

Flexible flow through transition metal doped TiO₂ nanotubular film for photocatalytic applications

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Both side open flow through TiO₂ membrane has various applications such as filtering, photocatalysis, LED, artificial photosynthesis and sensing. However, TiO₂ film is fragile material, and fabricating flexible flow through film is a hard task. In this research we discuss fabrication of transition metal doped flexible nanotubular TiO₂ flow through film for photocatalytic applications. Photocatalytic properties were examined by photodegradation of Rhodamine B aqueous solution. Samples were characterized by Field Emission Scanning Electron Microscope (FESEM), X-Ray Diffractometry (XRD), confocal 3D microscope and UV-visible spectrophotometer. Both side open flow though geometry of films drastically improved photocatalytical activity of semiconductor. In addition, transition metal doping had significantly increased photodegradation rate of organic dyes.

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