Q086 Controlled Synthesis of Tin Oxide Nanostructures by Water-assisted Method

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Abstract: Tin oxide nanostructures, such as nanobelts, nanowires, special homogeneity structures and tetrahedrons, were synthesized by water-assist method in a tube furnace. The physics phase and the morphologies of the as-synthesized sample were characterized by XRD and SEM, respectively. The results show that the products are the tetragonal rutile structure of SnO₂, different morphologies of SnO₂ from the different zone of the three experiments were observed by SEM. The morphologies of the SnO₂ nanostructures can be synthesized by tuning heat temperature, deposit positions, Ar flow rate and substrates. The growth mechanisms of the different morphologies were discussed.

Keywords: Tin Oxide; Nanostructures; Water-assisted Method