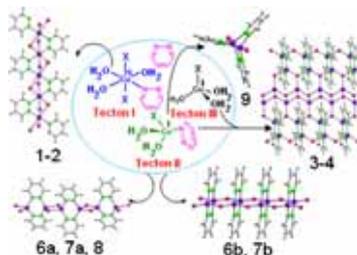


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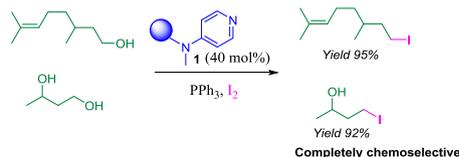


What Triggers Supramolecular Isomerism in Nonmolecular Solids? A case study of Copper Pyridazine Halides

Jency Thomas and Arunachalam Ramanan 1687–1694

[Cu^{II}(*pdz*)X₂], **1–2**; [Cu₂^I(*pdz*)X₂], **3–5**; [CuI(*pdz*)X], **6–8** and [Cu₂^I(*pdz*)3Cl₂].3H₂O, **9** where *pdz* = pyridazine, were crystallized from aqueous solution for the first time and their structure elucidation was carried out using X-ray crystallographic techniques. Growth of isostructures and supramolecular isomers in **1–9** has been interpreted in terms of tectons (I–III).

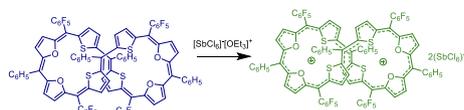
Rapid Communications



A mild and highly chemoselective iodination of alcohol using polymer supported DMAP

Diparjun Das, Jasha Momo H Anal and Lalthazuala Rokhum . . . 1695–1701

A mild and highly selective iodination of alcohols using polymer supported 4-(Dimethylamino)pyridine (DMAP) in catalytic amount is reported. The base catalyst can be easily recovered by simple filtration and reused several times without appreciable loss in activity.

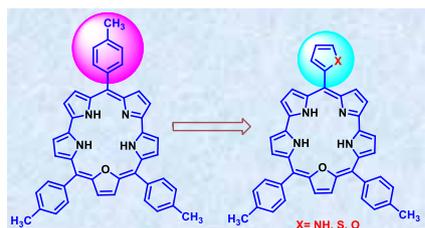


Two-electron Oxidation of a Twisted Non Anti-aromatic 40π Expanded Isophlorin

Prachi Gupta, Santosh P Panchal and Venkataramanarao G Anand 1703–1707

A non-planar 40π expanded isophlorin with four thiophene and four furan subunits has been synthesized from simple precursors. It can be oxidized to the corresponding 38π macrocycle with unaltered topology.

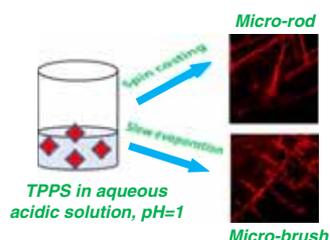
Regular Articles



Synthesis and properties of Oxasmaragdyrins containing one Five-membered Heterocycle at *Meso*-position

Booruga Umasekhar, Pallab Samanta, Tamal Chatterjee and Mangalampalli Ravikanth 1709–1715

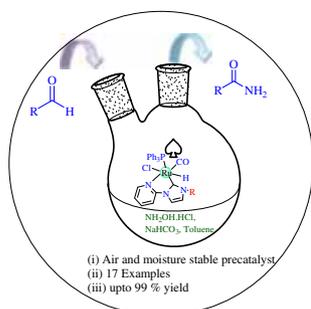
Synthesis and properties of mono *meso*-heterocyclic substituted Oxasmaragdyrins are reported.



Spatial inhomogeneity in spectra and exciton dynamics in porphyrin micro-rods and micro-brushes: Confocal microscopy

Shyamtanu Chatteraj and Kankan Bhattacharyya 1717–1724

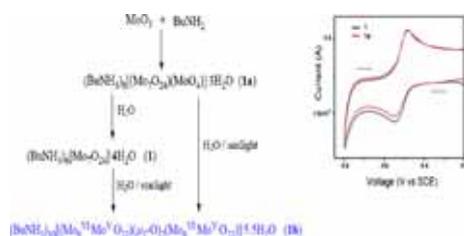
Water soluble ionic porphyrin, TPPS forms two different kinds of microstructures depending on the rate of evaporation from an aqueous acidic solution. Each of such microstructure exhibits morphology-dependent distinct behaviour in fluorescence intensity fluctuation and fluorescence anisotropy.



Ruthenium(II) complexes bearing pyridine-functionalized *N*-heterocyclic carbene ligands: Synthesis, structure and catalytic application over amide synthesis

Muthukumaran Nimlala and Periasamy Viswanathamurthi . . . 1725–1735

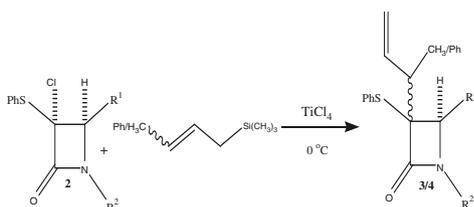
A series of ruthenium(II) complexes (**3a-d**) bearing pyridine functionalized *N*-heterocyclic carbene ligand was synthesized and characterized by FT-IR, NMR and ESI-Mass. The catalytic study of complexes (**3a-d**) towards one-pot conversion of various aldehydes to their corresponding primary amides was studied. This new protocol is effective and a broad range of amides were successfully synthesized in good to excellent yields.



