

Article

The Influence of a Surface Treatment of Metallic Titanium on the Photocatalytic Properties of TiO₂ Nanotubes Grown by Anodic Oxidation

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Supporting information

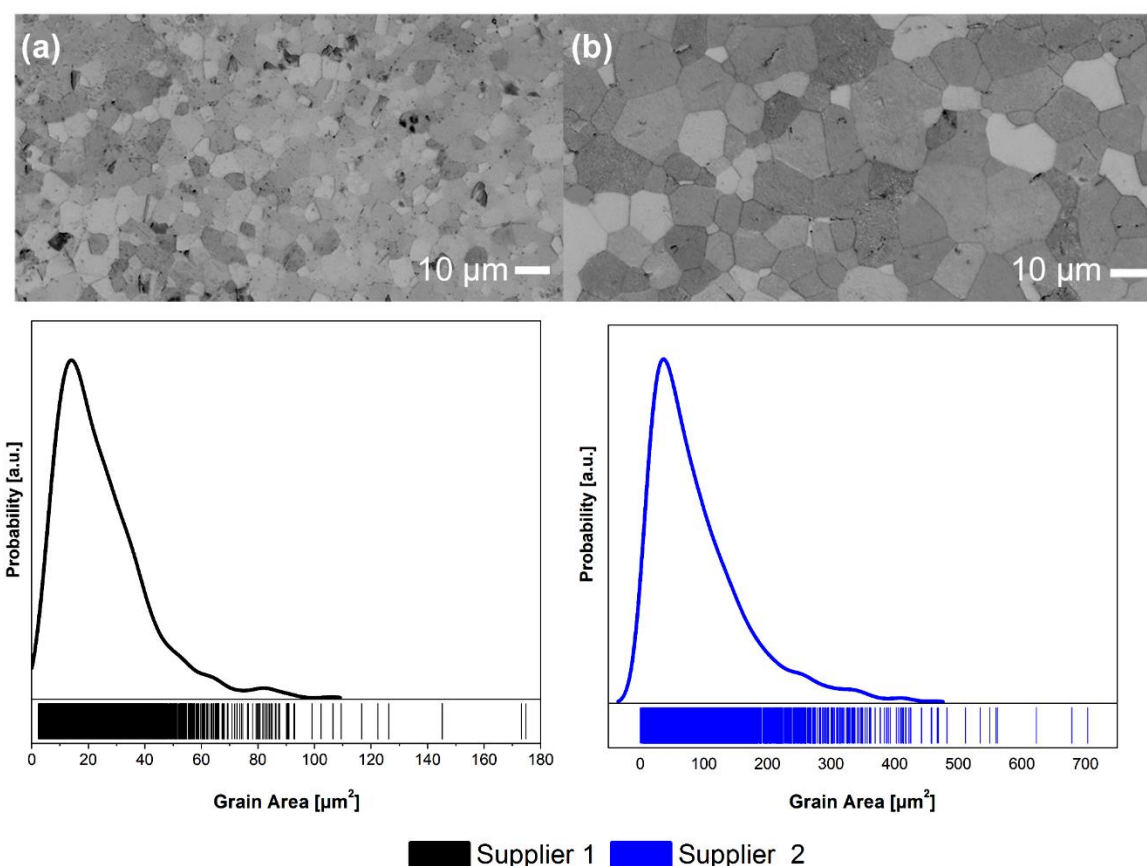


Figure S1. Optical microscope micrographs of chemically etched, electropolished titanium surfaces with the corresponding grain-area histogram for both titanium foil suppliers. (a) Titanium foil from Supplier 1 and (b) titanium foil from Supplier 2.

