

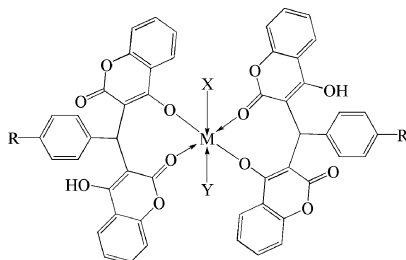
## CONTENTS

Volume 21 Number 9

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### Section: Bioorganometallic Chemistry

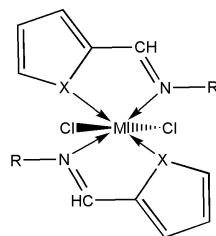
The synthesized dicoumarol complexes have been well characterized using spectroscopic techniques. They exhibit good antibacterial activity. The molecular analyses result of plasmid pBR322 DNA gel electrophoresis suggests effective DNA binding with metal complexes.



P. B. Pansuriya and M. N. Patel\* ..... 719–727

*Dicoumarol complexes of Cu(II), Fe(II) and Fe(III): preparation, characterization, in-vitro antibacterial and DNA binding activity*

Pyrrolyl and thienyl derived sulphonamides and their metal complexes have been synthesized and characterized by elemental analyses, molar conductances, magnetic moments, IR, NMR and electronic spectral data. These compounds have been screened for *in-vitro* antibacterial activity against four Gram-negative (*E. coli*, *S. flexneri*, *P. aeruginosa* and *S. typhi*) and two Gram-positive (*B. subtilis* and *S. aureus*) bacterial strains and, for *in-vitro* antifungal activity against *T. longifusus*, *C. albicans*, *A. flavus*, *M. canis*, *F. solani* and *C. glabrata*. The brine shrimp bioassay was also carried out to study their *in-vitro* cytotoxic properties against *Artemia salina*.



M = Co(II), Cu(II), Ni(II) or Zn(II)

Z. H. Chohan\* and M. M. Naseer ..... 728–738

*Metal-based sulfonamides: synthesis, characterization, antibacterial, antifungal and cytotoxic properties of pyrrolyl- and thienyl-derived compounds*

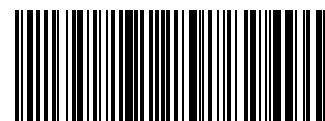
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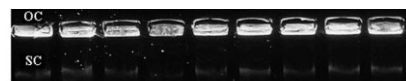
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Cu(II) heterochelates have been synthesized and characterized using spectroscopic technique. All the chelates exhibit higher antimicrobial activity than parental compounds. The absorption titration for sperm herring DNA and gel electrophoresis for pBR322 DNA show interpretative interaction of DNA with Cu(II) heterochelates.



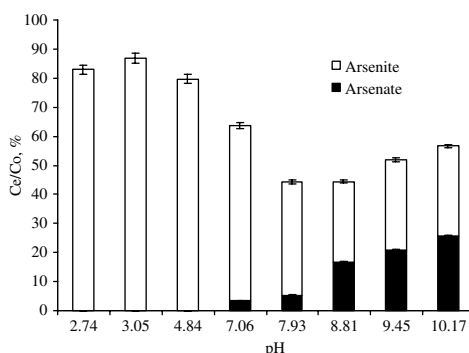
Lane 1: pBR322 (control), lane 2: pBR322 + I, lane 3: pBR322 + II, lane 4: pBR322 + III, lane 5: pBR322 + IV, lane 6: pBR322 + V, lane 7: pBR322 + VI, lane 8: pBR322 + VII, lane 9: pBR322 + VIII

P. B. Pansuriya and M. N. Patel\* ..... 739–749

*Synthesis, spectral, thermal, DNA interaction and antimicrobial properties of novel Cu(II) heterochelates*

## Section: Speciation Analysis and Environment

Batch experiments showed that arsenic sorption onto FeOMC depended on pH and some anions (i.e.,  $\text{PO}_4^{3-}$  and  $\text{SiO}_3^{2-}$ ). Arsenate was observed in the systems spiked with only arsenite under alkaline conditions, attributed to both direct and catalytic oxidation of arsenite on the solid surfaces. Arsenic sorption under various pH conditions could be well explained by the surface complexation model.