Synthesis, crystal structure and photochemistry of Hexakis(butan-1-aminium) heptamolybdate(VI) tetrahydrate

Savita S Khandolkar, Ashish R Naik, Christian Näther, Wolfgang Bensch and Bikshandarkoil R Srinivasan 1737–1744

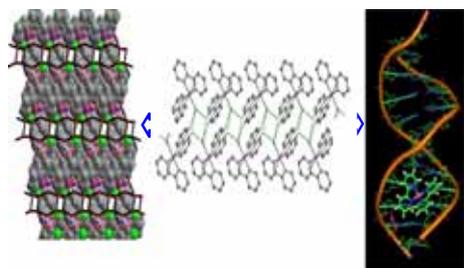
Synthesis, structure, photochemistry and redox characteristics of hexakis(butan-1-aminium) heptamolybdate(VI) tetrahydrate are reported.



Studies towards C-3 functionalization of β -lactams using substituted allylsilanes

Renu Thapar, Reshma and S S Bari 1745–1753

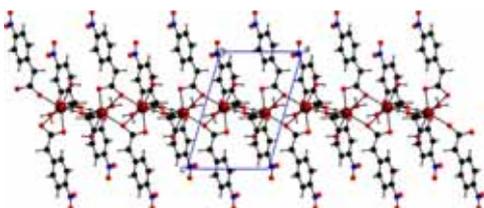
In the presence of TiCl_4 , silanes such as crotylsilanes and cinnamylsilanes add efficiently at C-3 position of *trans*-3-chloro-3-phenylthio- β -lactams.



Recognition of self-assembled water-nitrate cluster in a Co(III)-2,2'-bipyridine host: Synthesis, X-ray structure, DNA cleavage, molecular docking and anticancer activity

Subrata Das, Anandan Ranjani, Loganathan Gayathri, Subhasish Saha, Jorge Pasan, Dharumadurai Dhanasekaran, Mohammad Abdulkader Akbarsha, Milan Maji and Bhaskar Biswas 1755–1764

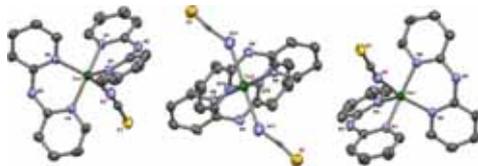
This paper reports an X-ray crystallographic characterization of a Co(III)-bpy complex which also presents a new mode of association of water molecules with nitrate molecules which was not predicted theoretically or found experimentally or reported in literature. The molecule effectively cleaves bacterial genomic DNA and shows important cytotoxicity against human hepatocarcinoma cell (HepG2).



Syntheses, structure and properties of Alkaline-earth metal salts of 4-Nitrophenylacetic acid

Bikshandarkoil R Srinivasan, Kiran T Dhavskar and Christian Näther 1765–1774

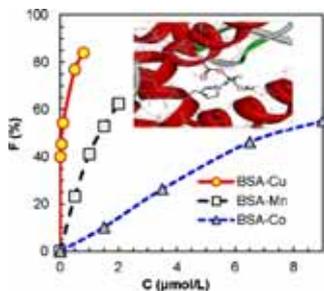
Synthesis, structure and properties of $[\text{Mg}(\text{H}_2\text{O})_6](4\text{-npa})_2 \cdot 4\text{H}_2\text{O}$ (4-npa = 4-nitrophenylacetate) (**1**), $[\text{Ca}(4\text{-npa})_2(\text{H}_2\text{O})_2]$ (**2**), and $[\text{Sr}(4\text{-npa})_2(\text{H}_2\text{O})_3] \cdot 4.5\text{H}_2\text{O}$ (**3**) are reported.



Unprecedented hetero-geometric discrete copper(II) complexes: Crystal structure and bio-mimicking of Catecholase activity

Abhranil De, Dhananjay Dey, Hare Ram Yadav, Milan Maji, Vinayak Rane, R M Kadam, Angshuman Roy Choudhury and Bhaskar Biswas 1775–1782

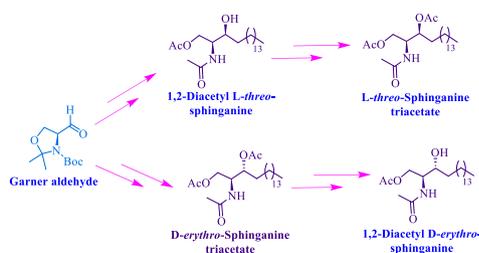
This paper reports an X-ray crystallographically characterized Cu(II) complexes which mimics the full catalytic cycle of functional model of catechol oxidase enzyme with significant turnover number ($4.788 \times 10^3 \text{ h}^{-1}$) along with the production of semiquinone radical and hydrogen peroxide.