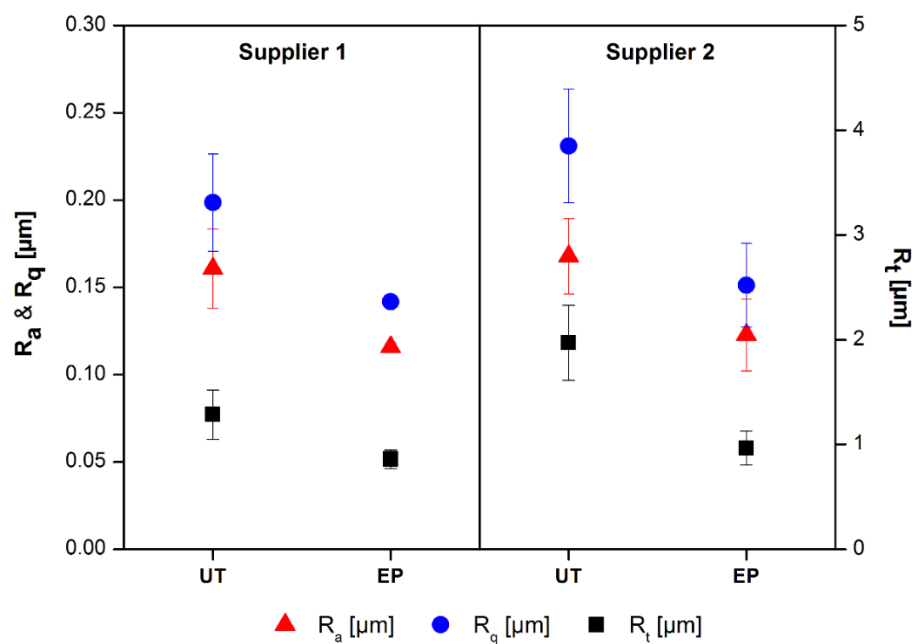


Figure S2. Measured roughness factors for both titanium foil suppliers; R_a – average arithmetical roughness, R_q – root-mean-square roughness, R_t – peak-to-valley roughness, UT – untreated, EP – electropolished.

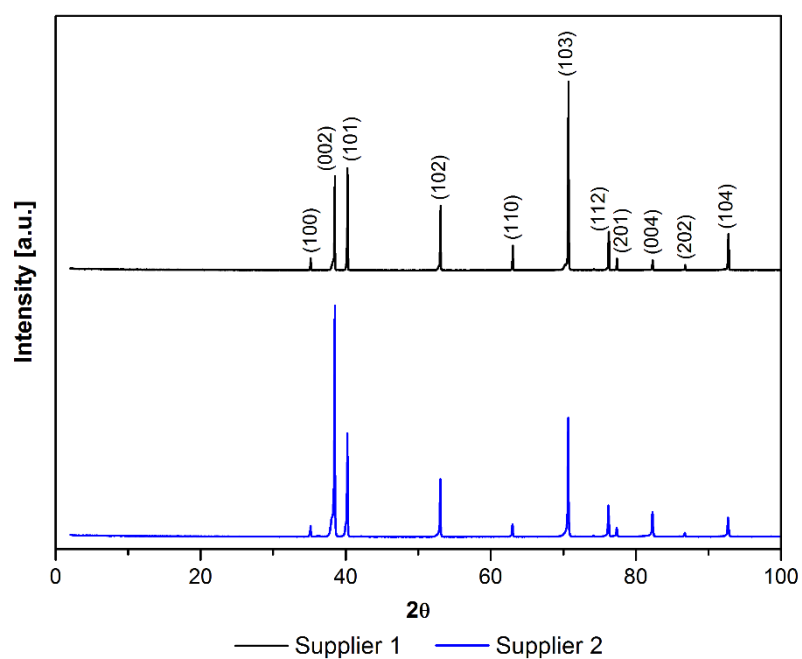


Figure S3. XRD pattern for both untreated titanium foils.