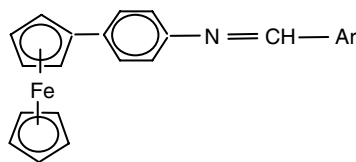


Z. Gu and B. Deng\* ..... 750–757

*Arsenic sorption and redox transformation on iron-impregnated ordered mesoporous carbon*

## Section: Materials, Nanoscience and Catalysis

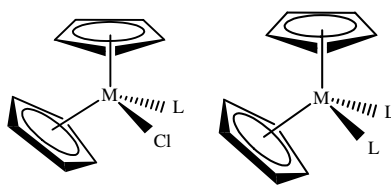
Some novel Schiff bases bearing phenyl ferrocene were synthesized and subsequently characterized by spectroscopic methods and elemental analyses. The structure of compound F1 was also determined by single crystal analysis.



F. U. Shah, Z. Akhter\*, H. M. Siddiqi and M. Parvez ..... 758–762

*Synthesis, structure and characterization of some Schiff bases bearing phenylferrocene*

Derivatives of the types  $\text{Cp}_2\text{MCl}_{2-n}\{\text{O}(\text{C}_6\text{H}_4)\text{CH}=\text{NC}_6\text{H}_5\}_n$  and  $\text{Cp}_2\text{MCl}_{2-n}\{\text{OC}(\text{CH}_3)=\text{CHC}(\text{R})=\text{NC}_6\text{H}_5\}_n$  (where  $\text{R} = \text{CH}_3$  or  $\text{C}_6\text{H}_5$  and  $n = 1$  or  $2$ ) have been prepared and characterized by spectroscopic and FAB mass and TGA studies. These derivatives undergo soft transformation to pure titania and zirconia at low sintering temperatures as indicated by XRD and SEM studies.



[where  $\text{M} = \text{Ti(IV)}$  or  $\text{Zr(IV)}$ ]

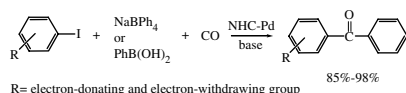
N. Sharma, V. Sharma, R. Bohra\* and V. S. Raju ..... 763–771

*Synthesis, characterization and soft transformation of some bis(cyclopentadienyl) Ti(IV) and Zr(IV) complexes of Schiff's base ligands to nano-sized titania or zirconia materials*

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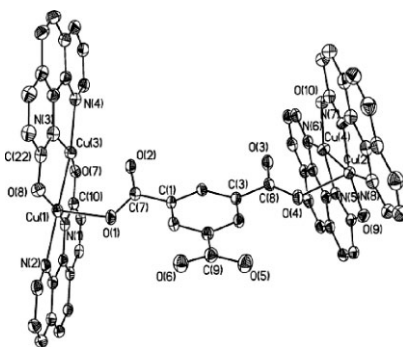
Highly efficient and chemoselective *N*-heterocyclic carbene palladium complex-catalyzed multicomponent carbonylative Suzuki reaction with sodium tetraphenylborate used as phenylating reagent has been demonstrated in this paper. Both electron-rich and electron-deficient aryl iodides gave unsymmetric aryl ketones in excellent yields.



S. Z. Zheng, L. W. Xu and C. G. Xia\* . . . .  
772-776

*Highly efficient N-Heterocyclic carbene-palladium complex-catalyzed multicomponent carbonylative Suzuki reaction: novel practical synthesis of unsymmetric aryl ketones*

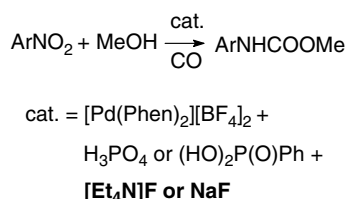
A new complex  $[(\text{Cu(II)}/\text{Cu(I)})_2(\text{ophen})_4(\text{Htp})] \cdot 2\text{H}_2\text{O}$  has been synthesized and characterized. The X-ray structural analysis of  $[(\text{Cu(II)}/\text{Cu(I)})_2(\text{ophen})_4(\text{Htp})] \cdot 2\text{H}_2\text{O}$  reveals two crystallographically independent dimeric  $[\text{Cu}_2(\text{ophen})_2]^+$  units bridged by two  $\mu_1$ -carboxylate groups of the tpt ligand into a butterfly-shaped molecule in the crystal structure.