Bovine Serum Albumin Metal Complexes for Mimic of SOD

Guifang Yan, Yufeng He, Gang Li, Yubing Xiong, Pengfei Song and Rong-min Wang. 1783–1788

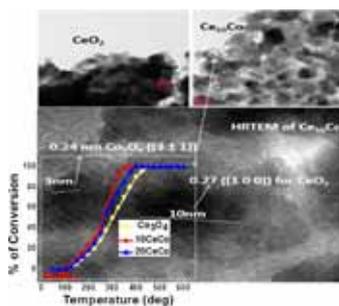
A simple biopolymer metal complex (BSA-M) was formed via BSA binding with transition metal ions, in which BSA served as scaffold and the metal ions as the catalytic active centers. BSA-Cu showed remarkable capacity for scavenging of $\text{O}_2^{\bullet -}$.



Stereoselective total synthesis of sphingolipids

Paramesh Jangili, Perla Ramesh and Biswanath Das 1789–1794

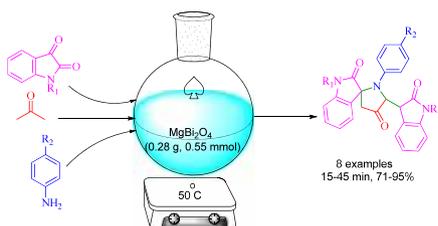
A novel sphingosine, 1,2-diacetyl D-erythro-sphinganine having a characteristic almond flavour was isolated from the edible mushroom Grifola gargal. We have synthesized this sphinganine along with three other sphingolipids, such as 1,2-diacetyl L-threo-sphinganine, D-erythro-sphinganine triacetate and L-threo-sphinganine triacetate using Garner aldehyde as the starting material involving the Grignard reaction and Mitsunobu inversion. The sphingolipids, 1,2-diacetyl D-erythro-sphinganine and 1,2-diacetyl L-threo-sphinganine have been synthesized for the first time.



Catalytic decomposition of N_2O over CeO_2 supported Co_3O_4 catalysts

S K Mahammadunnisa, T Akanksha, K Krushnamurthy and Ch Subrahmanyam 1795–1804

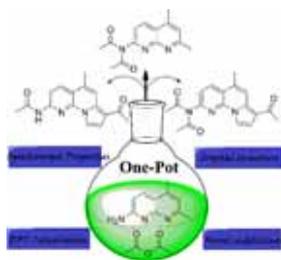
New ceria-doped cobalt oxide catalysts were prepared by the solution combustion method which showed a capability of 100% N_2O conversion at low temperature.



Nano MgBi_2O_4 : A Novel Green Catalyst for the One-step Cascade Condensation of Arylamines, Acetone and Isatins in Water

Kobra Nikoofar, Zahra Khademi and Maryam Haghghi . . . 1805–1811

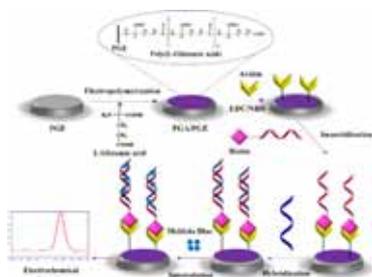
Nano MgBi_2O_4 was synthesized for the first time *via* a simple co-precipitation method using the surfactant *N*-cetyl-*N,N,N*-trimethylammonium bromide (CTAB). The reactivity of the nanoparticles was investigated in the synthesis of 1'-aryl-2'-(2-oxindolin-3-yl)spiro[indoline-3,5'-pyrroline]-2,3'-diones by the one-step, pseudo four-component condensation of arylamines, acetone and isatins at 50°C in water.



Synthesis, Spectroscopic Properties and DFT Calculation of Novel Pyrrolo[1',5'-a]-1,8-naphthyridine Derivatives through a Facile One-pot Process

Gao-zhang Gou, Bo Zhou, He-ping Yan, Yong Hong, Wei Liu, Shao-ming Chi and Chao-yong Mang 1813–1821

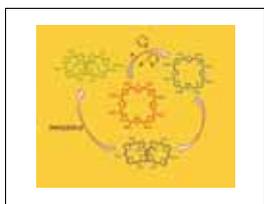
Novel pyrrolo[1',5'-a]-1,8-naphthyridine compounds have been synthesized through a facile one-pot process. Further, X-ray crystal analysis and spectroscopic properties are presented.



Development of an electrochemical DNA biosensor for detection of specific Mycobacterium tuberculosis sequence based on poly(L-glutamic acid) modified electrode

Merve Yesil, Soner Donmez and Fatma Arslan 1823–1829

Electrochemical DNA sensor was fabricated by means of electropolymerization of L-glutamic acid for detection of specific Mycobacterium tuberculosis DNA sequence.



Cover picture: A Twist-philic Expanded Isophlorinoid. For details, see the paper by Prachi Gupta *et al.* (pp. 1703–1707)