Synthesis Of Zno Pt Nanoflowers And Their Photocatalytic

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Synthesis Of Zno Pt Nanoflowers

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.

Synthesis of ZnO-Pt nanoflowers and their photocatalytic ...

Herein, we report the successful synthesis of unique ZnO–Pt flowerlike heterostructures that possess both well defined ZnO–Pt interfaces and exposed Pt facets. Truncated octahedral Pt nanocrystals, which are enclosed by both {111} and {100} facets, were selected as the seeds.

Synthesis of ZnO--Pt nanoflowers and their photocatalytic ...

The red shift of the PL emission of the ZnO–Pt nanoflowers indicates the electron transfer between ZnO and Pt as the result of the well established ZnO–Pt interface. The increase in coercivity of the ZnO–Pt nanoflowers as compared to their simple mixture counterpart also supported the existence of the ZnO–Pt interface.

Synthesis of ZnO–Pt nanoflowers and their photocatalytic ...

The photocatalytic behaviors of the resultant ZnO–Pt nanoflowers were demonstrated in the photodegradation of ethyl violet. ... T o date, synthesis of ZnO–Pt heterostructures for optimized.

(PDF) Synthesis of ZnO–Pt nanoflowers and their ...

Pt−ZnO nanoflowers are prepared via a novel one-step hydrothermal route, and Pt nanoparticles are uniformly loaded on the whole surface of the nanoflowers. The growth mechanism of Pt−ZnO nanoflowers is proposed to be a four-stage process. With the help of Raman scattering, photoluminescence, and gas sensing measurements, it has been demonstrated that the optical and sensing properties of ...

Enhanced Optical and Sensing Properties of One-Step ...

Raman and PL analysis of the as-prepared ZnO nanoflowers and nanorods (samples 1 and 3) are performed to examine the defects in them. The Raman spectra of the ZnO nanoflowers and the ZnO nanorods at the range of 200–800 cm −1 are both shown in Fig. 7. The dominant feature at 437 cm −1 is the result of ZnO nonpolar optical phonons E 2 ...

Controllable synthesis of ZnO nanoflowers and their ...

We then successfully synthesized HEB-1 nanoflowers by a facile molten salt synthesis ... zinc oxide (ZnO) with ... both ends by FIB grown Pt contacts, (ii) nanoflowers,ie specially shaped ...

(PDF) A Review for Synthesis of Nanoflowers

2.1. Synthesis of Ag/ZnO nanoflowers. Analytical grade chemicals of Merck were used without further purification. In a typical synthesis, 25 mL aqueous solution of zinc acetate dihydrate (0.04 M) and equal volume of silver nitrate (0.001 M) were taken in a 400 mL beaker.

Rapid one pot synthesis of Ag/ZnO nanoflowers for ...
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.

Template- and Surfactant-free Room Temperature Synthesis ...
@inproceedings{Khodair2012SYNTHESISAS, title={SYNTHESIS AND STUDY OF ZnO NANORODS AND Fe-DOPED ZnO NANOFLOWERS BY ATMOSPHERIC PRESSURE CHEMICAL VAPOR DEPOSITION (APCVD) TECHNIQUE}, author={Ziad T. Khodair and A. R. Alsrraf and M. Manssor and N. A. Bakr}, year={2012} } In this study, undoped zinc ...

SYNTHESIS AND STUDY OF ZnO NANORODS AND Fe-DOPED ZnO ...
ZnO nanostructures, including single-crystal nanowires, nanoneedles, nanoflowers, and tubular whiskers, have been fabricated at a modestly low temperature of 550 °C via the oxidation of metallic Zn powder without a metal catalyst. Specific ZnO nanostructures can be obtained at a specific temperature zone in the furnace depending on the temperature and the pressure of oxygen.

Synthesis and Synchrotron Light-Induced Luminescence of ...
BACKGROUND. The synthesis and application of novel zinc micro/nanostructures are of increasing importance in modern nanotechnology. RESULTS. This paper reports the large scale synthesis of zinc oxide micro-flowers (ZnOMFs) using precipitation assisted by Cinnamomum camphora leaf extract (C. camphora) at relatively low temperatures ≤ 80°C.The results showed that the ZnOMFs consisted of ...

Synthesis of ZnO micro-flowers assisted by a plant ...
2.1 Synthesis of ZnO Nanostructures. All chemicals were of analytical grade and were used without further purification. ZnO nanoflowers (NFs) were synthesized using a seeding procedure prior to the growth. The seed solution, containing 0.15 M of Zn(CH 3 COO) 2 •2H 2 O in 20 ml of an ethanol-water mixture (70:30 %v/v), was stirred for 1 h at ...

ZnO nanoflowers-based photoanodes: aqueous chemical ...
Abstract: ZnO nanoflowers were synthesized using simple wet chemical approach, upon which nanoscale ZnS was deposited through pseudo successive ionic layer adsorption and reaction (p-SILAR). The process was optimized by increasing the number of p-SILAR cycles. The average size of ZnO nanoflowers was determined using particle size analysis technique and was found to be 600 nm.

Synthesis and Characterization of ZnO-ZnS Nanoflowers for ...
The focus of this study has been to use a biologically mediated, low temperature approach for the synthesis of zinc oxide nanoflowers. “Green” methods have a number of advantages over conventional approaches; these include the use of environmentally benign reactants and its economic feasibility.

Synthesis and characterization of ZnO nanoflowers using ...
Platinum nanoflowers (Pt NFs) composed of an ordered assembly of nanoparticles were synthesized by an ethanol reduction of [PtCl 6] 2-under a reflux condition (85 °C) at pH 2.5 in the presence of PVP (molecular weight 10,000) as a structure-directing agent. Optical and transmission electron microscopic (TEM) studies confirmed the reduction of [PtCl 6] 2-into Pt 0 followed by its growth to ...

A Facile Synthesis of Pt Nanoflowers Composed of an ...
ZnO 1D necklace-like nanostructures (NNS) could be prepared through a hydrothermal treatment of zinc acetate and urea mixture together with a subsequent calcination procedure at 400 °C. While replacing the acetate ions to nitrate, sulfate, and chlorion ions produced ZnO nanoflowers, nanosheets and hexagonal nanoplates, respectively.

Anion-Regulated Synthesis of ZnO 1D Necklace-Like ...
Pure and Pt-doped ZnO nanophase particles were synthesized by ultrasonic spray pyrolysis. The

particles were obtained through the decomposition of zinc nitrate and with a newly developed Pt(IV) complex with 1,3-propylenediamine-N,N ′-diacetate tetradentate class ligand (pdda).The complex was characterized by elemental analysis, electronic absorption and infrared spectroscopy.

Aerosol Synthesis of Pure and Pt-Doped ZnO Particles Using ...
Synthesis of ZnO-Pt nanoflowers and their photocatalytic applications. Yuan J, Choo ES, Tang X, Sheng Y, Ding J, Xue J. Nanotechnology, 21(18):185606, 14 Apr 2010 Cited by: 9 articles | PMID: 20388976