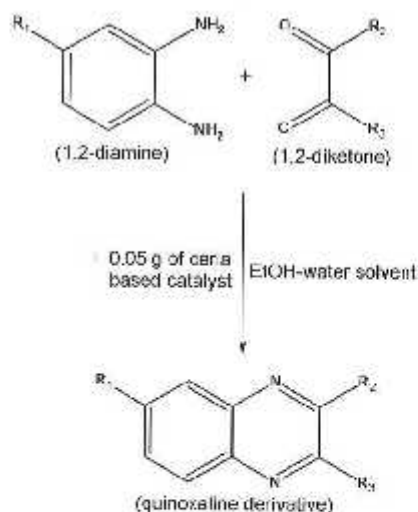


CONTENTS

843 Effective synthesis of quinoxalines over ceria based solid acids coated on honeycomb monoliths

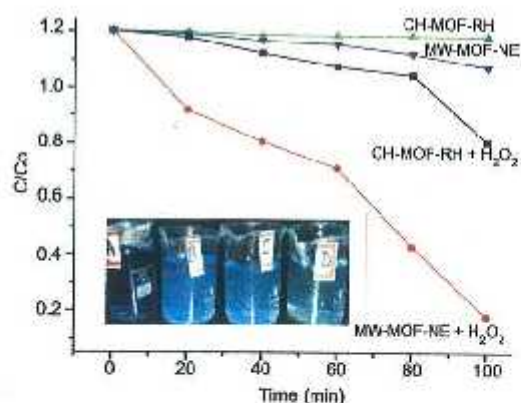
Ceria-zirconia mixed oxide coated on honeycomb monolith is a facile catalyst for synthesis of quinoxalines with up to 89% yield and 100% selectivity. The ceria-zirconia catalyst coated on honeycomb is more effective than its powder form.



Venkatesh, S Z Mohamed Shamsuddin* & N M Mubarak

851 A comparative study of the morphologies and photocatalytic performances of bis[5-(2-pyridyl-tetrazolato)]diaquazinc(II) framework synthesized by hydrothermal and microwave methods

Bis[5-(2-pyridyltetrazolato)]diaquazinc(II) [(2-PTZ)₂Zn(H₂O)₂] has been synthesized *in situ* by the reaction of 2-cyanopyridine, Zn(NO₃)₂·4H₂O and NaN₃ via both microwave assisted and conventional hydrothermal processes. The microwave process yields needle-like morphology, while the conventional process yields rhombohedral morphology. The photocatalyst with needle-like morphology exhibits 99% degradation of methylene blue in 100 min.



Arti Chouhan, Peter Mayer & Ashutosh Pandey*

858 Instability of CL-20 exposed to the effects of α -particle

CL-20 is unstable in the presence of an α -particle which transfers its charge causing the cage structure of CL-20 to be destroyed. Removal of a single NO_2 group from the 5- or 6-membered ring of CL-20 causes cage destruction in the dication form.

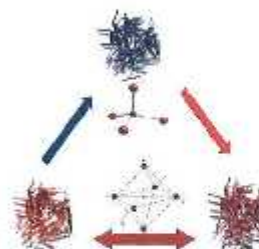
CL-20+ α

Lemi Türker

Notes

867 Reversible hydration of tetraaquabis(4-amino-benzoato)cobalt(II)

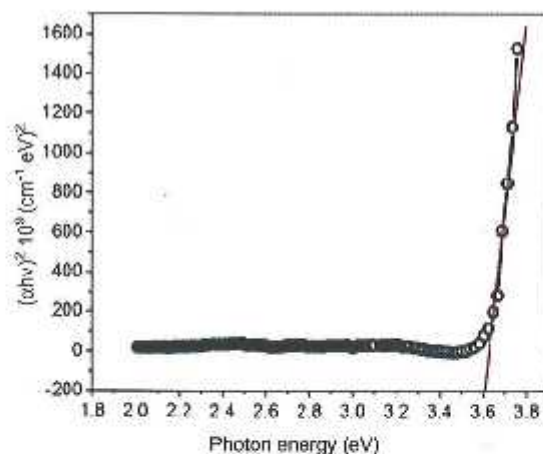
The octahedral red complex tetraaquabis(4-amino-benzoato)cobalt(II) undergoes a water induced crystalline-amorphous-crystalline transformation accompanied by chromotropism. On heating, the six coordinated octahedral complex is fully dehydrated to the four coordinated tetrahedral amorphous blue bis(4-amino-benzoato)cobalt(II), which on equilibration over water vapour can be rehydrated to the starting material, regaining its original properties.



Kiran T Dhavskar & Bikshandarkoll R Srinivasan*

872 Al-doped zinc oxide nanostructures as transparent conductive window layer for photovoltaic applications

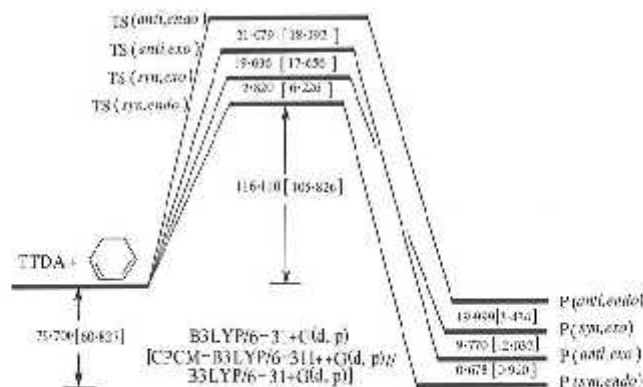
AZO thin films prepared by chemical bath deposition method using zinc nitrate aqueous solution show high transmittance (>80%) and resistivity of $\sim 1.4 \times 10^{-3} \Omega \text{ cm}$. The optical band gap of AZO material is 3.6 eV. Aluminium doping, particularly, 5 wt% Al doped ZnO, enhances the electron concentration and makes the film conductive.



R M Mohite* & R R Kothawale

877 DFT investigation of Diels-Alder reaction of 1,3-cyclohexadiene with tetracyclo[6.2.2.1^{3,6}.0^{2,7}]trideca-4,9,11-triene-9,10-dicarboxylic anhydride dienophile

The mechanism and stereochemistry of the Diels-Alder reaction of 1,3-cyclohexadiene with tetracyclo[6.2.2.1^{3,6}.0^{2,7}]trideca-4,9,11-triene-9,10-dicarboxylic anhydride are investigated quantum chemically. Results show the anhydride double bond of the molecule to be *anti*-pyramidalized. Transition states [TS(*syn,endo*)] and [TS(*syn,exo*)] of *syn* cycloaddition reactions are more stable than transition states [TS(*anti,endo*)] and [TS(*anti,exo*)] of *anti* cycloaddition reactions, with little difference between stability of [TS(*anti,endo*)] and [TS(*anti,exo*)].



Rza Abbasoglu* & Abdurrahman Atalay

Authors for correspondence are indicated by (*)