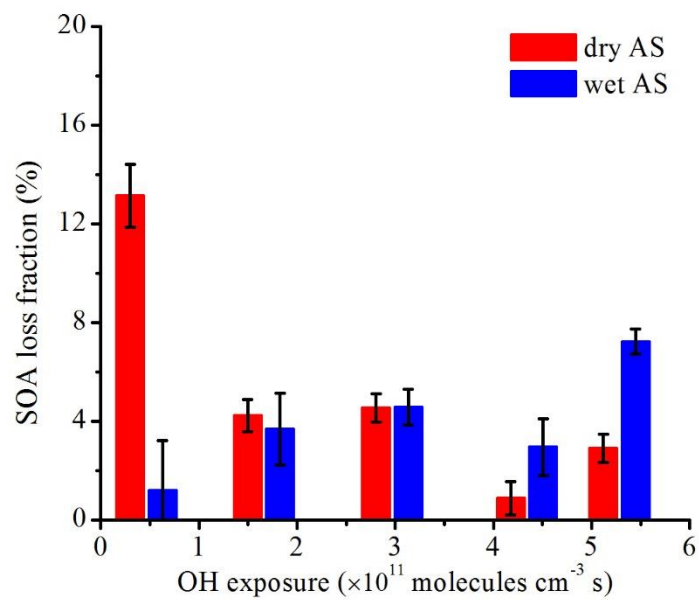


Fig. S3. Losses of SOA due to drying process for initially wet and dry AS seeds.

