

SUPPORTING INFORMATION

# **Photo-Induced Crystallization and Activation of Amorphous Titanium Dioxide**

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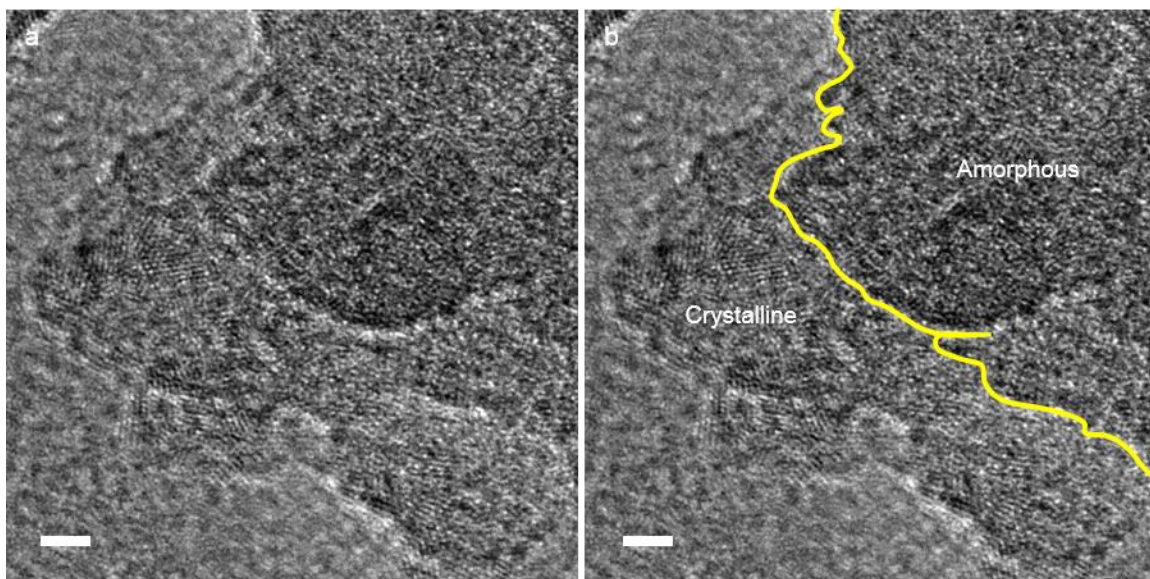


Figure S1. High resolution transmission electron micrographs of pc-TiO<sub>2</sub> showing crystallized surfaces. Sale bars: 2 nm.

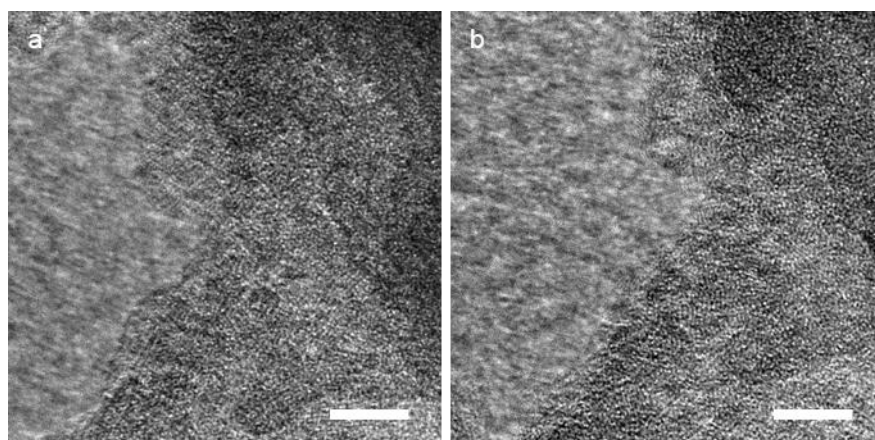


Figure S2. Transmission electron micrographs of amorphous TiO<sub>2</sub> measured after being exposed to the electron beam for (a) 1 min and (b) 10 min. Scale bars: 5 nm.

