

# Download Free Synthesis Of Zno Pt Nanoflowers And Their Photocatalytic

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SYNTHESIS OF ZNO NANOFLOWERS AND THEIR WETTABILITIES AND PHOTOCATALYTIC PROPERTIES X.D. Guo<sup>1</sup>, L. E. Heleseth<sup>1</sup>, Q.Z. Zhao<sup>2</sup> <sup>1</sup> Department of Physics and Technology, University of Bergen, Allégaten 55, 5007 Bergen, Norway <sup>2</sup> State Key Laboratory of High Field Laser Physics, Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai 201800, China

Abstract Recently, we reported one pot synthesis of ZnO nanoflowers (ZnO-NFs) by using asymmetric Zn(II) dimeric complex,  $[Zn(hmp-H)_2(H_2O)(\mu-Cl)Zn(\mu-Cl)(Cl)_3]$ , (A),  $[hmp-H=2-(2-hydroxymethyl)pyridine]$  as a single molecular precursor at room temperature (RT).

### Synthesis and Applications of Nanoflowers | Bentham Science

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### Template- and Surfactant-free Room Temperature Synthesis ...

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Xiaodong Guo, Quanzhong Zhao, Ruxin Li, Huaihai Pan, Xiaoyang Guo, Anyuan Yin, and Weilin Dai, "Synthesis of ZnO nanoflowers and their wettabilities and photocatalytic properties," Opt. Express 18, 18401-18406 (2010)

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resultant ZnO-Pt nanoflowers were demonstrated in the photodegradation of ethyl violet. In comparison with the commercial TiO<sub>2</sub> photocatalyst P25, the ZnO-Pt flowerlike nanostructures showed improved catalytic efficiency. Notable ferromagnetism of the obtained ZnO-Pt flowerlike nanostructures was also observed. Synthesis and electro-catalytic activity of Pt-Co nanoflowers. The

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Pt-ZnO nanoflowers are prepared via a one-step hydrothermal route with low cost. Pt nanoparticles are uniformly distributed on the surface of ZnO nanoflowers.

Synthesis of ZnO nanoflower Nanoflower shaped ZnO powder was synthesized using hydrothermal method. 0.2 M zinc nitrate hexahydrate solution was added to 0.8 M NaOH solution. After constant stirring the resultant solution was transferred to 100 ml Teflon beaker covered by Stainless steel autoclave.

3D Pt nanoflowers, which are composed of numerous single-crystal nanowires, are successfully synthesized by a facile chemical procedure, at room temperature, without surfactant or template. The Pt nanoflowers adhere to carbon paper, exhibiting an enlarged electroactive surface area comparable to that of a commercial Pt/C electrode.

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The resultant nanoflowers had well defined ZnO-Pt interfaces and exposed Pt {100} facets, as confirmed by transmission electron microscopy (TEM) and high-resolution TEM (HRTEM) measurements. The photocatalytic behaviors of the resultant ZnO-Pt nanoflowers were demonstrated in the photodegradation of ethyl violet.

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