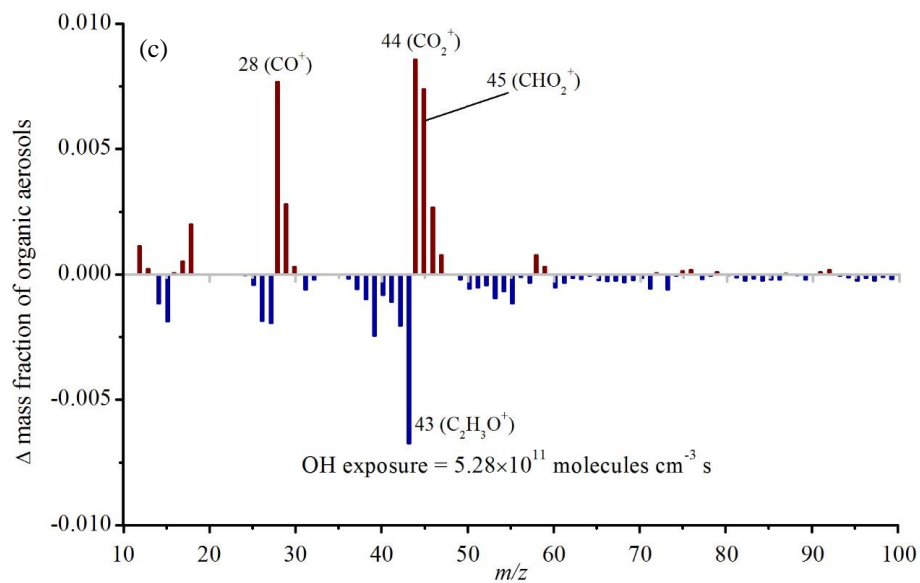
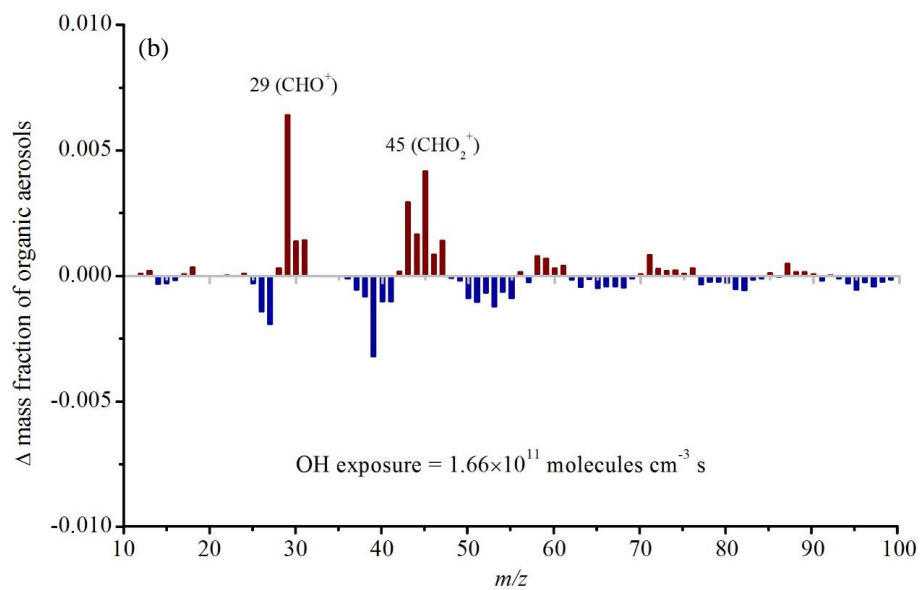
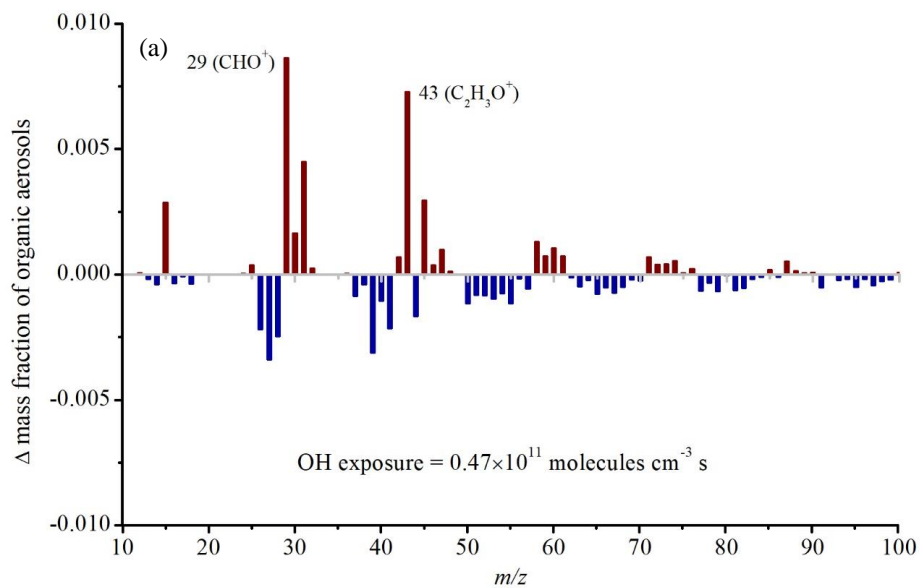