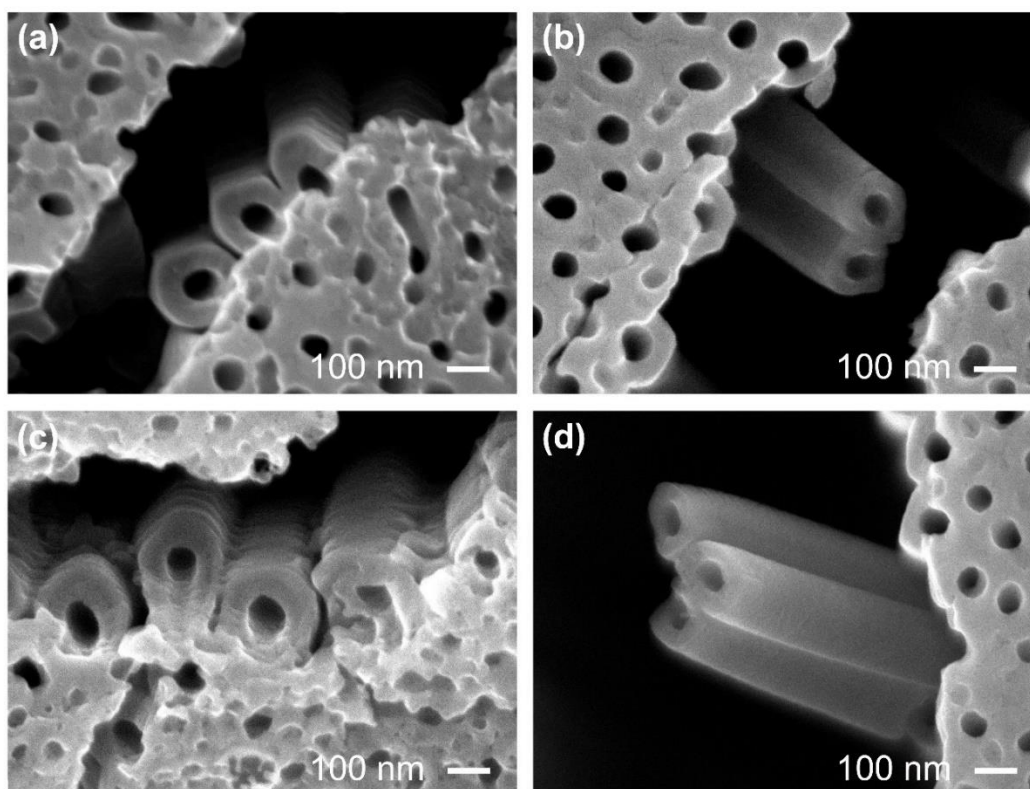


Figure S4. SEM micrographs of the anodized and annealed titanium foils showing (a) untreated and (b) electropolished titanium foil from Supplier 1. (c) Untreated and (d) electropolished titanium foil from Supplier 2.

