

Indian Journal of Chemistry
Sect. A: Inorganic, Bio-inorganic, Physical, Theoretical & Analytical

www.niscair.res.in; http://nopr.niscair.res.in
 CODEN: ICACEC; ISSN: 0376-4710 (Print), 0975-0975 (Online)

VOLUME 56A

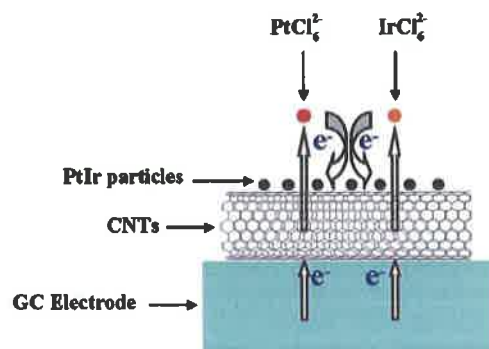
NUMBER 10

OCTOBER 2017

CONTENTS

1007 Electrodeposition of platinum-iridium nanoparticles on carbon nanotubes and their electrocatalytic oxidation of glucose

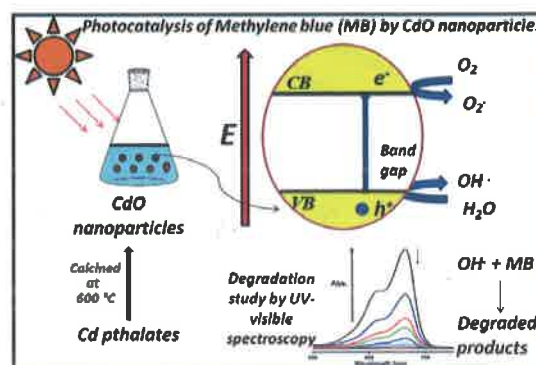
Highly dispersed PtIr nanoparticles have been electrodeposited on carbon nanotubes by potentiostatic method in 0.5 M H₂SO₄+0.5 M glycerol aqueous solution. The PtIr (1:1) NPs/CNTs catalyst exhibits excellent electrocatalytic activity and stability towards glucose oxidation. CV results show that the PtIr (1:1) NPs/CNTs/GC electrode exhibits better electrocatalytic activity than PtIr(3:1)NPs/CNTs/GC, PtIr(1:3)NPs/CNTs/GC, and Pt NPs/CNTs/GC electrodes.



Bohua Wu*, Jiajin Zhu, Xue Li, Ting Zhou,
 Liqiu Mao & Shanxin Xiong

1014 Phthalate precursor mediated synthesis of cadmium oxide nanoparticles and their photocatalytic application

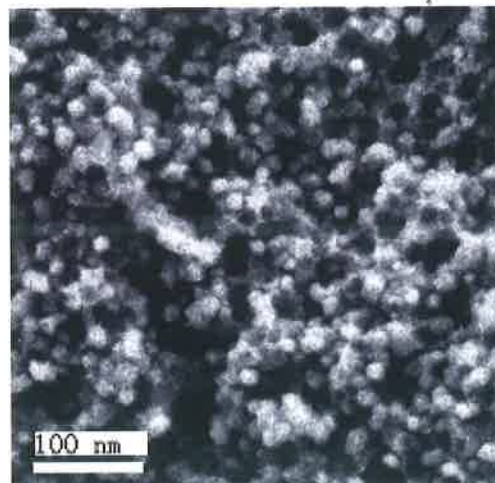
Cadmium oxide samples have been prepared by the thermal decomposition of the precursors, [Cd(pht)(H₂O)], [Cd(pht)(Im)(H₂O)_{0.5}], [Cd(pht)(MeIm)], and [Cd(pht)(bpy)(H₂O)₂]. The particle size of CdO nanoparticles ranges from 53–62 nm as evident by PXRD, SEM, and TEM studies. The band gap values for CdO samples are in the range 1.95–1.98 eV. The photolytic degradation rates of methylene blue by the thus prepared CdO samples are inversely proportional to the crystallite size.



