

## Strongly Accelerated Growth Rate of Highly Ordered Anodic TiO<sub>2</sub> Nanotube Layers

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Today, most common for TiO<sub>2</sub> nanotube growth are NH<sub>4</sub>F-water-EG electrolytes that are routinely used for fabricating nanotube layers for solar cell or water splitting applications. The anodization time to grow tubes of a suitable length and quality for DSSCs and PWS is mainly determined by the applied volt-age and the electrolyte composition. For example, in order to form a 15µm thick layer suitable for DSSCs, using classic recipes it takes over 2h.

In the present work we introduce that self-organized TiO<sub>2</sub> nanotube layers can be electrochemically grown with an accelerated growth rate using an additive during anodization. As a result, e.g. 15µm tube thick nanotube layers, suitable for a use in dye-sensitized solar cells (DSSCs) and 7µm tubes suitable for water splitting can be grown in short time. The talk will discuss mechanisms of this 200 fold acceleration in growth rate as well as details on morphology and properties of the tubes.