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Author Chebg Chang Chou
Author's Email Address No Public.
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Abstract
In this study , high-surface-area structures were developed to improve the photocurrents of coated TiO2 films .Two kinds of structures were prepared: one by the photo-lithography and wet etch technique；the other by AAO and glancing angle deposition technique. The effects of prepared structures on the photocurrents of coated TiO2 films were investigated.
The morphologies of prepared structures were observed by a scanning electron microscopy. The photocurrents were measured by a potentiostat system.
The experimental results show that the photocurrent increases with increasing the aspect ratio of patterns generated by photo-lithography and wet etch technique. The photocurrent increased from 59.2 to 147.5 μA/cm2 with increasing the surface area from 0.25 to 0.51 cm2 . For the structures prepared by AAO and glancing angle deposition, the photocurrents of TiO2 films were increased from 61 to、85 μA/cm2 and from 59 to 111 μA/cm2 by using stainless steel and titanium as the deposited materials , respectively.
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