Papers

1203 Quantitative structure-activity relationship studies on antituberculous \( N_1 \)-cyclopropylquinolones using Szeged index (Sz) Use of Szeged index for modelling antituberculous activities of cyclopropylquinolones is described.

Vijay K Agarwal, Shahnaz Bano, Keshav C Mathur & Padmakar V Khadikar*

1209 Synthesis, characterization and spectroscopic studies of homo- and heteroleptic glycolates of alkaline earth metals, and tin(II) with aluminium

Malti Sharma*, Anirudh Singh* & Ram C Mehrotra*
Synthesis and characterisation of manganese(II) complexes with bis(2-benzimidazolyl)propane and bis(2-benzimidazolyl) butane

Veena Arora, Manisha Gupta & Pavan Mathur*

Synthesis and characterisation of lanthanide(III) complexes of 5-methyl-2-(2'-pyridyl)benzimidazole and 2-(2'-pyridyl) benoxazole

P Thakur, V Chakravortty & K C Dash*

Mixed-ligand ruthenium(III) complexes with acetylacetonates

An improved method for the synthesis of [Ru(acac)₂(CH₃CN)₂]ClO₄ is reported. It has been used as a precursor for the synthesis of many ruthenium(III) complexes.

Akhilesh K Gupta & Raj K Poddar*

Synthesis, characterisation, thermal, kinetic and mechanistic study of complexes of photosubstituted octacyanomolybdate(IV) and -tungstate(IV) of pyrazine with cobalt(II) chloride

Co[Mo(Pz)(CN)₂(OH)₂]Cl₂H₂O → H₂O, OH⁻ 12.74 J/g

Co[Mo(Pz)(CN)₂]Cl₂ → Cl₂ 13.23 J/g

Co[Mo(Pz)(CN)₂] → CN⁻ 22.72 J/g

Residue

S I Ali* & Kowsar Majid
<table>
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<tr>
<th>1239</th>
<th>Oxidation and estimation of bilirubin by using carbon microelectrode</th>
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<td></td>
<td>A differential pulse voltammetric method has been recommended for the estimation of bilirubin with a bare carbon microelectrode in the aqueous medium and indirect oxidation of bilirubin to biliverdin.</td>
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<td>M Boopathi &amp; M Subbaiyan*</td>
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**Notes**

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<th>1244</th>
<th>Metal malate hydrazinates—Precursors to fine particle oxide materials</th>
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<td>Metal malate dihydrazinates of the types, M(mal). 2N₂H₄, (M = Co, Ni or Zn and mal = -OOC-CHOH-CH₂-COO⁻) and Cd(mal). 2N₂H₄.2H₂O and their solid solutions, MₓCo₂₋₃(mal) 2N₂H₄, M=Ni or Zn have been prepared and characterised. The decomposition of the respective solid solution precursors yields cobaltite spinels of NiCo₂O₄ and ZnCo₂O₄.</td>
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<td>S Yasodhai &amp; S Govindarajan*</td>
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<th>1249</th>
<th>CeₓZrₓO₂ solid solution as a novel support for highly active palladium catalyst for catalytic combustion of volatile organic compounds</th>
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<tbody>
<tr>
<td></td>
<td>PdO/CeₓZrₓO₂ catalyst is found to be highly active in the oxidation of volatile organic compounds and the order of catalytic activity is methanol &gt;toluene &gt;acetone &gt;butylacetate &gt;butanone &gt;acetonitrile &gt;ethylendiamine.</td>
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<td>Meng-Fei Luo*, Rui Lin &amp; Xiao-Ming Zheng</td>
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<th>1253</th>
<th>Alkylation of phenol with methanol over mixed oxides of tin with some rare earth elements</th>
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<td>Alkylation of phenol with methanol has been carried out over Sn-La and Sn-Sm mixed oxides of varying compositions at 623K in a vapour phase flow reactor. It is found that the product selectivity is greatly influenced by the acid-base properties of the catalysts.</td>
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<td>T M Jyothi, B S Rao, S Sugunan* &amp; K Sreekumar</td>
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<th>1256</th>
<th>Photocatalytic destruction of organic pollutants in a Pt/TiO₂ semiconductor particulate system</th>
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<td>Visible light driven photodetoxification of water-bound pollutants has been achieved using Pt/TiO₂ semiconductor photocatalyst, FeCl₃ photosensitizer. A working mechanism involving the formation of a hydroxyl radical is proposed.</td>
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<td></td>
<td>Debabrata Chatterjee* &amp; Chandan Bhattacharya</td>
</tr>
</tbody>
</table>
Catalytic hydrogenation of tetrahydrophthalic anhydride

Yang Ruina*, Li Caiyun, Hou Yimin, Hu Xiaoyuan & Jin Dough

Thermodynamics of aqueous solutions of p-toluenesulphonic acid and its some alkali metal salts in the temperature range of 298.15 K to 353.15 K

Bijan Das* & Kenneth S Pitzer

Estimation of difference in heat capacities between fluid and ideal gas using equation of states