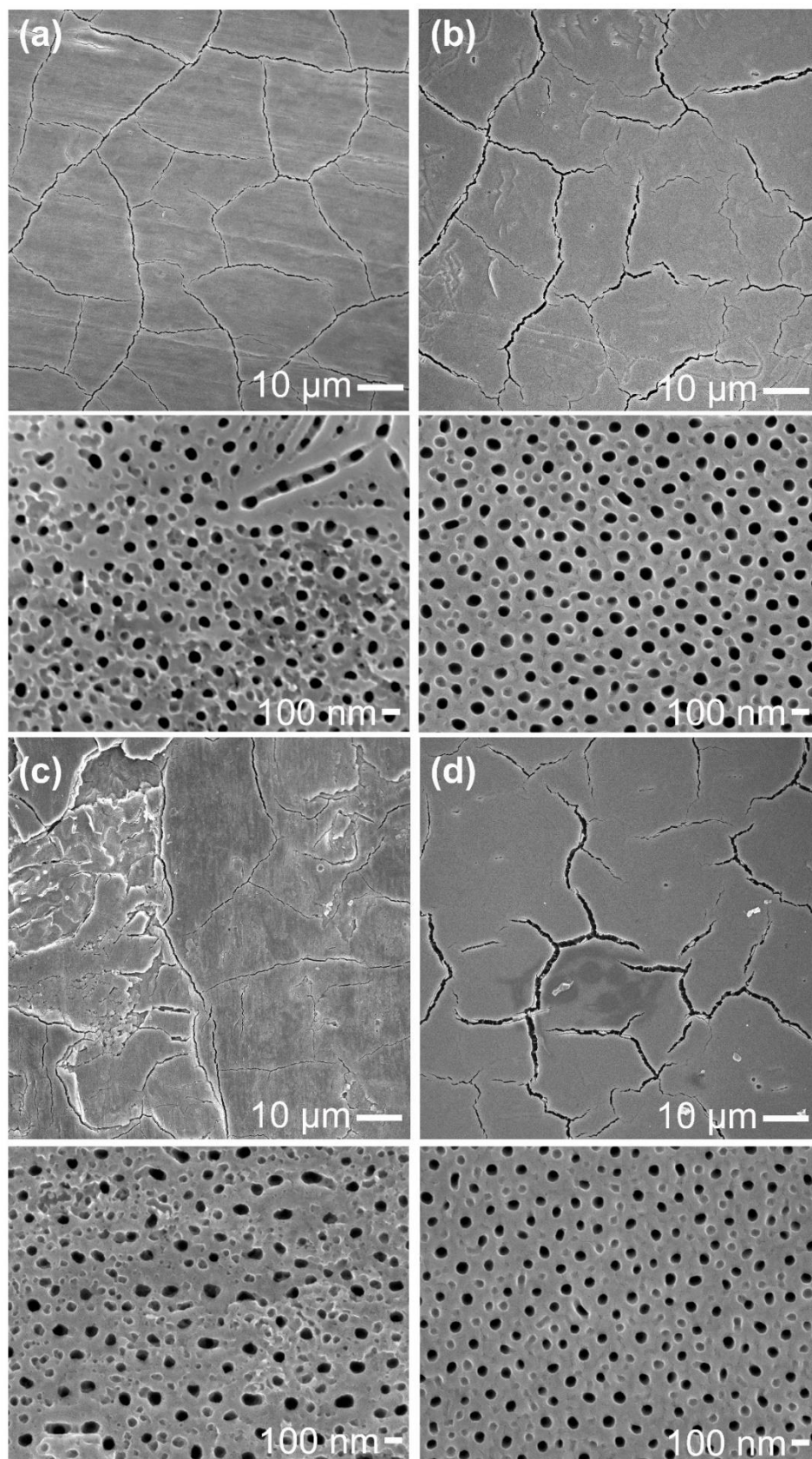


Figure S5. SEM images of the top surface of the annealed TiO₂ nanotube arrays. (a) Untreated and (b) electropolished titanium foil from Supplier 1. (c) Untreated and (d) electropolished titanium foil from Supplier 2.

