

**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)

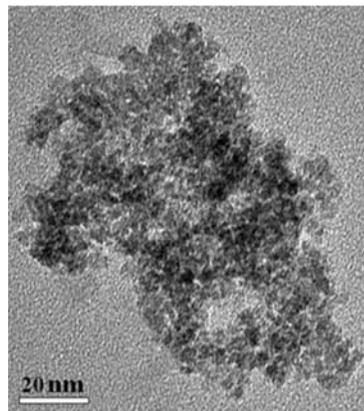
VOLUME 54A

NUMBER 2

FEBRUARY 2015

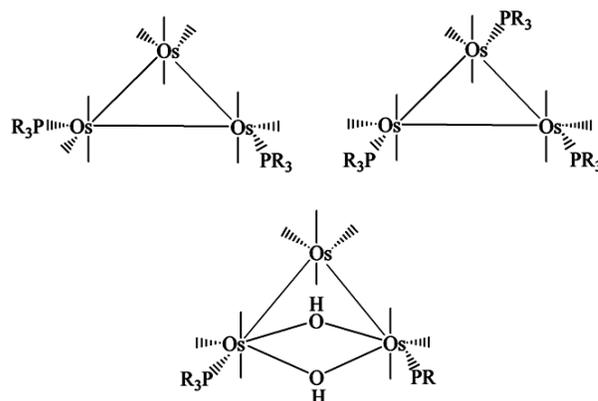
**CONTENTS**

- 155 Hydrothermal synthesis and LPG sensing ability of SnS nanomaterial** SnS nanoparticles with high crystallinity have been prepared by hydrothermal method with good control over particle size. The prepared nanomaterial shows good gas sensing response for liquefied petroleum gas at low operating temperatures.



A Muthuvinayagam & B Viswanathan\*

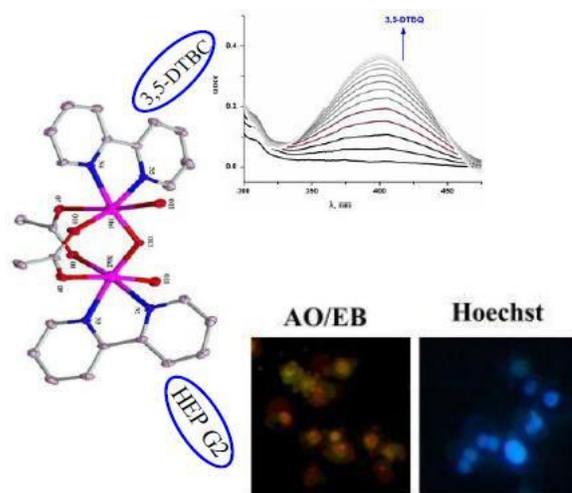
- 161 New tertiary phosphine derivatives of Os<sub>3</sub>(CO)<sub>12</sub>: X-ray structures of 1,2-[Os<sub>3</sub>(CO)<sub>10</sub>-{PhP(*o*-Tol)<sub>2</sub>}<sub>2</sub>], 1,2,3-[Os<sub>3</sub>(CO)<sub>9</sub>{(4-FC<sub>6</sub>H<sub>4</sub>)<sub>3</sub>P}<sub>3</sub>], 1,2,3-[Os<sub>3</sub>(CO)<sub>9</sub>{PhP(Cy)<sub>2</sub>}<sub>3</sub>] and [Os<sub>3</sub>(μ-OH)<sub>2</sub>(CO)<sub>8</sub>{(4-FC<sub>6</sub>H<sub>4</sub>)<sub>3</sub>P}<sub>2</sub>]** Di- and tri-substituted compounds, 1,2-[Os<sub>3</sub>(CO)<sub>10</sub>(PR<sub>3</sub>)<sub>2</sub>] and 1,2,3-[Os<sub>3</sub>(CO)<sub>9</sub>(PR<sub>3</sub>)<sub>3</sub>], along with the dihydroxyl-bridged complexes, 1,2-[Os<sub>3</sub>(CO)<sub>8</sub>(PR<sub>3</sub>)<sub>2</sub>(μ-OH)<sub>2</sub>] {PR<sub>3</sub> = (4-FC<sub>6</sub>H<sub>4</sub>)<sub>3</sub>P, PhP(*o*-Tol)<sub>2</sub> and PhP(Cy)<sub>2</sub>}, are obtained from the reactions of 1,2-[Os<sub>3</sub>(CO)<sub>10</sub>(NCMe)<sub>2</sub>] with PR<sub>3</sub>.