H I1oukani* & B Nikoobakht

Kinetics and mechanism of oxidation of tellurium (IV) by pyridinium chlorochromate in aqueous hydrochloric acid

D D Virkar & G S Gokavi*

Kinetic and mechanistic studies on the oxidation of ninhydrin by sodium N-bromo -p-toluenesulphonamide in perchloric acid medium

Puttaswamy* & R Ramachandrapa
1277. Copper(II) complexes with bis thiazole based ligands: Spectral, cyclic voltammetric and EPR studies

Sanjib Kumar Das & Pavan Mathur*

A series of complexes of the type [CuLX₂] have been synthesized, where L is a potentially tridentate ligand carrying pendant benzothiazolyl groups. EPR reveals a distorted tetragonal geometry, while an anodic shift in the reduction potential is correlated to a decrease in $d_{x^2-y^2}$ orbital energy.

1283 Heterocarboxylates of dibutyltin(IV) aluminium(III) -μ-oxoisopropoxy acetate and dibutyltin (IV) aluminium(III) -μ-oxoisopropoxide

A Aggarwal, Sonika, S Aggarwal & A K Narula*

A reaction of dibutyltin(IV) aluminium(III) -μ-oxoisopropoxy acetate and dibutyltin (IV) aluminium(III) -μ-oxoisopropoxide with a ligand L results in the formation of the complex A. The reaction can be represented as:

$$\text{Bu}_2\text{Sn(OAc)OAl(OPr)}_2 + n\text{HL} \rightarrow \text{Bu}_2\text{Sn(OAc)OAl(OPr)}_{n-1}\text{L}_n$$

Benzene

A

Reflux

Bu₂SnO₂Al₂(OPr)₄ + nHL → Bu₂SnO₂Al₂(OPr)₄L₄

Benzene

Reflux

Bu₂SnO₂Al₂(OPr)₄ + nPr'OH

A

Reflux

Bu₂SnO₂Al₂(OPr)₄

B

1286 Synthesis and characterization of some lanthanide complexes of 2,6-diacetylpyridine 2-thenoylnicotinoyldihydrazone

B Singh* & T B Singh

B Singh* & T B Singh

1291 Synthesis and structural elucidation of heterobimetallic complexes comprising palladium(II) and a group fourteen element

Kripa Sharma, Nighat Fahmi & R V Singh*
Synthesis and characterization of some mixed ligand complexes of cadmium(II) ion with 1,1-dicyanoethylene-2,2-dithiolate and nitrogen bases

M K Singh

Synthesis and characterization of yttrium and lanthanide perchlorate complexes of 4-salicylideneamino-3-mercapto-6-methyl-1,2,4-triazin(4H)-5-one

B Ramachandra & B Narayana*

Reversed phase chromatographic separation of vanadium(IV) using organophosphines

Vanadium(IV) has been separated from W(VI), Cr(III), Mn(II) and Pb(II) on silica gel columns loaded with bis(2,4,4-trimethylpentyl)phosphinic acid or bis(2,4,4-trimethylpentyl) dithiophosphinic acid.

Archana Saily & S N Tandon*

Spectrophotometric determination of vitamin C using Fe(II)-1-(2-pyridylazo)-2-naphthol complex

An extractive spectrophotometric procedure based on the complexation of reduced iron(II) with 1-(2-pyridylazo)-2-naphthol for the estimation of micro amounts of vitamin C is described. The applicability of the method has been tested by analysing some of the marketed products of vitamin C and biological samples.

Satya Prakash Arya*, Meenakshi Mahajan & Preeti Jain
Potentiometric study of the multiple equilibria in nickel (II) and copper(II) mixed ligand complexes containing nicotinic acid and imidazoles

The best-fit computer model obtained by the analysis of pH-titration data in the Ni(II) and Cu(II)-nicotinic acid (A)-imidazole, benzimidazole, histamine and t-histidine (B) systems show the presence of MABH, MAB or MAB₂ complexes. The higher stability observed for MAB compared to MAB₂ complexes in the imidazole/benzimidazole (B) systems has been accounted for by considering the size of the chelate ring formed by A.

M Sivasankaran Nair*, M A Neelakantan & S S Sunu

A simple spectrophotometric method for the determination of some organophosphorus insecticides

A photometric titration method for the determination of organophosphorus insecticides in their commercial formulations has been developed. Potassium hydroxide hydrolyses oxydenton methyl, malathion, dimethoate and formothion smoothly and quantitatively in aqueous terti-butanol and the residual alkali is instantaneously transformed into bright yellow potassium benzyl trithiocarbonate (through reaction with carbon disulphide and benzyl mercaptan).

B C Verma*, Satish Kumar, S B Kalia, Sumita Sood & D K Sharma

Book Review

Supramolecular engineering of synthetic metallic materials, conductors and magnets (Authors: Jaume Veciana, Concepcio Rovira & David B Amabilino)

Lallan Mishra

Annual Index

Authors for correspondence are indicated by (*)