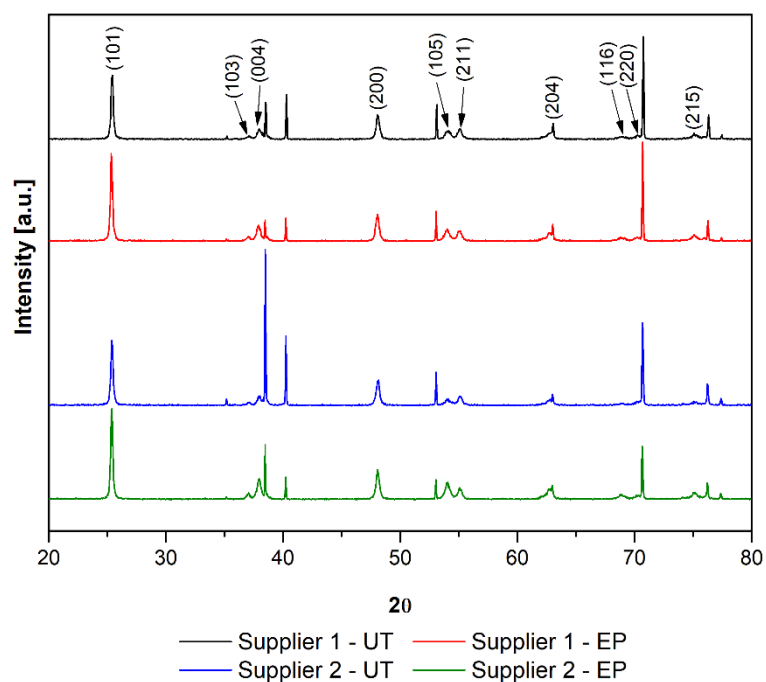


Figure S6. XRD patterns of annealed TiO₂ nanotube layers for untreated and electropolished samples of both suppliers. Unmarked peaks correspond to the titanium foil.

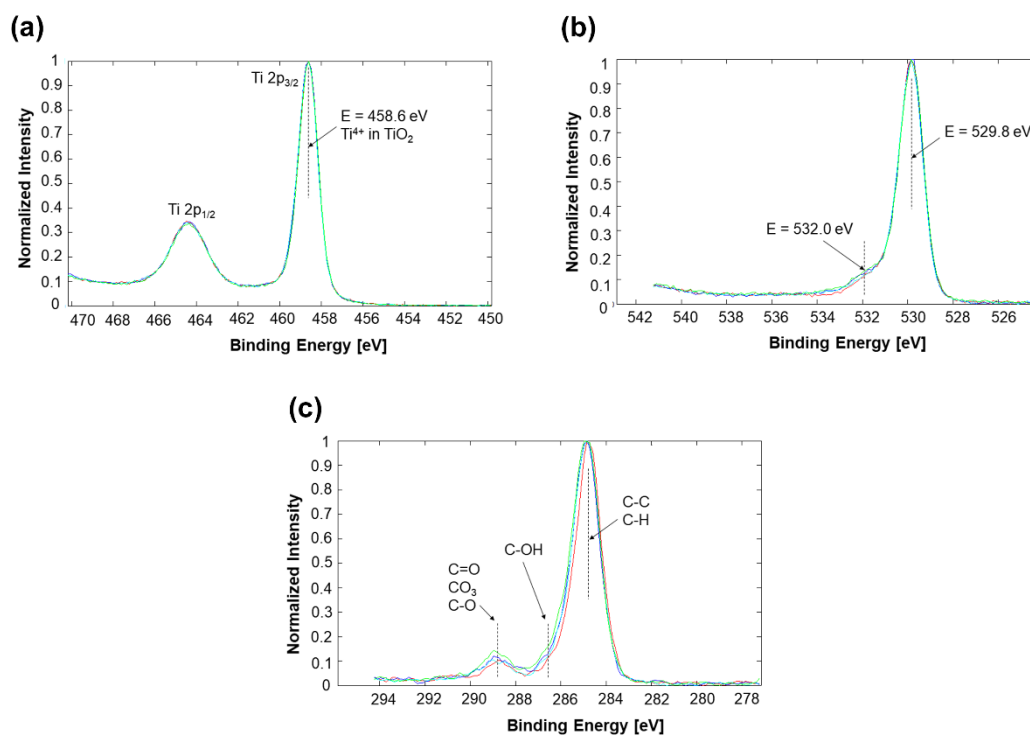


Figure S7. (a) Ti 2p, (b) O 1s and (c) C 1s spectrums from XPS measurement.