Abdur R Miah, Subas Rajbangshi, Ahibur Rahaman,  
 Kamal Hossain, Tasneem A Siddiquee &  
 Shariff E Kabir\*

**170 Synthesis, crystal structure, catecholase activity, DNA cleavage and anticancer activity of a dinuclear manganese(III)-bipyridine complex**

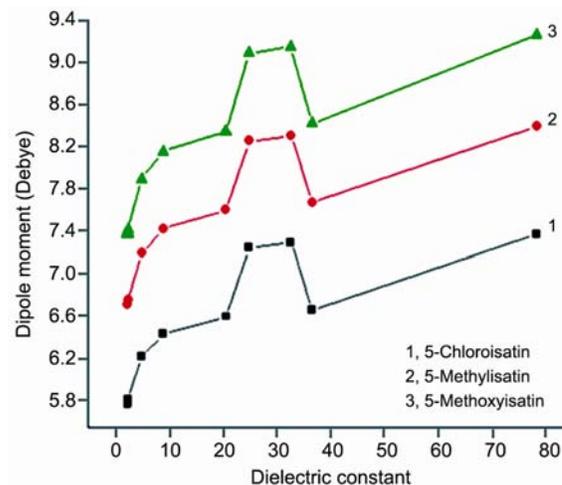
X-ray crystallographically characterized dinuclear acetate-oxo-bridged Mn(III) complex has been evaluated as model system for the catechol oxidase enzyme by using 3,5-di-*tert*-butylcatechol as the substrate in methanol medium. The complex cleaves the pBR 322 supercoiled DNA without addition of an activating agent. Anticancer activity on human hepatocarcinoma cell line shows the efficacy of the complex to induce 55% of apoptotic for 24 h.



Dhananjay Dey, Abhranil De, Sukanta Pal,  
Partha Mitra, Anandan Ranjani,  
Loganathan Gayathri, Saravanan Chandraleka,  
Dharumadurai Dhanasekaran, Mohammad Abdulkadhar  
Akbarsha, Niranjan Kole & Bhaskar Biswas\*

**179 Polarizable continuum model solvation analysis of some isatin derivatives**

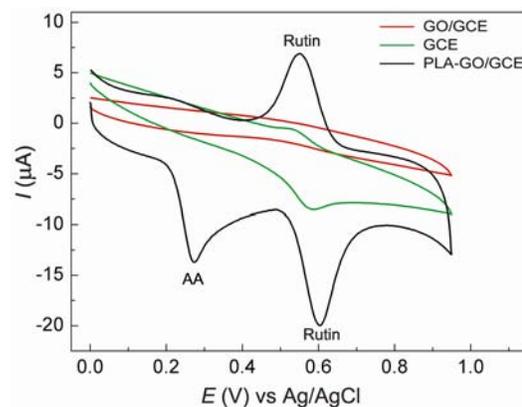
Polarizable continuum model analysis has been carried out for 5-chloroisatin, 5-methylisatin and 5-methoxyisatin in ten solvents at 298 K. The electrostatic, dispersion and repulsion interaction components of Gibb's free energy of solution along with cavitation energies and induced dipole moments are computed.



P Vidhya, V Kannappan\* & V Sathyanarayanamoorthi

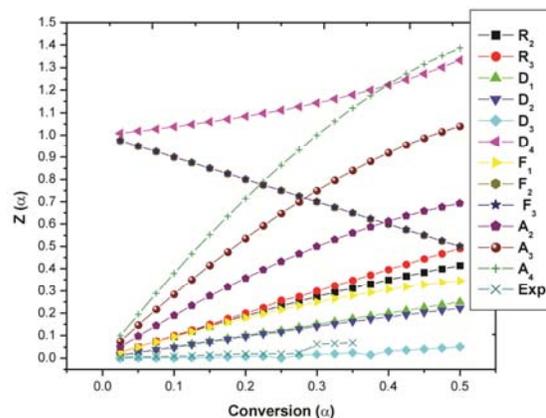
## Notes

- 187 **Electrochemical behavior of ascorbic acid and rutin on poly(L-arginine)-graphene oxide modified electrode** Compared with graphene oxide modified electrode (GO/GCE) and bare GCE, poly(L-arginine)-graphene oxide modified electrode (PLA-GO/GCE) has high electrocatalytic ability for ascorbic acid (AA) and rutin.



Yan Luo, Qingqing Hu, Gen Liu\* & Dengming Sun\*

- 193 **Model-free thermal degradation kinetics of bio-based phenolic resin derived from vanillin oxime** A new terpolymer resin is synthesized with the monomer vanillin oxime and *p*-bromoacetophenone and formaldehyde as a condensing agent and characterized by FTIR, <sup>1</sup>H NMR, GPC, DSC and TG-DTG data. The apparent activation energy values for different conversions ( $0.1 \leq \alpha \leq 0.7$ ) are close to each other. The solid state decomposition mechanism is three dimensional deceleration type.



Narendra Pal Singh Chauhan\*,  
Nirmala Kumari Jangid, Jyoti Chaudhary,  
Ritu Tomar & Paridhi Kataria

- 
- 199 Hydroisomerization of long chain saturated hydrocarbon over Pt/SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> catalysts** Hydroisomerization of hexadecane and the linear saturated hydrocarbon product obtained from the hydroprocessing of jatropha oil have been carried out over different silica-alumina supported platinum catalysts for the reduction of pour point. The 0.3% Pt and amorphous silica-alumina support with SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> ratio as 0.67 is found to be optimum. Under the optimized conditions for hexadecane, pour point as low as -15 °C and -10 °C has been obtained for the batch as well as continuous fixed bed reactor respectively, along with good conversion and selectivity.



J K Satyarthi, T Chiranjeevi\*, Sudha Tyagi & D T Gokak

- 
- 203 Corrigendum**

- 
- 204 Author Guidelines for Online Submission**
- 

Authors for correspondence are indicated by (\*)