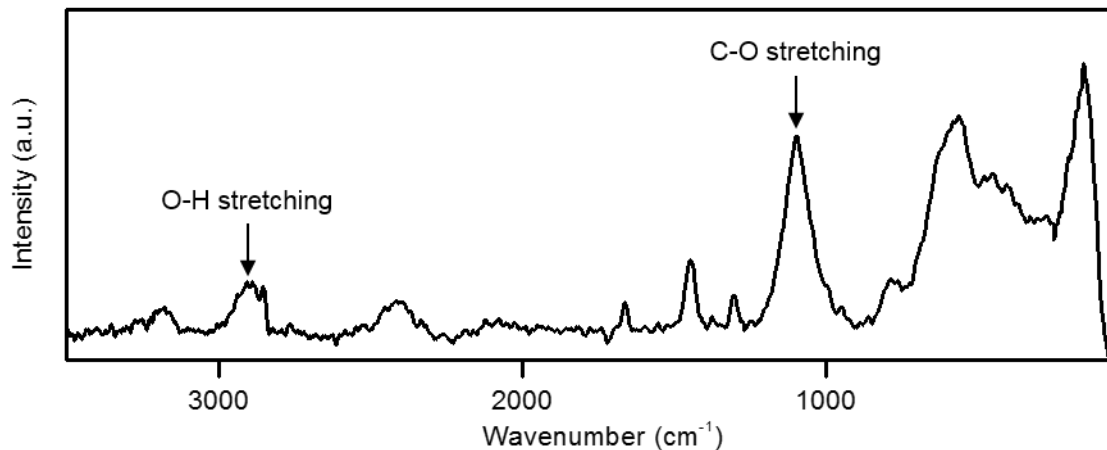


Figure S3. Raman spectrum of amorphous TiO<sub>2</sub>, showing residuals of water and alcohol.

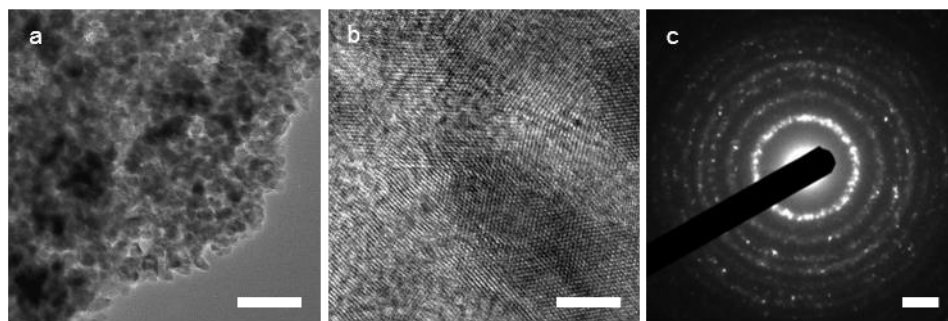


Figure S4. Transmission electron micrographs (a, b) and selected area electron diffraction pattern (c) of amorphous TiO<sub>2</sub> annealed at 450°C for 1 hour. The numbers in *c* mark the 101, 004, 200, 105/121, and 204 reflections of anatase in ascending order. The anatase crystallites are 10 – 20 nm in size. Scale bars: *a*, 50 nm, *b*, 5 nm; *c*, 2 nm<sup>-1</sup>.

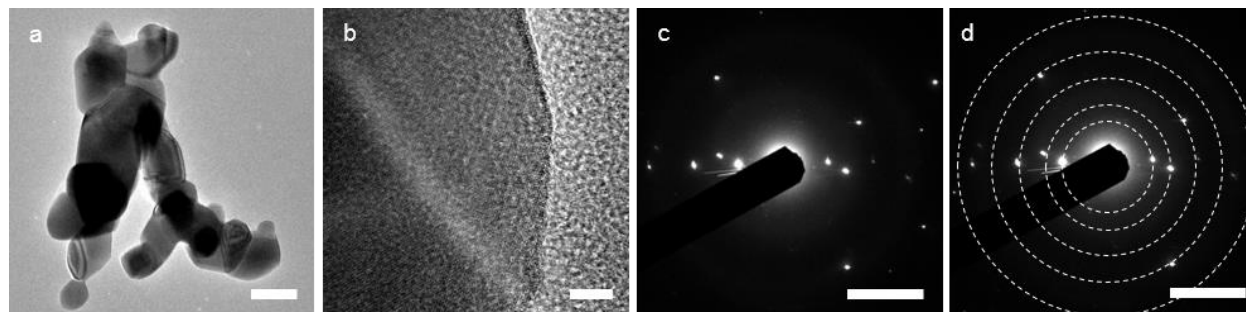


Figure S5. Transmission electron micrographs (a and b) and selected area electron diffraction patterns (c and d) of amorphous TiO<sub>2</sub> annealed at 750 °C for 1 hour. Rings in *d* correspond to the 110, 101, 121, 301, and 240 reflections of rutile (from inside out). Scale bars: *a*, 250 nm, *b*, 5 nm; *c*, 5 nm<sup>-1</sup>.