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Abstract
The purpose of this research is to investigate the application of large area TiO2 thin film electrode on dye-sensitized solar cell. The larger area of the TiO2 thin film electrode, the more the dyne can be absorbed. This helps to improve the efficiency of the cell by more electron carriers from the dyne.
In our experiment, the TiO2 electrode was grown by using RF sputter. From the thickness-meter we know that the thickness of TiO2 film can grow up to 150nm in 3 hours under 200W sputtering. After that we anneal it around 450 ℃ to obtain the Anatase crystal phase of TiO2 thin film electrode. Then we use the yellow light etching to develop the regular array of the electrodes, and finally we immerse the electrodes into the dyne to widen the light absorption area and put the platinum contact. We then inject the electrolyte in between the electrodes to complete the production of the dye-sensitized solar cell.
Our method provides the guide and the variation scheme for the various parameters in making the solar cell, also we have some breakthrough about the size of the cell.
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