

## عنوان مقاله:

Synthesis, Characterization, and Application of Zr,Ce-TiO<sub>2</sub>/SiO<sub>2</sub> Nanocomposite Thin Film as Visible-light Active Photocatalyst

## محل انتشار:

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تعداد صفحات اصل مقاله: 9

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## خلاصه مقاله:

A novel Zr,Ce-TiO<sub>2</sub>/SiO<sub>2</sub> nanocomposite thin film was successfully prepared with various amounts of Zr<sup>4+</sup> and Ce<sup>4+</sup> as codopant ions for self-cleaning applications. A thin film was coated on a tile substrate by dip-coating and porous Zr,Ce-TiO<sub>2</sub>/SiO<sub>2</sub> was obtained after heat treatment for 2 hours at 500 °C. The SEM images and XRD pattern showed that the optimum amount of doping ions in relation to Ti<sup>3+</sup> is 0.1%. In this circumstance, the most monotony of film was seen and the main formed phase was anatase. The sample structures were characterized by infrared spectroscopy. The nanocomposite films were found to be active for photocatalytic decomposition of methyl orange as an organic pollutant.

## کلمات کلیدی:

Codoped TiO<sub>2</sub>, Photocatalytic application, Self-cleaning, Visible light

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/792628>

