Journal of Chemical Sciences

[Formerly: Proceedings (Chemical Sciences)] Vol. 121, No. 1, January 2009

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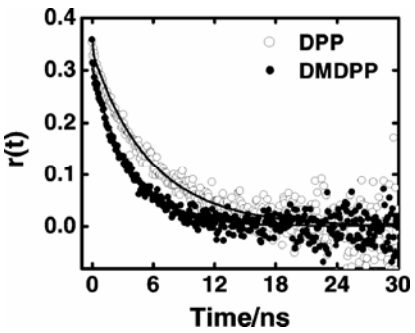
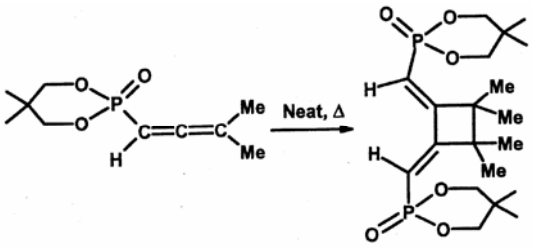
Perspective Article

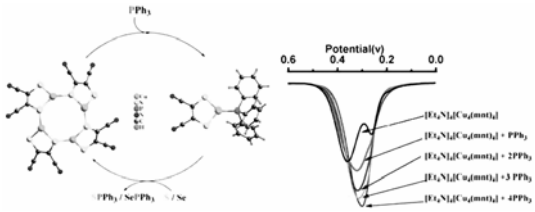


Despite the strong cohesive interactions within the constituent cations and anions, ionic liquids do experience strong specific interactions with organic solutes such that their rotational diffusion is hindered. In contrast, specific interactions have no influence on the photoisomerization process in ionic liquids and it appears to be governed solely by the viscosity of the ionic liquids.

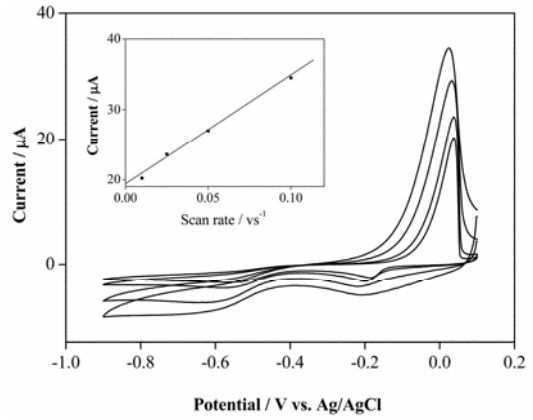
Full Papers



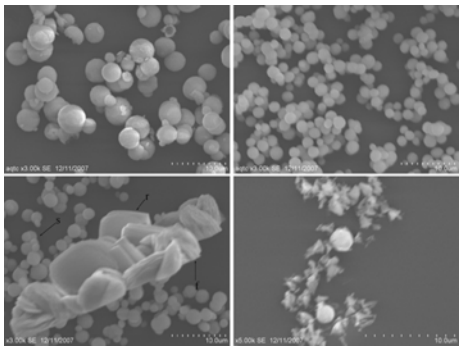
Synthesis, structure and stability of several allenylphosphonates are presented. Dimerization of an allene leading to a phosphono-cyclobutane is highlighted.



$[Et_4N][Cu(mnt)(PPh_3)]$ monomer ↔ tetramer $[Et_4N]_4(Cu_4(mnt)_4]$ interconversion has been used to generate catalytic cycles for the oxidation of PPh_3 by S or Se involving competitive {Cu(I)–μ_2–S} and {Cu(I)–P} bondings.

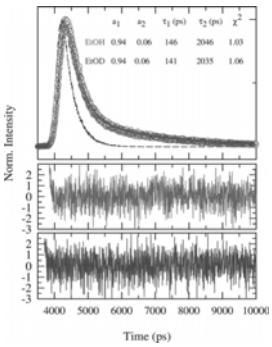


The novel *vic*-dioxime ligand containing the 4-amino-1-benzyl piperidine group, *N,N′*-(4-amino-1-benzyl piperidine)-glyoxime, (LH_2) has been prepared from 4-amino-1-benzyl piperidine with *anti*-dichloroglyoxime at –15°C in absolute THF. Mononuclear Ni^{II} metal complex has been obtained with 1:2 metal/ligand ratio. The ligand and its mono and trinuclear metal complexes were characterized by elemental analyses, FT–IR, UV-Vis, ^1H and ^{13}C-NMR spectra, magnetic susceptibility measurements, molar conductivity, cyclic voltammetry, mass spectra and X-ray powder techniques.



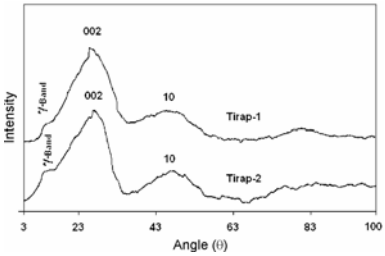
Sucrose/bovine serum albumin mediated biomimetic crystallization of calcium carbonate

The $CaCO_3$ crystals were obtained from the sucrose/bovine serum albumin systems. Sucrose at low concentrations tends to induce formation of vaterite and calcite, while addition of bovine serum albumin led to the stable formation of vaterite.



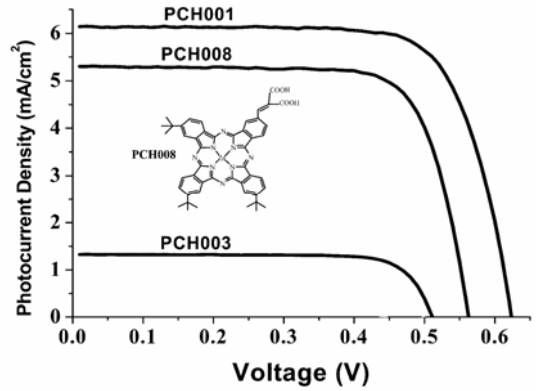
Excited state intramolecular charge transfer reaction in 4-(1-azetidinyl)benzonitrile: Solvent isotope effects

Study of excited state intramolecular charge transfer reaction of 4-(1-azetidinyl) benzonitrile (P4C) in deuterated and normal ethanol reveals that reaction rate and other properties (such as quantum yield and radiative rates) have been found to be insensitive to the solvent isotope substitution.



A X-ray diffraction analysis on graphene layers of Assam coal

X-ray diffraction technique has been applied to high sulphur coal of Makum coalfield, Assam (India) for interpreting its molecular-level structure. Random layered (graphene) structural parameters for two coal samples were determined.



Cover picture: Tapping of solar energy with phthalocyanine sensitizer using nanotechnology. For details see the paper by L Giribabu *et al* (pp 75–82).

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Edited and published by N Mukunda for the Indian Academy of Sciences, Bangalore 560 080.
Typeset at Wintecs, Bangalore 560 021 and printed by Printek Printers, Bangalore 560 079.