

**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

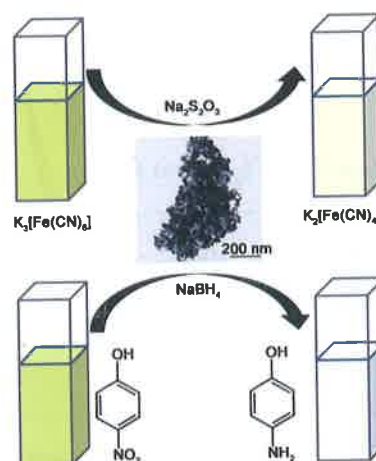
NUMBER 11

NOVEMBER 2017

**CONTENTS**

**1111 Catalytically active network-like gold nanostructures:  
 Synthesis and study of growth mechanism**

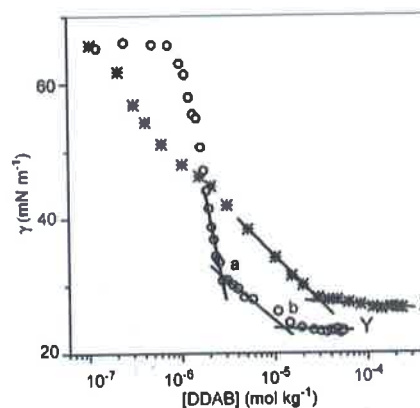
Catalytically active network-like Au nanostructures are synthesized without any template under ambient conditions. Variation in  $\text{HAuCl}_4$  concentration results in formation of different types of nanostructures by the oriented attachment based self-assembly of smaller sized spherical Au nanoparticles. These nanostructures catalyze both the reduction of *p*-nitrophenol and redox reaction between  $\text{K}_3[\text{Fe}(\text{CN})_6]$  and  $\text{Na}_2\text{S}_2\text{O}_3$ .



Md. Harunar Rashid

**1122 Studies on aggregation and counterion binding nature  
 of didodecyldimethylammonium bromide in presence  
 of added salts**

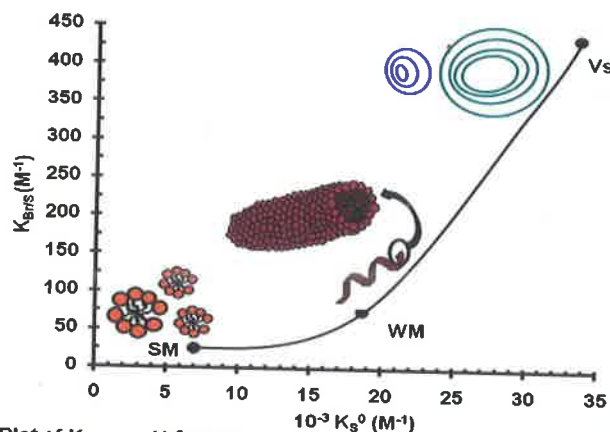
The effect of counterions on the solution behavior of DDAB is studied by surface tension, fluorescence, conductance and dynamic light scattering methods. In aqueous electrolyte solution, DDAB displays two types of surface tension profiles, X and Y. Two break points are observed in the surface tension isotherms of DDAB, depending on the type and amount of added counterion.



U Thapa\*, N Sultana &amp; K Ismail\*

- 1132 Effect of [NaBr] on the rate of intramolecular base-assisted piperidinolysis of ionized phenyl salicylate in the presence of double-tail cationic surfactant aggregates: DDABr/NaBr/H<sub>2</sub>O nanoparticles catalysis

The nucleophilic reaction of piperidine with ionized phenyl salicylate (PSa<sup>-</sup>) reveals a nonlinear decrease with the increase in concentration of didodecyldimethylammonium bromide micelles at 35 °C and in the absence as well as presence of constant [NaBr].

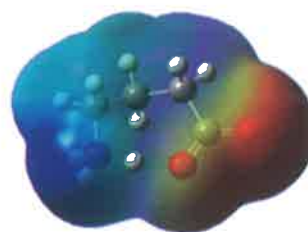


Plot of  $k_{Br/S}$  vs.  $K_S^0$  where SM, WM and Vs represent spherical micelles, wormlike micelles and vesicles, respectively.

