

Electronic supplementary information

**Effects of NO₂ and SO₂ on the heterogeneous reaction
of acetic acid on α -Al₂O₃ in the presence and absence
of simulated irradiation**

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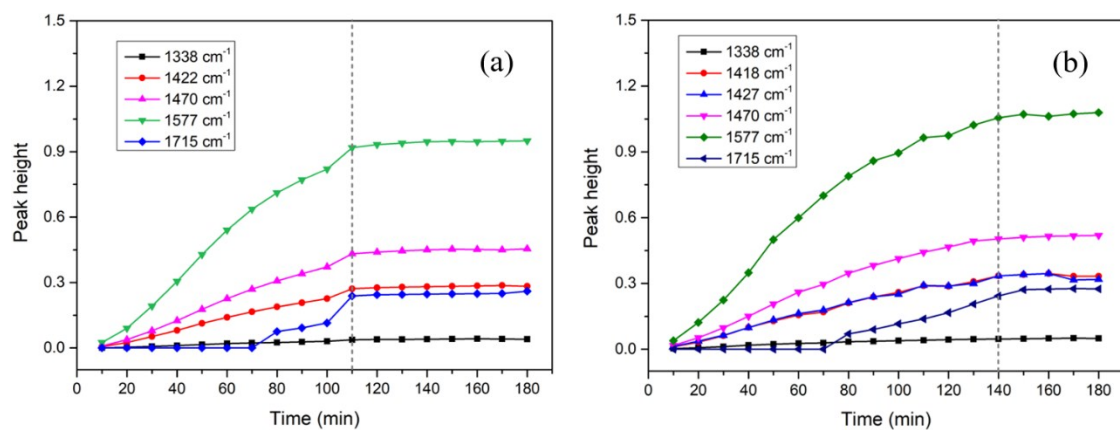


Fig. S1 Peak heights recorded during the reaction of individual acetic acid on α -Al₂O₃ particles: (a) in the dark; (b) in the light.

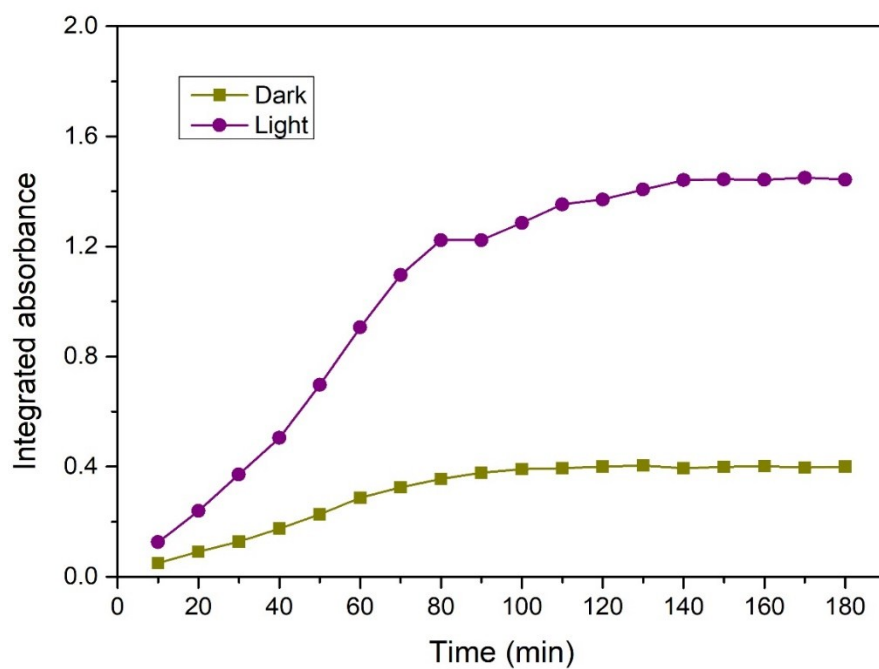


Fig. S2 Temporal evolution of the integrated absorbance area of nitrate (1400-1760 cm⁻¹) for α -Al₂O₃ particles exposed to NO₂ alone in the dark or light condition.

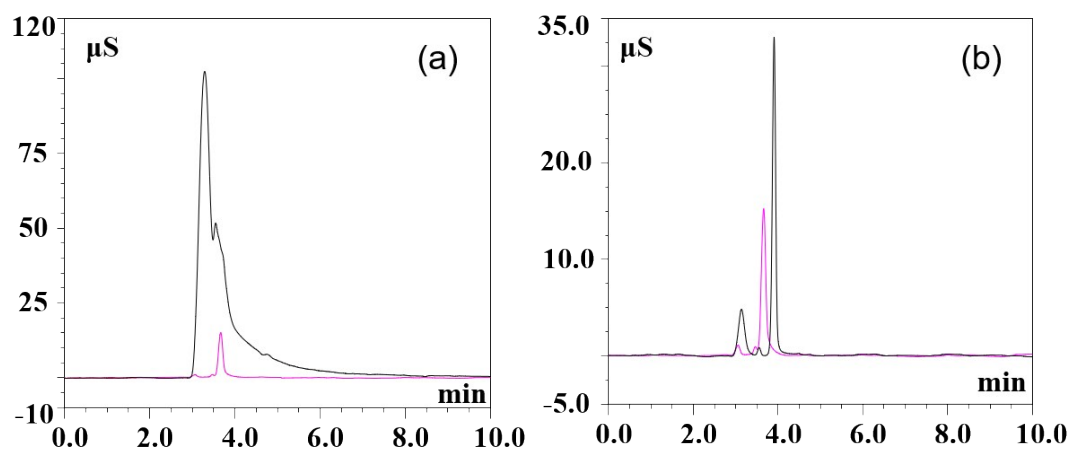


Fig. S3 IC experimental results recorded after the reaction of individual SO_2 on $\alpha\text{-Al}_2\text{O}_3$ particles: (a) the formation of the sulfite in the dark; (b) the formation of the sulfate in the light. The pink curve represents the IC experimental results of the standard sample with a concentration of $10\text{ }\mu\text{g/L}$ sulfite or sulfate, and the black curve represents the IC experimental results of the products formed in DRIFTS experiments.