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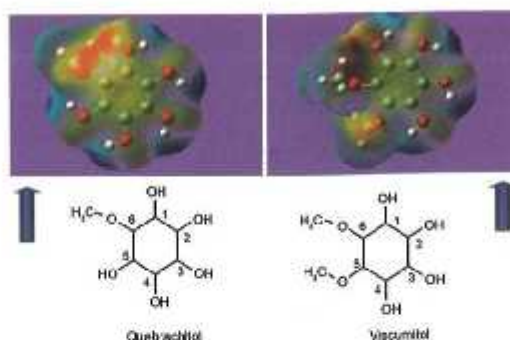
NUMBER 5

MAY 2017

**CONTENTS**

469 **DFT studies on role of methoxy group in radical scavenging ability of quebrachitol and viscumitol**

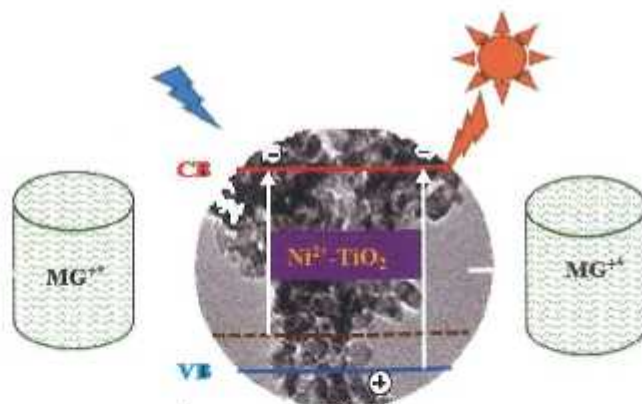
Quebrachitol with lesser number of methoxy group (benzenehexol with one methoxy group) is a more efficient radical scavenger than viscumitol (benzenehexol with two methoxy groups).



D Jeevitha, K Sadasivam\* & R Praveena

479 **Structural characterization and photocatalytic properties of hydrothermally synthesized Ni<sup>2+</sup>-TiO<sub>2</sub> nanoparticles for dye degradation under direct sunlight**

Visible light active Ni<sup>2+</sup>-TiO<sub>2</sub> photocatalyst with average particle size of 8-11 nm has been prepared by stainless steel autoclave hydrothermal method using titanium isopropoxide as precursor. Photocatalytic activity of the Ni<sup>2+</sup>-TiO<sub>2</sub> nanoparticles has been studied by degradation of malachite green dye under UV light, visible light and direct sunlight. Ni<sup>2+</sup>-TiO<sub>2</sub> (1.60 wt.%) shows more than 90% degradation in 180 min under sunlight.

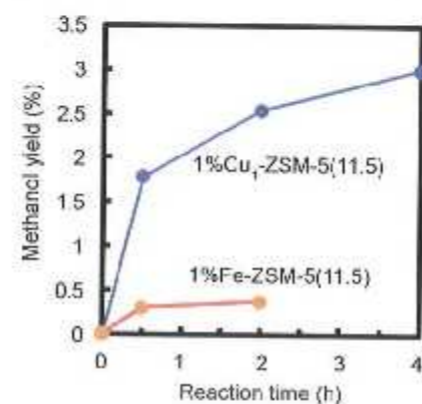


Ravi Kamble, Sandip Sabale\*, Prashant Chikode,  
 Vijaya Puri & Smita Mahajan

## Notes

- 488 Cu-ZSM-5 catalyzed low-temperature hydrogen peroxide-induced methane-to-methanol conversion

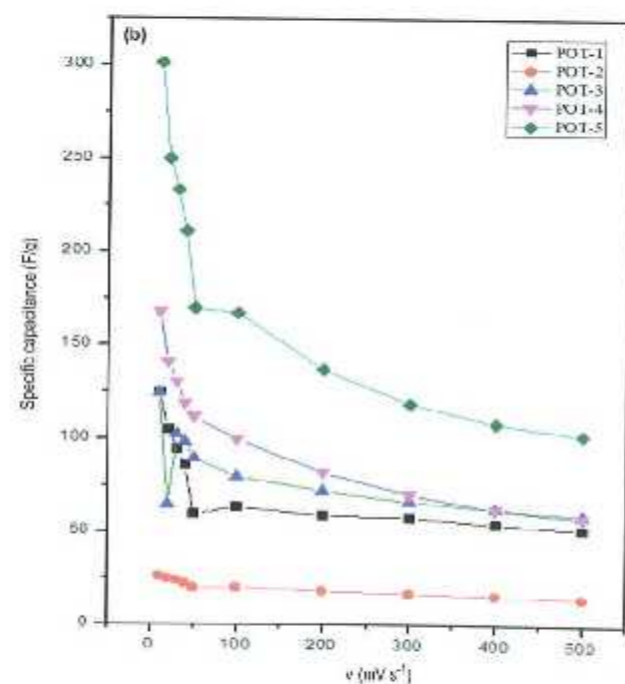
Ion-exchanged Cu-ZSM-5 is more effective than Fe-ZSM-5 in converting methane to methanol with hydrogen peroxide.



