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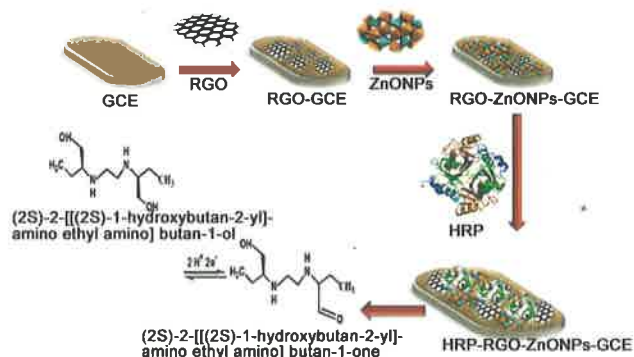
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CONTENTS

887 A novel electrochemical biosensor for the detection of ethambutol

Fabrication of glassy carbon electrode with ZnONPs-RGO nanocomposite, immobilized with HRP-enzyme, is reported for voltammetric determination of ethambutol. The HRP-ZnONPs-RGO-GCE exhibits high electrooxidation of ethambutol in phosphate buffer at pH 7.0, with a significantly enhanced electrochemical signal. The electrode shows an oxidation peak at -0.2 V with CV. Under the optimized conditions, the DPV technique gives good limit of detection and limit of quantification values of $0.0214 \mu\text{M}$ and $0.6713 \mu\text{M}$ respectively.



Rajasekhar Chokkareddy, Natesh Kumar Bhajanthri & Gan G Redhi*

896 Prussian blue/superactivated carbon composite-modified electrode for detection of *p*-phenylenediamine

Prussian blue/superactivated carbon composite-modified electrode composite shows high electrocatalytic activity towards oxidation of *p*-phenylenediamine. DPV shows a linear increase in current with concentration of *p*-phenylenediamine in the range of 2×10^{-7} to 1×10^{-3} M, with a detection limit of 6.47×10^{-8} M ($S/N = 3$). The relative standard deviation of the wastewater samples is $< 6\%$ and the recovery rate is 97–104%.

Manufacturing process



Chemical reaction

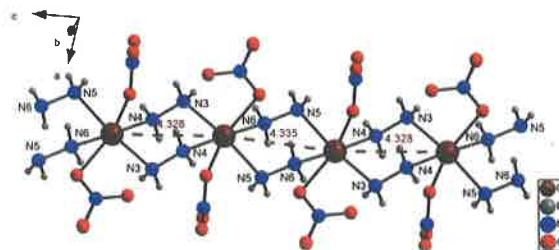


Lin Hu*, Jin qing Li*, Xiao qin Zhou, Tong tong Bai, Qu jin Cui, Juan Tang & Wen yuan Xu

Notes

905 Synthesis and structure characterization of two cadmium coordination polymers based on μ_2 -bridging bidentate hydrazine ligand

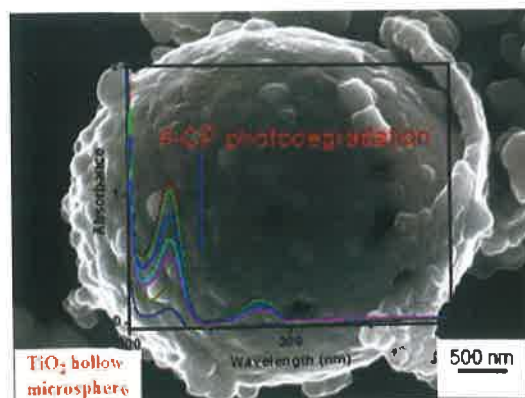
Two cadmium coordination polymers, viz., $[\text{Cd}(\text{NO}_3)_2(\text{N}_2\text{H}_4)_2]$ (**1**) and $[\text{Cd}(\text{C}_3\text{H}_2\text{O}_4)(\text{N}_2\text{H}_4)]$ ($\text{C}_3\text{H}_2\text{O}_4$: malonate) (**2**), exhibit bidentate bridging mode of unique hydrazine ligand, forming Cd_2N_4 six-membered ring motifs. Compound **1** crystallizes in the triclinic space group P-1, while compound **2** crystallizes in the monoclinic crystal system with $\text{P}2_1/c$ space group.



