

## عنوان مقاله:

A review on the Fabrication and material properties of TiO<sub>2</sub> nanotube arrays by anodization

## محل انتشار:

اولین کنفرانس بین المللی نفت، گاز، پتروشیمی و نیروگاهی (سال: 1391)

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## خلاصه مقاله:

We review the fabrication and properties of TiO<sub>2</sub> nanotube arrays made by anodic oxidation of titanium in fluoride-based electrolytes. The material architecture has proven to be of great interest for use in water photoelectrolysis and photocatalysis. We examine the ability to fabricate nanotube arrays of different shape (cylindrical, tapered), pore size, length, and wall thickness by varying anodization parameters including electrolyte concentration, pH, voltage, and bath temperature, with fabrication and crystallization variables discussed in reference to a nanotube array growth model. We review efforts to lower the band gap of the titania nanotubes by anionic doping. The article concludes by examining various practical applications of the remarkable material architecture, including its use for water photoelectrolysis.

## کلمات کلیدی:

Nanotube array, TiO<sub>2</sub>, Titania, Photoelectrolysis, Water photolysis

## لینک ثابت مقاله در پایگاه سیویلیکا:

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