Supporting Information

Monge et al. 10.1073/pnas.1120593109

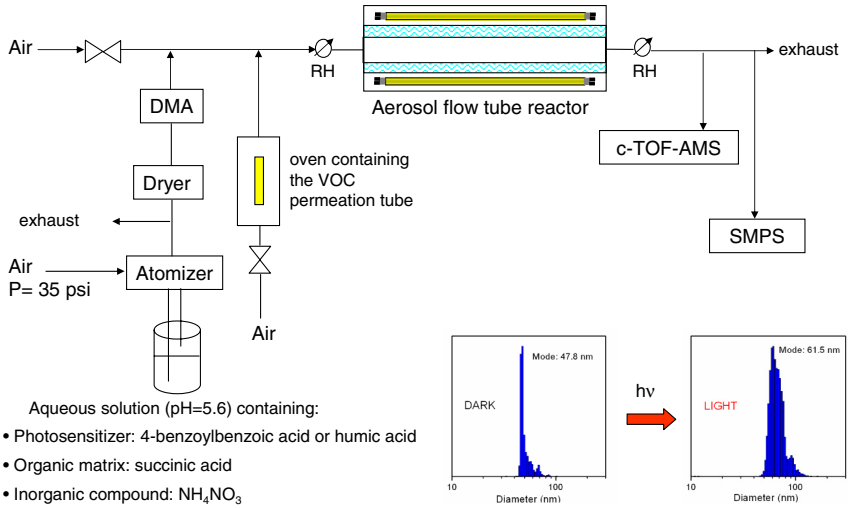

Fig. S1. Scheme of the experimental set-up and example of the photoinduced change of the particle size distribution detected at the exit of the aerosol flow tube reactor by scanning mobility particle sizer (SMPS) when seed particles of humic acid : succinic acid : NH_4NO_3 (1 : 10 : 1 in weight) are exposed to 330 ppbv of gaseous limonene.

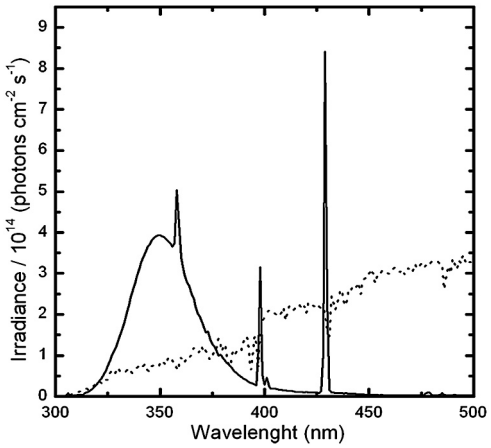

Fig. S2. Spectral irradiance of the light source (three lamps) used in the present study (solid line) compared to the solar spectral irradiance (dotted line).

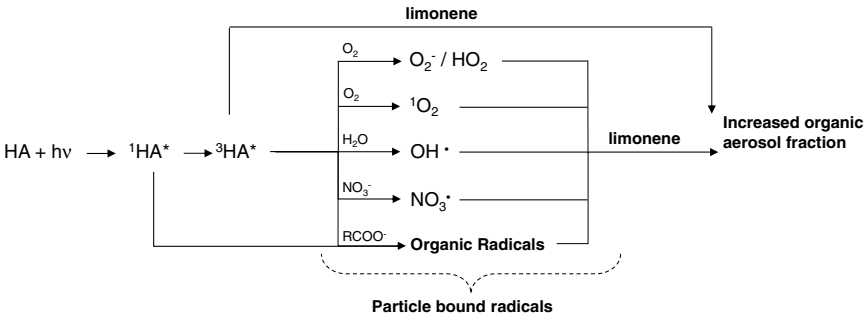

Fig. S3. Reaction scheme proposed for the observed photoinduced growth.

