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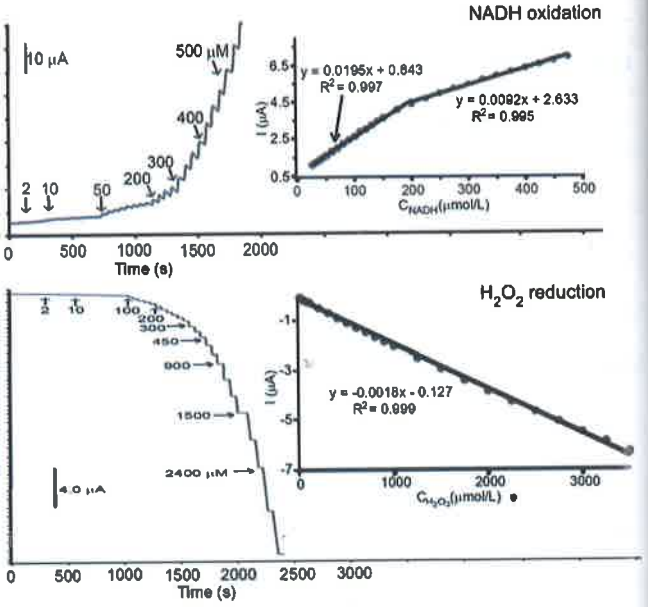
1302 Thionine-functionalized graphene oxide nanosheet as an efficient electrocatalyst for NADH oxidation and H_2O_2 reduction

Ali A Ensafi*, Navid Zandi-Atashbar, Zeynab Ahmadi Sarsahra & Behzad Rezaei

Thionine-functionalized graphene oxide has been used as an efficient electrocatalyst in the detection of hydrogen peroxide and nicotinamide adenine dinucleotide under the optimum conditions of pH 3.0 (PBS, 0.1 mol L^{-1}), 20 wt% of the modifier, and working potential of 0.24 V for oxidation of NADH and 0.00 V for reduction of H_2O_2. Two linear ranges of 2.0–200 μmol L^{-1} and 200–500 μmol L^{-1} and a detection limit of 0.43 μmol L^{-1} are obtained for NADH analysis. For H_2O_2 these are respectively 2.0–3500 μmol L^{-1} and 1.3 μmol L^{-1}.

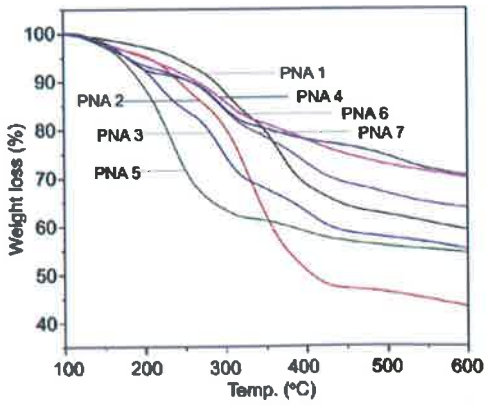


Notes

1310 Novel acrylate polymer nanocomposites with nano CdS

Nirmal N Patel, Kaushal P Patel * & Rajnikant M Patel

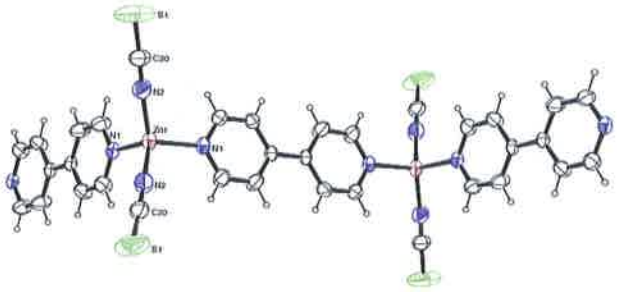
Polymeric nanocomposites of CDMPA and PCPMA with nano CdS are synthesized by in-situ technique. XRD studies show cubic structured nanocrystalline polymer nanocomposites with crystalline size in the range of 2.41–3.16 nm. Activation energy for thermal decomposition of polymer nanocomposites is less than that of the virgin polymers. The polymer nanocomposites are thermally less stable than the virgin polymers.



1317 **A green polymeric zinc(II) complex: Synthesis, structural characterization, and theoretical studies**

Abhijit Pal, Sarat Chandra Kumar, Partha Mitra, Shubhamoy Chowdhury* & Rajarshi Ghosh*

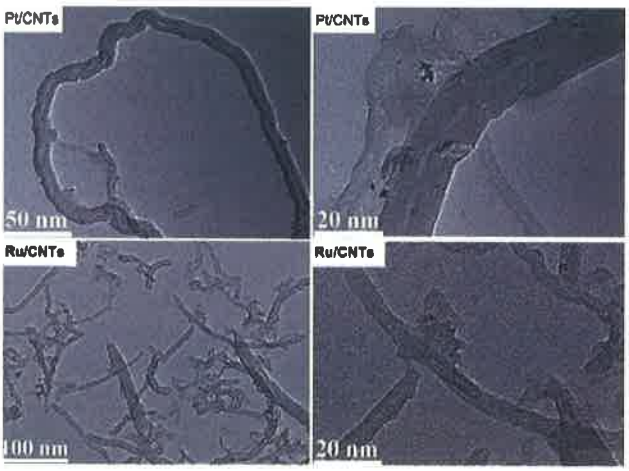
Synthesis and X-ray structural characterization of a Zn(II) polymer $[Zn(NCS)_2(L)]_n$ [L = 4,4′-bipyridine] is reported. The compound, having Zn(II) with d^{10} electronic configuration at the centre of each monomeric unit, shows green colour at λ_{max} = 648 nm. MO energy calculations show that the HOMO-LUMO energy difference gradually decreases from monomeric to tetrameric units. These calculations show that ~13 molecular units are responsible for the experimentally observed green colour of the Zn(II) polymer.



1321 **Preparation and catalytic property of carbon nanotubes supported Pt and Ru nanoparticles for hydrogenation of aldehyde and substituted acetophenone in water**

Zhiwang Yang*, Cheng Lei, Wenlong Chen, Ruxue Liu, Hong Wei, Yali Ma, Shuangyan Meng, Shaoping Hu & Yuli Wei

Pt and Ru nanoparticles are deposited on carbon nanotubes by a simple wet impregnation method using aqueous solutions of platinum and ruthenium salts to prepare the supported catalysts, Pt/CNTs (5 wt%) and Ru/CNTs (10 wt%). Pt/CNTs and Ru/CNTs are highly active and chemoselective catalysts for the aqueous-phase hydrogenation of aldehydes and substituted acetophenones. The use of water as the reaction medium makes these catalytic systems environmentally friendly.



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