

## **Low temperature hydrothermal synthesis of monodispersed flower-like titanate nanosheets**

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**Abstract:** Monodispersed flower-like titanate superstructure was successfully prepared by simple hydrothermal process without any surfactant or template. N<sub>2</sub>-sorption analysis, scanning electron microscopy (SEM), and X-ray diffraction (XRD) observation of as-synthesized product revealed the formation of flower-like titanate with diameter of about 250-450 nm and BET surface area (S(BET)) of 350.7 m<sup>2</sup> g<sup>-1</sup>. Upon thermal treatment at 500 degrees C. the titanate nanosheets were converted into anatase TiO<sub>2</sub> with moderate deformation of their structures. The as-prepared flower-like titanate showed high photocatalytic activity for H<sub>2</sub> evolution from water splitting reaction. Moreover, the sample heat treated at 500 degrees C exhibited higher photocatalytic activity than that of commercial TiO<sub>2</sub> anatase powder (ST-01). (c) 2008 Elsevier B.V. All rights reserved.

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