Figure S-1. Calibration curve of ammonium sulfate particles at ss=0.2%, 0.4%, 0.6%, 0.8% and 1.0%. Critical diameter ($d_{p50}$) for ss=0.2%, 0.4%, 0.6%, 0.8% and 1.0% is 74.48±2.15, 48.76±0.87, 37.60±0.85, 32.51±0.73 and 28.59±0.52 (nm). Based on $\kappa$-Köhler theory, calculated instrument ss is 0.20%, 0.38%, 0.56%, 0.69% and 0.82% correspondingly. The following (NH$_4$)$_2$SO$_4$ properties are used in Köhler theory calculations; density = 1.770 g cm$^{-3}$, van’t hoff factor = 2.609, 2.504, 2.437, 2.387 and 2.348 at ss=0.2%, 0.4%, 0.6%, 0.8% and 1.0% respectively.