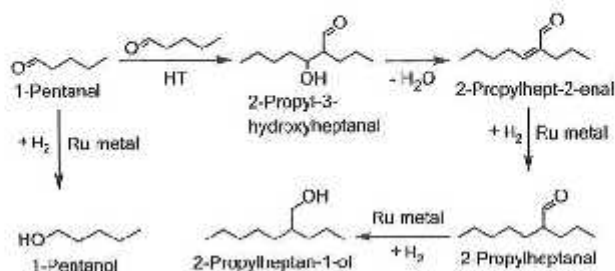


CONTENTS

451 Synthesis of 2-propylheptanol from 1-pentanal in a single pot using bi-functional ruthenium hydrotalcite catalyst in batch and flow reactors

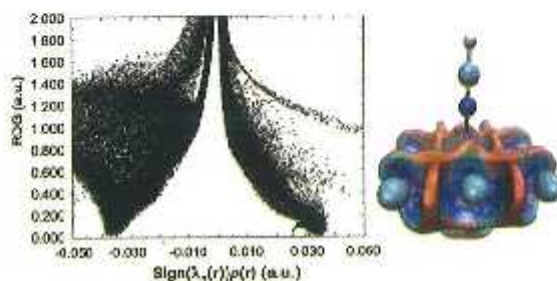
Catalytic activity of ruthenium containing hydrotalcite sample has been studied for one pot synthesis of 2-propylheptan-1-ol from 1-pentanal in batch and fixed bed reactors. In continuous flow reactor, 90% conversion of 1-pentanal with 41% selectivity to 2-propylheptan-1-ol is obtained.



Sumeet K Sharma & Raksh V Jaisra*

459 Density functional theory and reduced density gradient investigations into HCN adsorption on the Co(100) and Co(110) surfaces

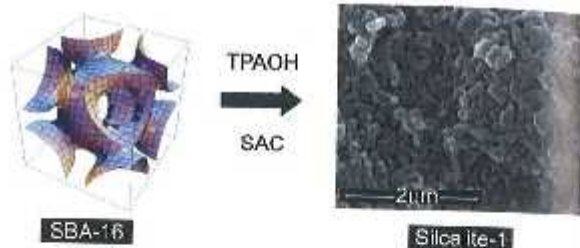
Parallel adsorption configuration is energetically favored as compared with the perpendicular mode, with the former weakening the strength of the C≡N bond to a larger extent than the latter.



Ying-Hu Zhao*, Ying-Yong Wang, Li Gao & Hui Song

- 469 **Crystallization of amorphous silica to silicalite-1: Effect of nature of silica sources and tetrapropylammonium hydroxide concentration**

Dry gels obtained from different sources of silica have been crystallized into silicalite-1 by steam assisted conversion. Nature of the source and concentration of tetrapropylammonium hydroxide have a significant effect on shape, size and pore structure of silicalite-1. N_2 adsorption results reveal that the prepared silicalite-1 samples possess a wide pore size distribution and apart from zeolitic micropores comprise pores in meso- and macro-pore regions.

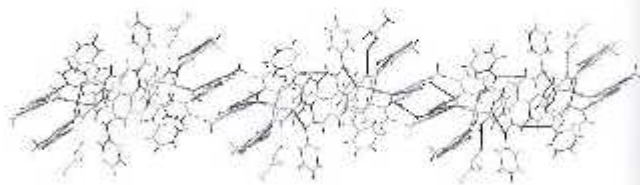


M S M Kamil, K Manikandan, S P Elangovan,
Masaru Ogura, K K Cheralathan*

Notes

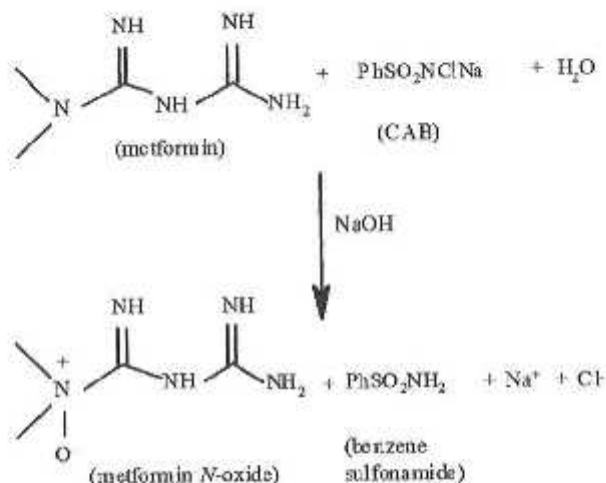
- 478 **Supramolecular interactions in mononuclear iron(III) complex derived from a diamide ligand: Spectroscopic and electrochemical properties**

The mononuclear iron(III) complex, $[Fe(L)_3] \cdot DMF$ (where HL is 2,6-bis[(N-phenyl)amide]-4-methylphenol), crystallizes in the triclinic space group $P\bar{1}(2)$. X-ray crystal structure reveals molecular units that are linked through intermolecular hydrogen-bonding involving amide nitrogens and oxygens, giving rise to a one-dimensional chain structure.



484 Oxidation of metformin with alkaline chloramine-B: Delineation of reaction mechanism and kinetic modeling

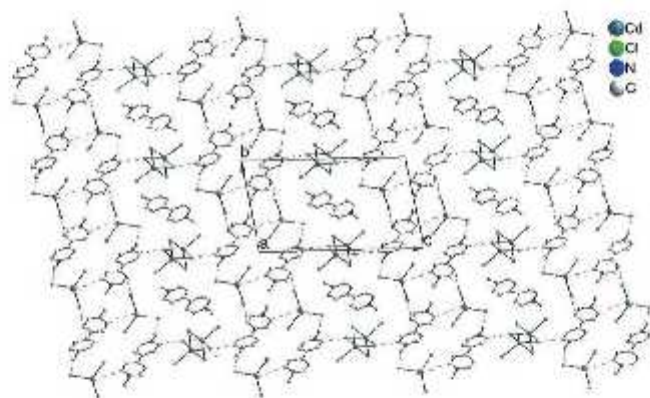
The kinetics and mechanism of oxidation of metformin hydrochloride with chloramine B have been investigated in alkaline medium at 308 K. The reaction rate shows a first order dependence of rate each on $[CAB]_0$ and $[MET]_0$, and an inverse-first order dependence on $[OH^-]$. The conjugate acid ($PhSO_2NHCl$) is postulated as the reactive oxidizing species.



Nirmala Vaz*, A S Manjunath & Puttaswamy

489 Photoluminescence and theoretical study of $[^{\infty}_1(Cd_2Cl_6)]_2[2(CdCl_2)]_3[3(N,N\text{-dimethyl-4,4'-bipyridinium})]$

A novel cadmium chloride-4,4'-bipyridinium compound, namely $[^{\infty}_1(Cd_2Cl_6)]_2[2(CdCl_2)]_3[3(N,N\text{-dimethyl-4,4'-bipyridinium})]$ in which the $N,N\text{-dimethyl-4,4'-bipyridinium}$ has been prepared *in situ*, has been obtained through solvothermal reaction. The compound contains a one-dimensional infinite $^{\infty}_1(Cd_2Cl_6)$ chain, $CdCl_4^{2-}$ anions and $[N,N\text{-dimethyl-4,4'-bipyridinium}]^{2+}$ cations, interlinked via hydrogen bonding interactions to yield a three-dimensional supramolecular framework.



Zhong-Liang Yao, Wen-Tong Chen* & Rong-Hua Hu

Authors for correspondence are indicated by (*)