

Growth of Raspberry-like and Sphere-like TiO₂ Nanostructures by Controlled Agglomeration of TiO₂ Nanocrystals

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Abstract

TiO₂ single crystals of 10-15 nm size were synthesized using a one-pot solvothermal chemical reaction. Controlled agglomeration of the nanocrystals could be achieved to produce nanospheres and raspberry-like TiO₂ nanostructures with different sizes (50-200 nm) and with good monodispersion. X-Ray Diffraction, Scanning Electron Microscopy, Transmission Electron Microscopy and N₂ adsorption-desorption isotherms measurements were carried out for the grown nanostructures. Results on dye-sensitized solar cells fabricated using the grown nanostructures of different sizes and shapes will also be presented.