N A Razak\*, I I Fagge & M N Khan

- 1143 A computational study on relationship between quantum chemical parameters and reactivity of the zwitterionic GABA and its agonists: Solvent effect

The agonist activity of zwitterionic GABA and its agonists on GABAC receptor as well as GABA uptake inhibition activity is reported. B3LYP/6-311++G(d,p) calculations have been performed to obtain the quantum chemical descriptors such as global hardness, electrophilicity, and electronic chemical potential. Polarized continuum model has been used to explore the solvent effect on activity of these compounds in four solvent media, viz. chloroform, ethanol, DMSO, and water.

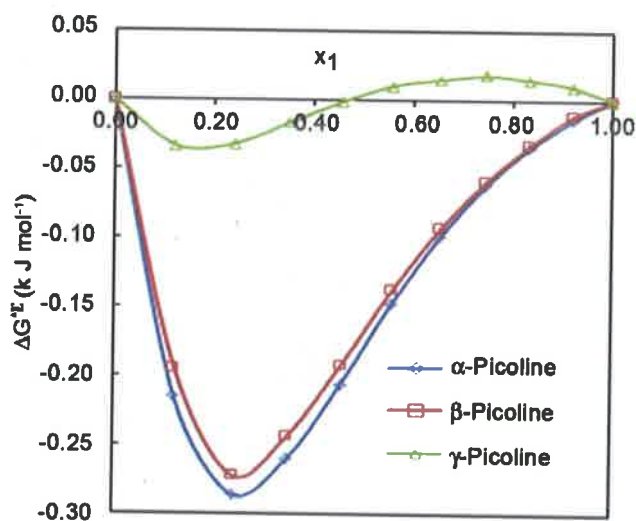


Goncagül Serdaroğlu

## Notes

## 1154 Molecular interaction in binary mixtures of 1,4-butanediol +picolines: Viscometric approach

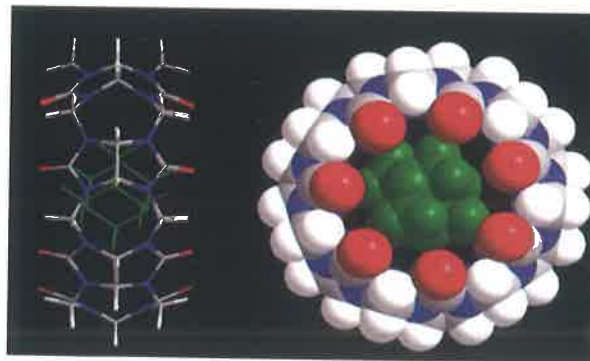
Deviations in viscosity and excess Gibbs free energy of activation of viscous flow for three systems, viz., 1,4-butanediol+ $\alpha$ -picoline, 1,4-butanediol+ $\beta$ -picoline and 1,4-butanediol+ $\gamma$ -picoline in the temperature range of  $T = 303.15$ – $318.15$  K are reported. The deviations in viscosity are negative for all the systems under consideration. The observed values of  $\Delta\eta$  and  $\Delta G^{*E}$  suggest the existence of specific interactions between unlike molecules with the highest interactions being exhibited by the 1,4-butanediol+ $\gamma$ -picoline system as compared to its  $\alpha$ - and  $\beta$ - systems.



J V Srinivasu, K Narendra\*, Ranjan Dey,  
G Srinivasa Rao & B Subba Rao

## 1161 Determination of urotropine using cucurbit[7]uril-palmitine complex as a highly sensitive fluorescent probe

A new fluorescent probe with high sensitivity and selectivity has been developed for the determination of urotropine. The method is based on the competition between palmitine and urotropine for occupancy of the cucurbit[7]uril cavity that leads to fluorescence quenching. The fluorescence quenching is directly proportional to the concentration of urotropine in the range of  $0.004$ – $1.26 \mu\text{g mL}^{-1}$ , with a detection limit as sensitive as  $0.0013 \mu\text{g mL}^{-1}$ .



Chenxuan Zhang & Liming Du\*