

Wednesday, September 25 2019, 4:10-5:00PM, WEB 1230

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Tailoring the Anodically formed Titanium Nanotubes for Water Disinfection

There is a growing need for effective water disinfection devices, specifically in developing countries that cannot rely on energy intensive treatments. This work examines and evaluates anodically formed titanium oxide nanotube-based devices as a potential replacement for the less effective chemical and energy intensive disinfection treatment. The titanium oxide nanotube structures provide high surface area and adjustable properties. In this study, the anodically formed nanotubes are tailored for better electrocatalytic properties through annealing in different environments. Different annealing routes have distinctive effects on the morphology and properties of the anodically formed nanotubes. This study observed three different annealing routes and characterized the effects they have on the nanotubes. Characterization and electrochemical results assisted in selecting the treatment route that makes highly effective nanotubes to be used for disinfection devices.