X.-B. Chen\*, B. Chen, Y.-Z. Li and X.-Z. You . . . . . 777-781

*Remarkable solvent effects in the hydro- and solvothermal synthesis of copper-1,10-phenanthroline complexes*

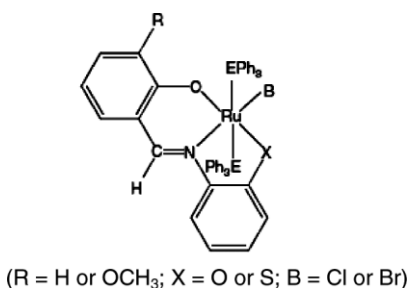
Fluorides promote the palladium-phenanthroline-catalyzed carbonylation of nitroarenes to carbamates. The effect is more evident on the rate of the reaction at short reaction times, but a positive effect on selectivity is also observed under certain conditions. The effect is observed even under conditions under which chloride inhibits the reaction. Tetraethylammonium is a better counteranion than sodium.



M. Gasperini, F. Ragaini\*, S. Cenini, E. Gallo and S. Fantauzzi . . . . 782-787

*Fluoride effect on the palladium-phenanthroline catalyzed carbonylation of nitroarenes to carbamates*

The hexacoordinate ruthenium(III) complexes of the type  $[\text{RuB}(\text{EPh}_3)_2(\text{L})]$  (B = Cl or Br; E = P or As; L = tridentate Schiff base dianion) were synthesized and characterized by analytical and spectral techniques. The new complexes were found to catalyze the oxidation of benzyl alcohol and cyclohexanol to corresponding carbonyl compounds in presence of *N*-methylmorpholine-*N*-oxide.



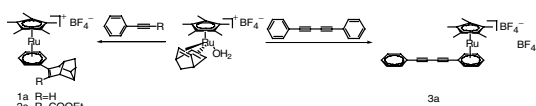
S. Priyarega, R. Prabhakaran, K. R. Aranganayagam, R. Karvembu and K. Natarajan\* . . . . . 788-793

*Synthetic and catalytic investigations of ruthenium(III) complexes with triphenylphosphine/triphenylarsine and tridentate Schiff base*

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Formal  $[2 + 2 + 2]$  addition reactions of  $[\text{Cp}^*\text{Ru}(\text{H}_2\text{O})(\text{NBD})]\text{BF}_4$  (NBD = norbornadiene) with  $\text{PhC}\equiv\text{CR}$  ( $\text{R} = \text{H}$ , COOEt) give  $[\text{Cp}^*\text{Ru}(\eta^6\text{-C}_6\text{H}_5\text{-C}_9\text{H}_8\text{R})]\text{BF}_4$  (**1a**,  $\text{R} = \text{H}$ ; **2a**,  $\text{R} = \text{COOEt}$ ), respectively. While treatment of  $[\text{Cp}^*\text{Ru}(\text{H}_2\text{O})(\text{NBD})]\text{BF}_4$  with  $\text{PhC}\equiv\text{C-C}\equiv\text{CPh}$  give  $[\text{Cp}^*\text{Ru}(\eta^6\text{-C}_6\text{H}_5\text{-C}\equiv\text{C-C}\equiv\text{CPh})]\text{BF}_4$  (**3a**). Their structures were determined by X-ray crystallography.

