

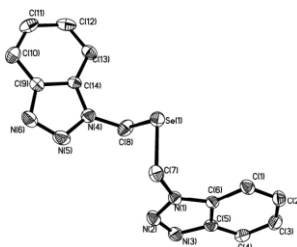
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Volume 21 Number 4

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Section: Bioorganometallic Chemistry

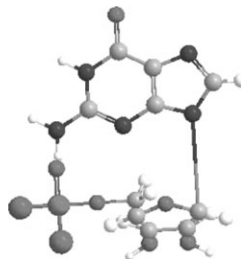
A new ligand, Se (CH₂-N-Btrazole)₂ and its cobalt(II) complex, Co(L^{Se})₂(SCN)₂, have been synthesized and the molecular been determined by X-ray techniques. The ligand L^{Se} presents very good SOD activity.



Y. Lu, Y. Tang, H. Gao, Z. Zhang* and H. Wang 211–217

The synthesis, crystal structures and SOD activities of a new ligand (L^{Se}) and Co(L^{Se})₂(SCN)₂ complex [L^{Se} = selenium ether bis-(N-1-methyl- benzotriazole)]

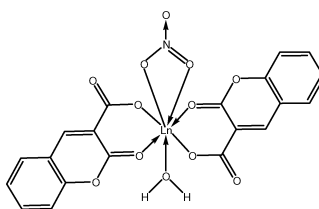
Both NMR spectra and UV–vis titration data have showed that GMP coordinates via guanine base to thallium(I) ion in the pH range of study (1.5–10). The formation constants at different media were analyzed in terms of Kamlet and Taft's parameters. In this work, we have also used the normalized polarity parameter, E_T^N , alone and in combination with some of the Kamlet–Taft parameters to find a better correlation of the formation constants at different aqueous solutions of methanol.



Farrokh Gharib* and Fatemeh Sadeghi 218–225

Solvent effects on complexation of thallium(I) with guanosine 5'-monophosphate in methanol–water mixtures

The Ce(III), La(III) and Nd(III) complexes of coumarin-3-carboxylic acid were synthesized and determined by means of spectral data (IR, Raman), TGA and elemental analysis. The newly synthesized compounds were assayed for cytotoxicity against SKW-3, HL-60 and Reh cells. The complex of neodymium(III) induced approximately 50% reduction of the survival HL-60 and SKW-3 cells at concentration 200 μ M.



I. Kostova* and G. Momkov 226–233

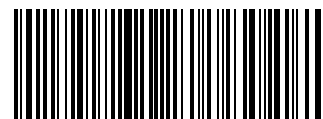
Synthesis, characterization and cytotoxicity evaluation of new cerium(III), lanthanum(III) and neodymium(III) complexes

Identification statement

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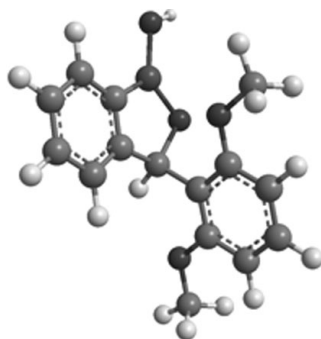
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The Br/Li exchange was applied to generate an *ortho*-lithiated derivative of protected phenylboronic acid. This intermediate was quenched with electrophiles to give various *ortho*-functionalized arylboronic acids and 1,3-dihydro-1-hydroxy-3-arylbenzo[*c*][2,1]oxaboroles; one of these compounds was characterized by X-ray diffraction



M. Dąbrowski, P. Kurach, S. Luliński* and J. Serwatowski 234–238

*An ortho-lithiated derivative of protected phenylboronic acid: an approach to ortho-functionalized arylboronic acids and 1,3-dihydro-1-hydroxybenzo[*c*][2,1]oxaboroles*

Section: Speciation Analysis and Environment

The presence was established of tributyltin, dibutyltin and monobutyltin in outdoor settled dust collected from several sites on the island of Malta. Concentrations as high as 15.5 and 18.7 $\mu\text{g Sn g}^{-1}$ were determined in certain areas. The distribution of these contaminants suggests that organotins originate mainly from marine paint removal work in Grand Harbour and the municipal solid waste landfill at Maghtab and the higher levels of contamination may be of concern for the health of young children.

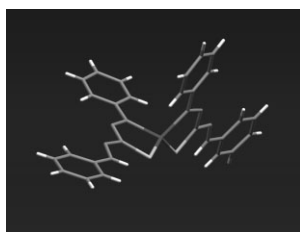


R. Decelis and A. J. Vella* . . . 239–245

Contamination of outdoor settled dust by butyltins in Malta

Section: Materials, Nanoscience and Catalysis

The solution behaviour of both the $\text{Zn}(\text{HDz})_2$ photochromic complex and the H_2Dz ligand was investigated by Vis spectroscopy, advanced NMR techniques and Density Functional calculations. This theoretical and experimental approach has enabled to shed light on the structure and bonding of both the stable and activated complex forms involved in the photochromic equilibrium. These results disclose interesting perspectives for the inclusion of $\text{Zn}(\text{HDz})_2$ in transparent oxide matrices aimed at the development of advanced optical devices. Molecular structure of $\text{Zn}(\text{HDz})_2$



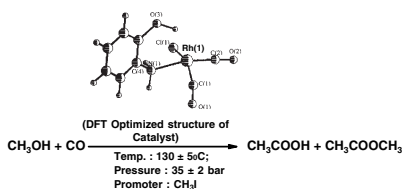
L. Armelao,* G. Bandoli, D. Barreca, G. Bottaro, E. Tondello, A. Venzo and A. Vittadini 246–254

Molecular photochromic systems: a theoretical and experimental investigation on zinc(II) dithizonate