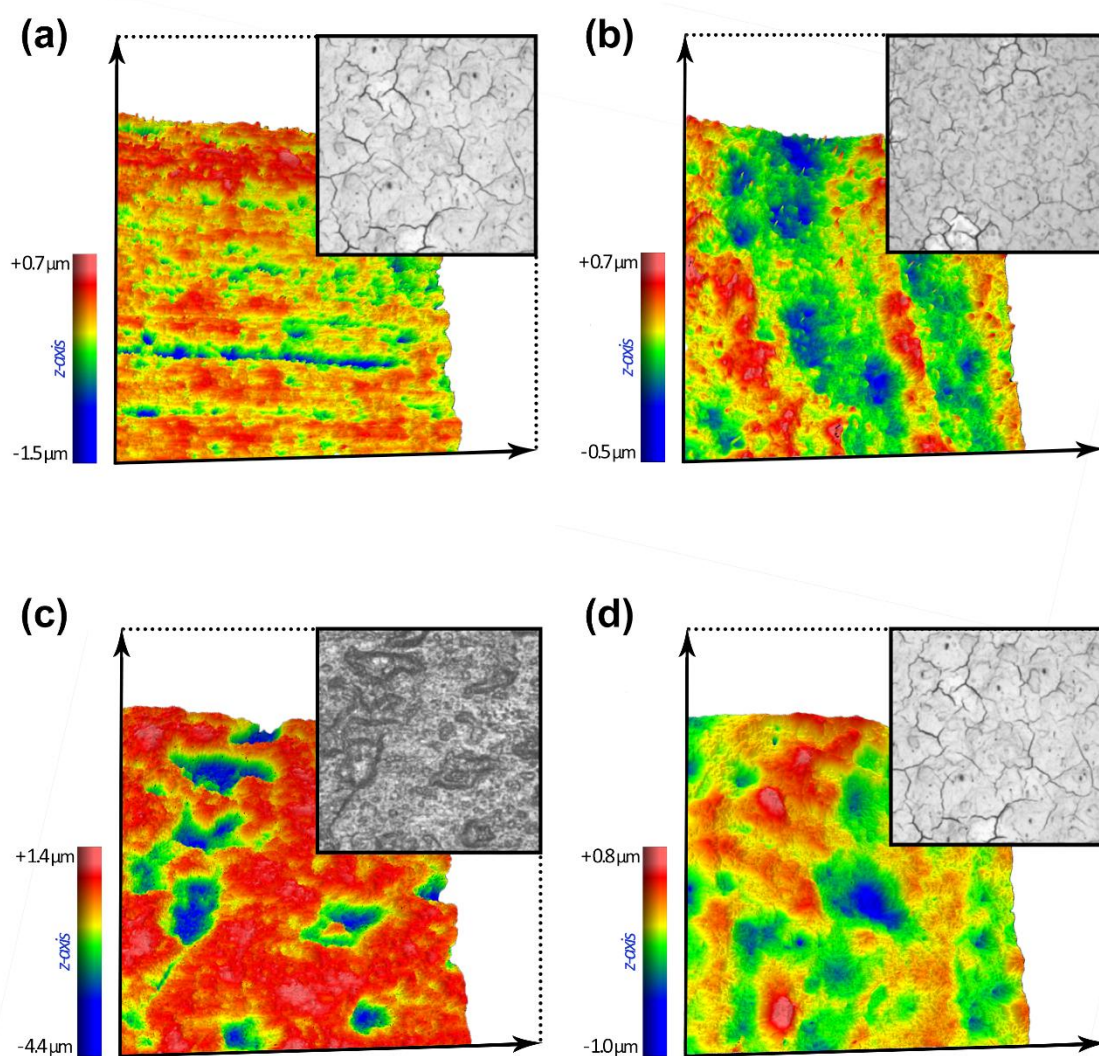


Figure S8. Average roughness evaluated over the complete 3D surface roughness of TiO₂ nanotube layers. (a) Untreated and (b) electropolished sample from Supplier 1 and (c) untreated and (d) electropolished sample from Supplier 2 are shown. Each inset is showing a captured TiO₂ nanotube layer surface as seen through camera on optical profiler.



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