Fig. S4. Difference of organic mass fraction of toluene-derived SOA on dry and wet AS at an OH exposure of (a) 0.47×10^{11} molecules cm^{-3} s, (b) 1.66×10^{11} molecules cm^{-3} s and (c) 5.28×10^{11} molecules cm^{-3} s. Positive red peaks display a larger fraction of organic aerosols on wet AS, and negative blue peaks show a larger fraction of organic aerosols on dry AS.

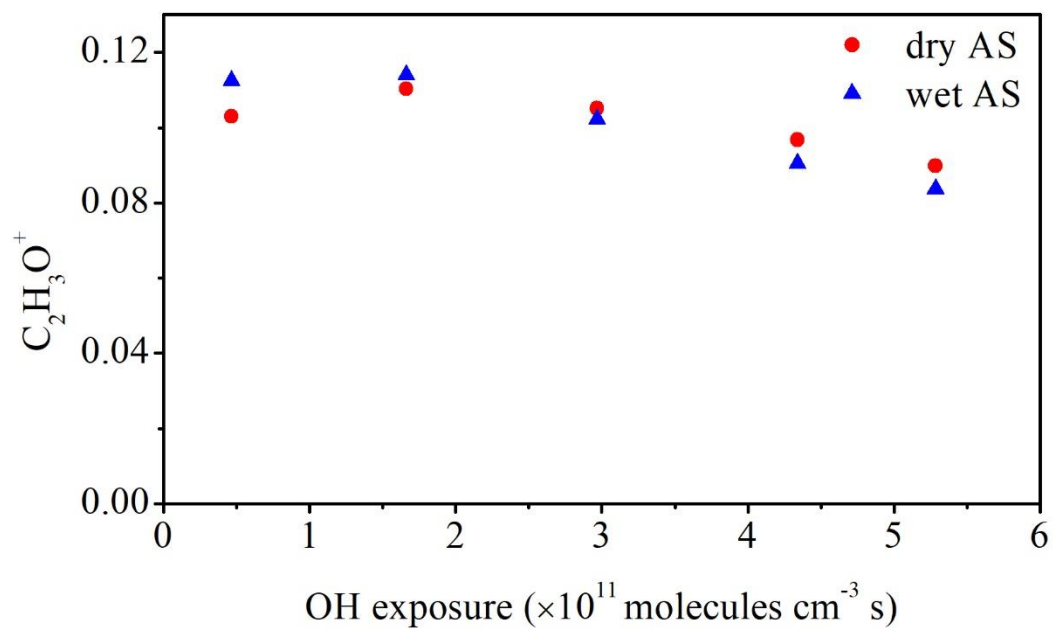


Fig. S5. Fractions of $C_2H_3O^+$ in toluene-derived SOA as a function of OH exposure.

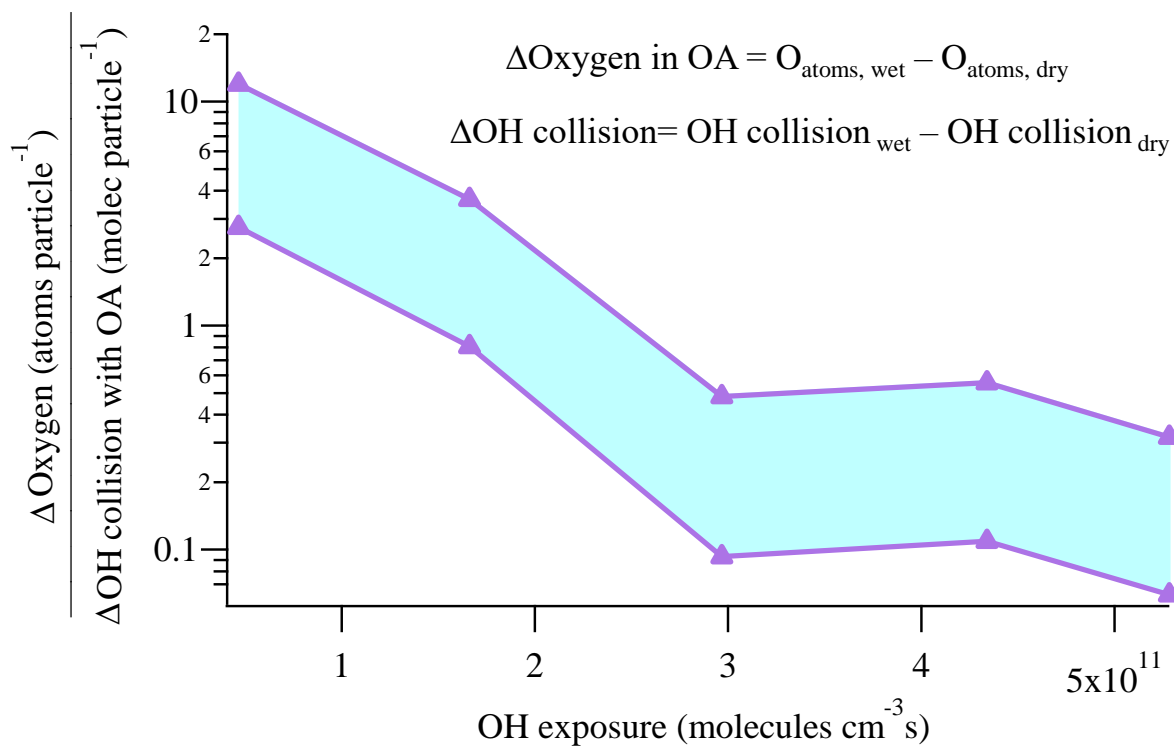


Fig. S6. The ratio of the difference in oxygen of OA for initially wet and dry AS seed particles to the difference in total number of OH collisions with OA vs. OH exposure. The uptake coefficient (γ) of OH radicals was assumed to be 1 and 0.1/0.8 (lower/upper limit) for initially wet and dry AS seed particles, respectively.