Y Zhang, I. F. Allard, Z. Li, M. Kidder & C. K. Narula\*

- 493 Poly(*o*-toluidine) salt as low cost electrode material for high performance electrochemical supercapacitor

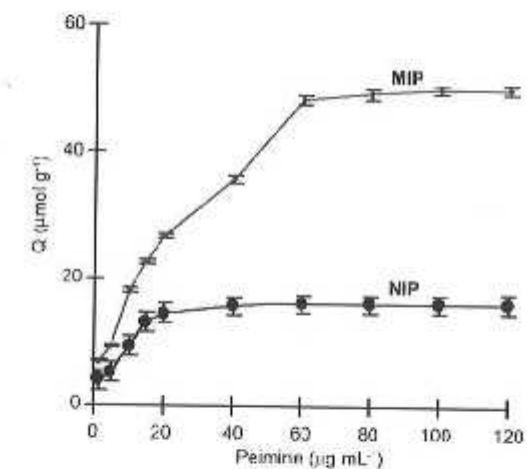
Binder-free, low cost poly(*o*-toluidine) (POT) has been synthesized by emulsion polymerization method and tested for supercapacitor application through cyclic voltammetry and galvanostatic charge discharge analysis. The POT salt exhibits the highest specific capacitance value of 301 F/g.



Hajera Gul, Salma Gul, Anwar-ul-Haq Ali Shah & Salma Bilal\*

- 501 A chemiluminescence sensor based on molecularly imprinted polymer for determination of peimine

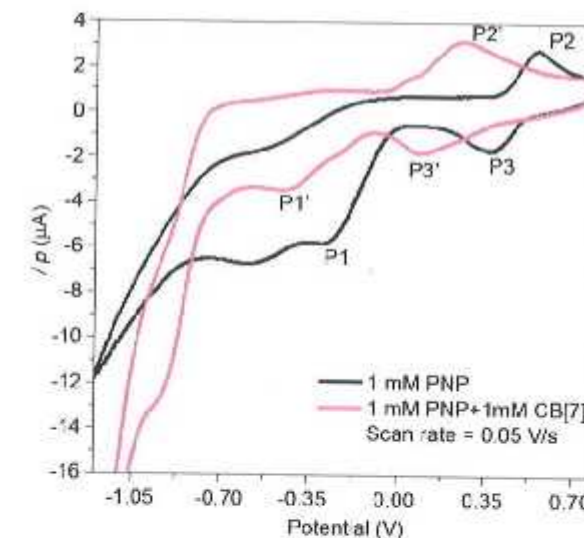
A peimine-imprinted polymer has been synthesized and developed as a simple, rapid and sensitive chemiluminescence sensor for the determination of peimine based on the chemiluminescence reaction of peimine with potassium permanganate in acidic medium. The chemiluminescence intensity responds linearly to the concentration of peimine within the range of  $5.0 \times 10^{-7}$  to  $5.0 \times 10^{-5}$  mol L<sup>-1</sup> with a detection limit of  $2.0 \times 10^{-7}$  mol L<sup>-1</sup>. The relative standard deviation for  $3.0 \times 10^{-6}$  mol L<sup>-1</sup> peimine solution is 3.6% ( $n = 11$ ).



Hongping Han, Hong Zheng\*, Baolin Li\*, Hui Xiang & Yilan Zhangluo

- 508 Host-guest interaction of cucurbit[7]uril with *para*-nitrophenol: A weakly binding inclusion complex

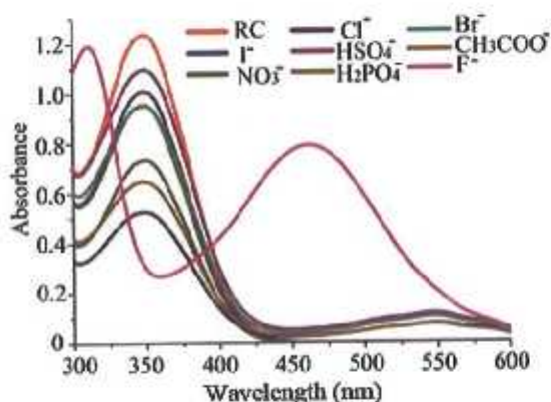
Host-guest interaction between cucurbit[7]uril (CB[7]) and *para*-nitrophenol (PNP) has been investigated by <sup>1</sup>H NMR spectroscopy and isothermal titration calorimetry. The stoichiometry, binding constant and other thermodynamic parameters of complexation show formation of a weakly binding 1:1 inclusion complex, resulting from enthalpy-entropy compensation. Cyclic voltammetry of PNP-CB[7] complex in acidic pH reveals a large cathodic shift in the reduction potentials of PNP, indicating either stabilization of PNP or destabilization of the electroreduced product inside the CB[7] cavity.



Sabyasachi Patra\*, Sudip Gorai, D Rama Mohana Rao, Manoj K Sharma, Sandip K Nayak, Alok K Ray & A Goswami

513 Benzimidazole scaffold as dipodal molecular cleft for swift and efficient naked eye fluoride ion recognition via preorganized N-H and aromatic C-H in aqueous media

A series of cleft-like dipodal receptors, *N,N'*-bis-(5-(un)substituted-1H-benzimidazol-2-ylalkyl)-isophthal-amides (**RA-RD**), has been synthesized and investigated for naked eye colorimetric detection of fluoride ion in 9:1 DMSO-water. The receptor **RC**, based on *N,N'*-bis-(5-nitro-1H-benzimidazol-2-ylmethyl)-isophthalamide, binds fluoride ion exclusively with a detection limit of 1.5 ppm over other anions.



Anshu Jain, Ragini Gupta\* & Madhu Agarwal

Authors for correspondence are indicated by (\*)

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