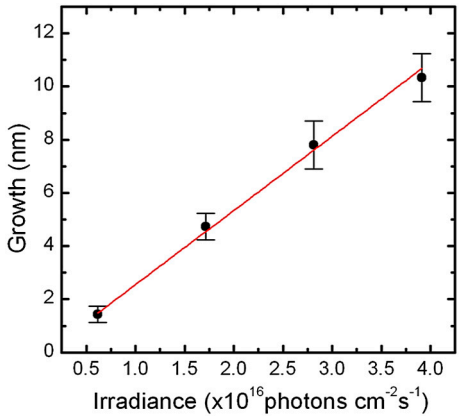

Fig. S4. Measured particle growth as a function of the irradiance in the 300–420 nm wavelength range. The photoenhanced size increase corresponds to initial aerosol particles of humic acid : succinic acid : NH_4NO_3 (1 : 10 : 1 in weight) exposed to 335 ppbv of limonene. Residence time in the aerosol flow tube reactor: 10.2 min.

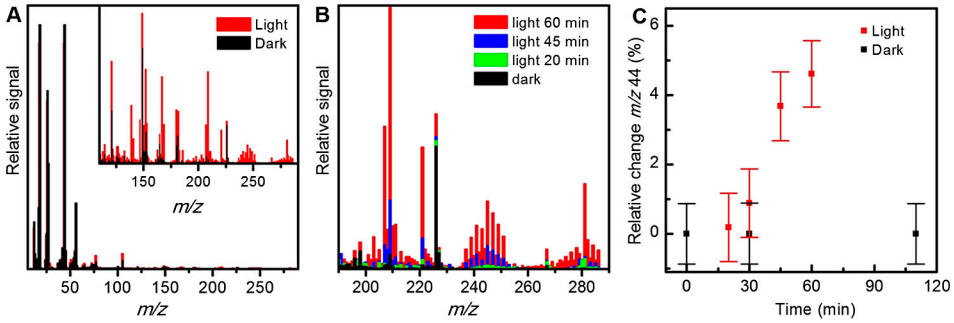

Fig. S5. Aerosol mass spectrometer (AMS) analysis of the system composed by 4-(benzoyl)benzoic:succinic acid (1 : 10 in weight) exposed to 900 ppbv of gas phase isoprene and light. (*A*) Particle mass spectra after 60-min light exposure (red) compared to the system in the dark for 110 min (black) in stop flow mode. (*B*) Zoom of the fragments with high m/z values observed after different irradiation times. (*C*) Relative change of m/z 44, representative of CO_2^+, as a function of time inside the reactor in stop flow mode, in the dark (black) and under irradiation (red) for the system composed by 4-(benzoyl)benzoic:succinic acid (1 : 10 in weight) particles exposed to 900 ppbv of gas phase isoprene.

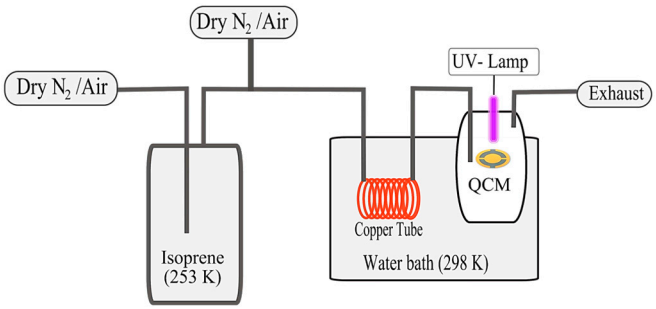

Fig. S6. Scheme of the QCM experimental system.

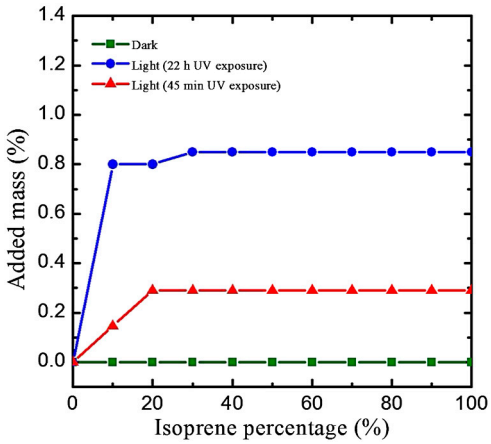

Fig. S7. Added mass due to isoprene adsorption on a layer of succinic acid and 2-benzoylbenzoic acid (9 : 1 mol) in 1 mL of methanol and 1 mL of hexane solution vs. the percentage of isoprene vapor at 25 °C. The added mass is in percentage compared to the initial substrate at 0% isoprene vapor before and after UV exposure.