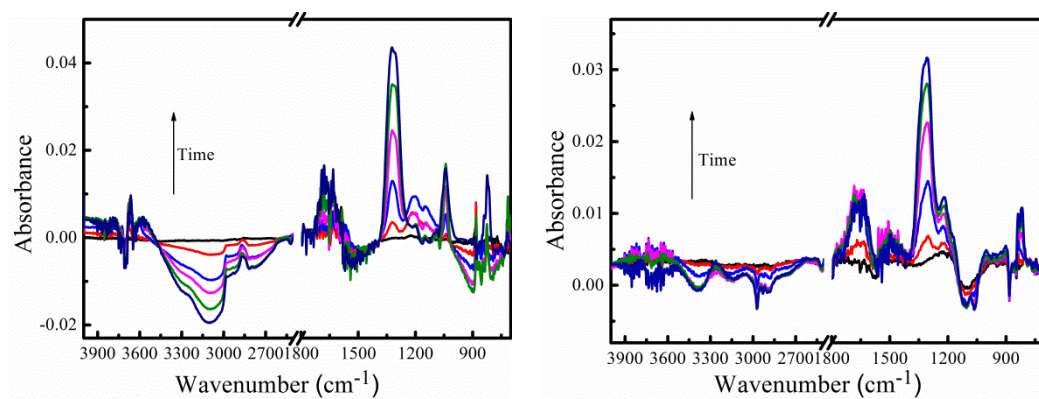


*Supplement of*

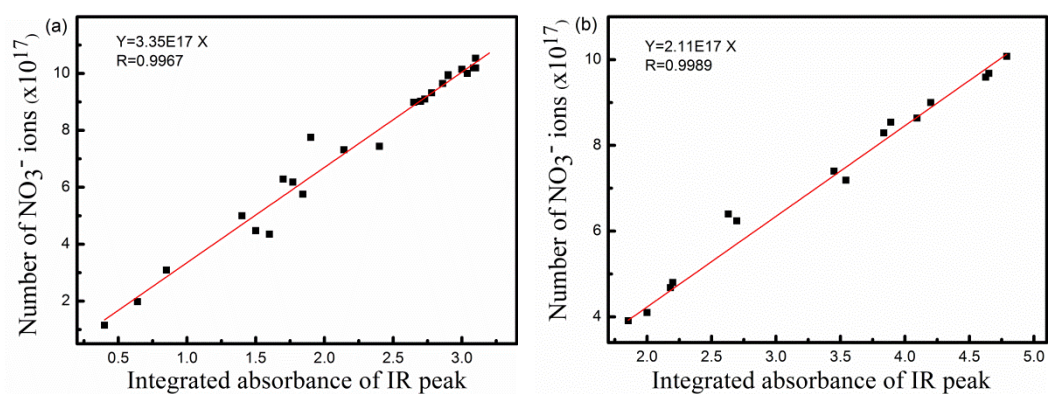
**Heterogeneous reactions of NO<sub>2</sub> with CaCO<sub>3</sub>-(NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> mixtures  
at different relative humidities**

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**Figure S1.** Absorption spectra recorded during the reaction of NO<sub>2</sub> on (a) pure CaCO<sub>3</sub> particle surfaces, and (b) FAS-57 under dry condition and reaction times of 0 to 120 min. The NO<sub>2</sub> concentration was  $2.6 \times 10^{15}$  molecule cm<sup>-3</sup>.



**Figure S2.** The number of  $\text{NO}_3^-$  ions detected by IC as a function of integrated absorbance of IR peak between 1390 and 1250  $\text{cm}^{-1}$  at (a) dry condition, 40% RH, and 60% RH, (b) 85% RH.