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$_2$ showing crystallized surfaces. Scale bars: 2 nm.

Figure S2. Transmission electron micrographs of amorphous TiO$_2$ 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$_2$, showing residuals of water and alcohol.

Figure S4. Transmission electron micrographs (a, b) and selected area electron diffraction pattern (c) of amorphous TiO$_2$ 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$^{-1}$.

Figure S5. Transmission electron micrographs (a and b) and selected area electron diffraction patterns (c and d) of amorphous TiO$_2$ 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$^{-1}$.