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Yttrium doped TiO_2 nanotubes prepared by anodization method

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In this paper, we aim to characterize the microstructure of Yttrium doped TiO_2 nanotubes. These were successfully synthesized by anodization method on Ti sheets. The electrolyte was composed of ethylene glycol (EG), ammonium fluoride (0.3 % wt NH_4F) and deionized water (2% vol H_2O) with different concentrations of dopant Y_2O_3. A constant DC power supply of 50 V was used during anodization with anodizing times of 2 hours. The samples were investigated using X-ray diffraction (XRD) and scanning electron microscopy (SEM). The structural and morphological studies showed that TiO_2 nanotube arrays were highly ordered and the Yttrium ion dopant may be incorporated into interstitial positions of the TiO_2 sheets.

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