D Santhosh Shanthakumar, R Pradeep, B Subramani & B N Sivasankar*

910 Sol-gel synthesis of mesoporous hollow titania microspheres for photodegradation of 4-chlorophenol

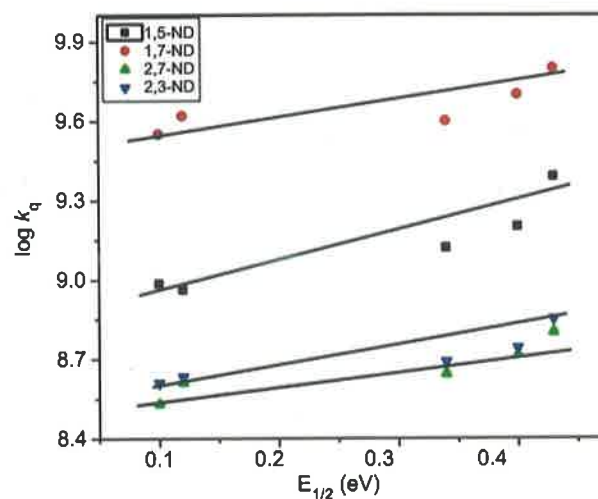
Mesoporous titania hollow microspheres prepared by sol-gel method show $\sim 90\%$ photodegradation of the water pollutant 4-chlorophenol, within 1 h. The photocatalytic reaction shows pseudo-first order reaction with a rate constant of 0.027 min^{-1} . The material is reusable for another three cycles with no significant loss of activity.



Ipsita Hazra Chowdhury & Milan Kanti Naskar*

915 Electron transfer fluorescence quenching of naphthalenediols by metal ions

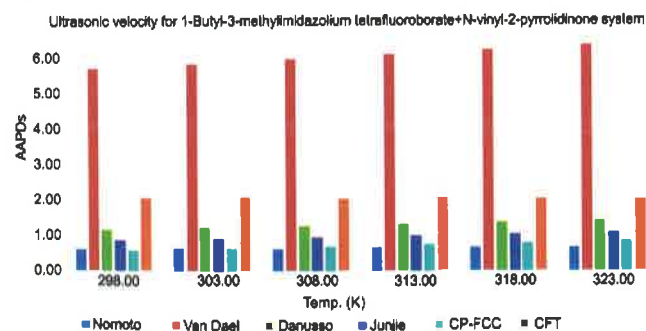
Fluorescence quenching of four naphthalenediols (1,5-; 1,7-; 2,7-, 2,3-NDs) by transition metal ions (Cu^{2+} , Co^{2+} , Ni^{2+} , Mn^{2+} , Zn^{2+} , Pb^{2+}) in 95% water-ethanol mixture reveals the electron transfer quenching mechanism via a non-emissive exciplex with electron transfer from excited fluorophore to the metal ions. Cu^{2+} is found to be an efficient quencher with all naphthalenediols, while the sensitivity of 1,7-ND fluorescence is much higher than that of other naphthalenediols.



Nachiappan Radha & Meenakshisundaram Swaminathan*

920 Acoustical and optical properties of binary liquid mixtures: A comparative study

A comparative study, employing a number of predictive approaches is carried out for evaluating ultrasonic velocity for 82 binary systems and refractive index for 76 binary systems, taking AAPD as the criterion for their predictive capability. AAPD values suggest that for ultrasonic velocity the Nomoto approach show the least deviation, i. e., values closest to experimental findings, while Van Deal approach gives the highest deviation. All the approaches are equally effective in predicting the refractive index.



Ranjan Dey*, Praveen Rangnath P, Kartikeya Tiwari & Aditya P Pandey

927 Guide to Authors

Authors for correspondence are indicated by (*)

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