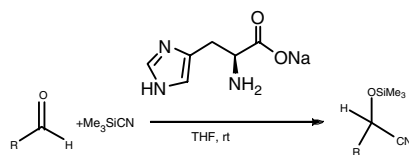


W.-C. Xiong, G.-A. Yu, Q. Gan, J. Yin, X.-G. Meng and S. H. Liu\* ... 794–797

Reactions of  $[\text{Cp}^*\text{Ru}(\text{H}_2\text{O})(\text{NBD})]^+$  with alkynes

## Section: Main Group Metal Compounds

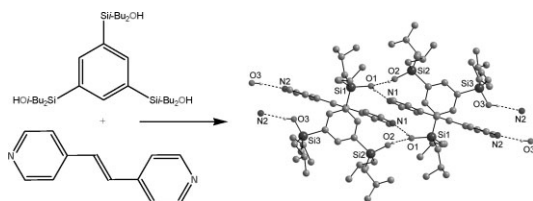
Sodium L-histidine acts as a highly effective catalyst for the cyanosilylation of various carbonyl compounds to the corresponding cyanohydrin trimethylsilyl ethers up to 99% yield. The reaction proceeds smoothly with 1 mol% of the catalyst loading at room temperature.



S. C. George, S. S. Kim\* and G. Rajagopal ..... 798–803

Cyanosilylation of carbonyl compounds catalyzed by sodium L-histidine

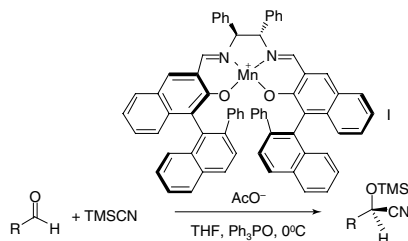
1,3,5-tris(diisobutylhydroxysilyl)benzene and *trans*-bis(4-pyridyl)ethylene form a supramolecular 1 : 1 complex featuring both  $\text{SiO}\cdots\text{O}(\text{H})\text{Si}$  and  $\text{Si-OH}\cdots\text{N}$  hydrogen bonds. The supramolecular motif differs substantially from previously reported complexes between 1,3,5-tris(diisopropylhydroxysilyl)benzene and related spacer bridged 4,4'-bis(pyridines).



J. Beckmann\* and S. L. Jänicke ..... 804–808

A supramolecular hydrogen-bonded complex between 1,3,5-tris(diisobutylhydroxysilyl)benzene and *trans*-bis(4-pyridyl)ethylene

Various aldehydes were subjected to enantioselective addition of TMSCN catalyzed by  $1/\text{Ph}_3\text{PO}$ . The reaction proceeds smoothly with 0.25 mol% of catalyst loading at  $0^\circ\text{C}$ , giving up to 95% yield and 67% ee.



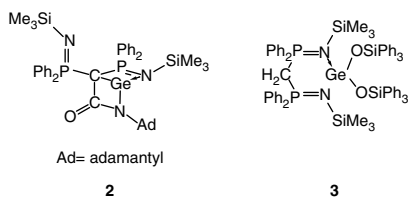
S. S. Kim\*, J. M. Kwak and S. C. George ..... 809–813

Enantioselective cyanosilylation of aldehydes catalyzed by  $\text{Mn}(\text{salen})$  complex/triphenyl phosphine oxide

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The reaction of bisgermavinylidene  $[(\text{Me}_3\text{SiN}=\text{PPh}_2)_2\text{C}=\text{Ge}\rightarrow\text{Ge}=\text{C}(\text{PPh}_2=\text{NSiMe}_3)_2]$  (1) with AdNCO (Ad = Adamantyl) and  $\text{Ph}_3\text{SiOH}$  afforded the [2 + 2] cycloaddition product  $[(\text{Me}_3\text{SiN}=\text{PPh}_2)_2\text{CGeC}(\text{O})\text{NAd}]$  (2) and the base-stabilized germanium(II) triphenylsiloxide  $[\text{H}_2\text{C}(\text{PPh}_2=\text{NSiMe}_3)_2\text{Ge}(\text{OSiPh}_3)_2]$  (3), respectively. The X-ray structures of 2 and 3 have been determined.



W.-P. Leung\*, K.-W. Kan, C.-W. So and  
T. C. W. Mak ..... 814–818

*Some addition reactions of bisgermavinylidene*

Book Review

R. Soetendorp ..... 819

*Intellectual property management: a guide  
for scientists, engineers, financiers and  
managers*

Book Review

R. O. Jenkins ..... 820

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biology: exploiting microbes and their  
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