Dattaprasad D Narulkar, Teena A Jalmi Gaude &
 Sunder N Dhuri*

1021 Preparation characterization and photocatalytic activity of silicon and sulfur codoped mesoporous titanium dioxide photocatalyst

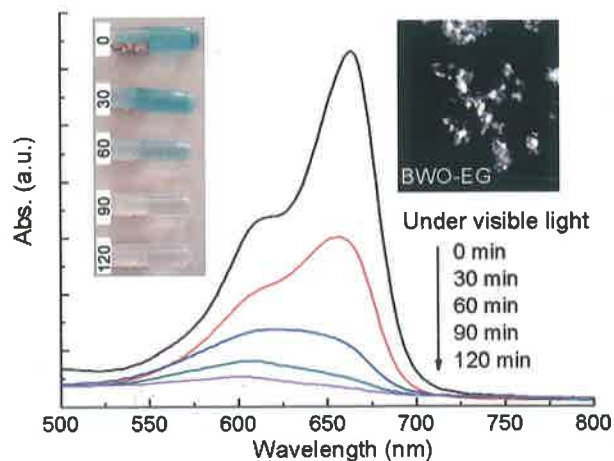
Silicon and sulfur codoped mesoporous titanium dioxide photocatalysts have been synthesized. Higher degradation percentage of methyl blue has been achieved with these photocatalysts with 1 mol% silicon and 2 mol% sulfur codoped photocatalyst showing the highest photocatalytic activity.



Zhongliang Shi, Xu Wang & Shuhua Yao*

1028 Structure and photocatalytic activity of bismuth tungstate nanoparticles synthesized by one-step solvothermal method

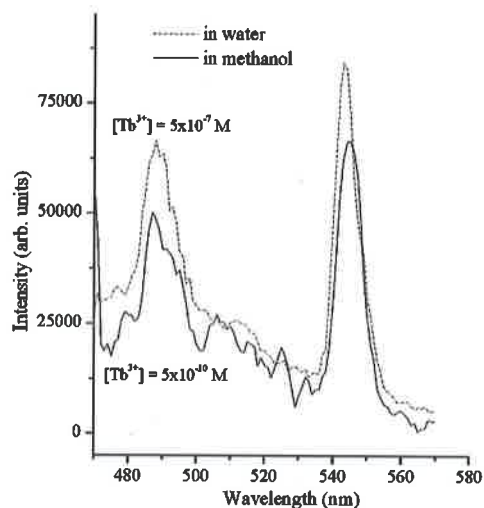
Bi_2WO_6 photocatalysts have been synthesized by solvothermal method in various solvents, viz., water, methanol and ethylene glycol. As compared to water and methanol, higher degradation of methylene blue has been achieved over the Bi_2WO_6 sample prepared in ethylene glycol, due to its appropriate energy band structure, small crystallite size, and high surface area.



Xiang-Hui Zhang

1034 Estimation of Tb^{3+} by mellitic acid sensitized luminescence in methanol

Mellitic acid sensitized luminescence of Tb^{3+} in methanol exhibits a strong emission which is about 500 times more intense than that observed in water. Under optimal conditions, the luminescence intensity exhibits excellent linear relationship in the concentration range of 5×10^{-10} – 5×10^{-8} M with a detection limit of 3×10^{-11} M.

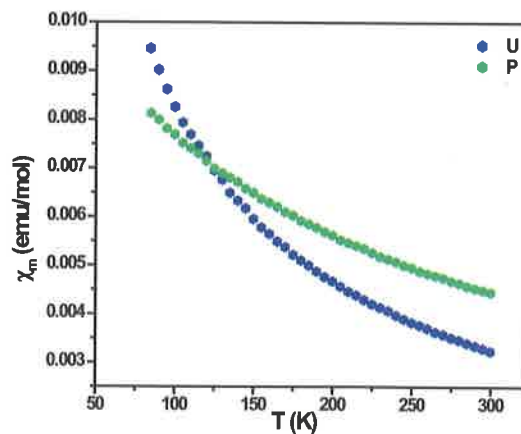


S Maji*, Satendra Kumar & K Sankaran

Notes

1041 Structural and magnetic characterization of nanocrystalline $LaFeO_3$ synthesized by low temperature combustion technique using different fuels

Synthesis of nanocrystalline $LaFeO_3$ with fine particle size by combustion method in the absence of water or any other solvent is reported with urea or polyvinyl alcohol as combustion fuels. With urea, average grain size as fuel is smaller, while specific surface area is larger with polyvinyl alcohol. Both the phases show antiferromagnetic behavior and antiferromagnetic interactions are dominant in the phase synthesized by polyvinyl alcohol. Anti-ferromagnetic behavior of the samples may be due to super-exchange $Fe^{3+}-O^{2-}-Fe^{3+}$ interactions.



Suram Singh & Devinder Singh*

1048 Guide to Authors

Authors for correspondence are indicated by (*)