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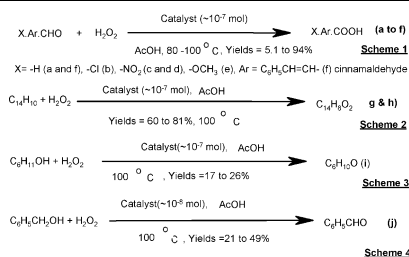
The complexes $[\text{Rh}(\text{CO})_2\text{CIL}](1)$, where $\text{L} =$ 2-aminophenol (a), 3-aminophenol (b) and 4-aminophenol (c), have been synthesized and characterized. The ligands are coordinated to the metal centre through an N-donor site. The complexes **1** undergo oxidative addition (OA) reactions with various alkyl halides (RX) like CH_3I , $\text{C}_2\text{H}_5\text{I}$ and $\text{C}_6\text{H}_5\text{CH}_2\text{Cl}$ to produce Rh(III) complexes of the type $[\text{Rh}(\text{CO})(\text{COR})\text{XCIL}]$, where $\text{R} = -\text{CH}_3(2)$, $-\text{C}_2\text{H}_5(3)$, $\text{X} = \text{I}$; $\text{R} = \text{C}_6\text{H}_5\text{CH}_2-$ and $\text{X} = \text{Cl}$ (4). The OA reaction with CH_3I follows a two-stage kinetics and shows the order of reactivity as $1\text{b} > 1\text{c} > 1\text{a}$. The minimum energy structure and Fukui function values of the complexes **1a–1c** were calculated theoretically using a DND basis set with the help of Dmol³ program to substantiate the observed local reactivity trend. The catalytic activity of the complexes **1** in carbonylation of methanol, in general, is higher (TON 1189–1456) than the species $[\text{Rh}(\text{CO})_2\text{I}_2]^-$ (TON 1159).



M. Sharma, B. J. Sarmah, P. Bhattacharyya, R. C. Deka and D. K. Dutta* ... 255–263

Dicarbonylrhodium(I) complexes of aminophenols and their catalytic carbonylation reaction

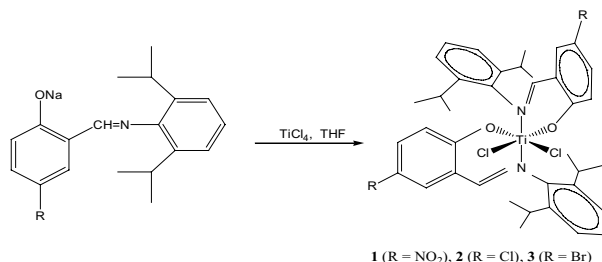
Without following tedious separation, *in-situ* prepared sodium ferrate oxidizes aromatic alcohols and aldehydes to their corresponding carbonyl compounds or aromatic acids, respectively, in excellent yields under microwave irradiation, when adsorbed on montmorillonite in the presence of copper nano-particles. Aromatics with amino or hydroxy groups polymerize.



P. K. Tandon*, S. B. Singh and M. Srivastava 264–267

Synthesis of some aromatic aldehydes and acids by sodium ferrate in presence of copper nano-particles adsorbed on K 10 montmorillonite using microwave irradiation

Three substituted salicylaldehyde ligands (1a, 2a, 3a) and their titanium complexes bis[N-(5-nitrosalicylidene)-2,6-diisopropylanilinato]titanium(IV)dichloride (1), bis[N-(5-chlorosalicylidene)-2,6-diisopropylanilinato]titanium(IV)dichloride (2) and bis[N-(5-bromosalicylidene)-2,6-diisopropylanilinato]titanium(IV)dichloride (3) were synthesized, characterized and used as catalysts for ethylene polymerization in the presence of MAO. Their catalytic activities are much higher than that of corresponding complex with no substituent in the 5-position of the salicylaldehyde ring. All these complexes are favorable for producing polyolefins with a broad molecular weight distribution and high melting points.



Synthetic route of novel titanium complexes **1–3**

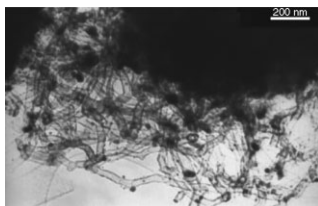
J. Sun*, Z. Cheng, Y. Nie, H. Schumann and M. Hummert 268–274

Novel titanium complexes bearing two chelating phenoxy-imine ligands and their catalytic performance for ethylene polymerization

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Multiwalled carbon nanotubes have been synthesized by the floating catalyst method using toluene as the carbon source and mixtures of ferrocene and ferrocenyl sulfide as the catalyst.

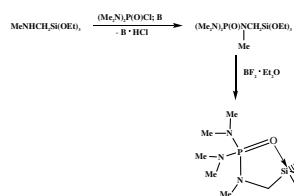


M. Sarah Mohlala, Xin-Ying Liu, Mike J. Witcomb and Neil J. Coville* 275–280

Carbon nanotube synthesis using ferrocene and ferrocenyl sulfide. The effect of sulfur

Section: Main Group Metal Compounds

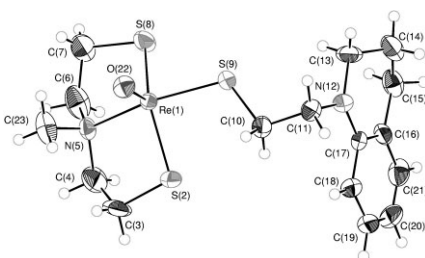
N,N,N',N',N''-pentamethyl-*N''*-(trifluorosilylmethyl)phosphoric triamide exists in (O–Si)chelate form with intramolecular $P=O \rightarrow Si$ coordination bond.



N. F. Lazareva*, A. I. Albanov, I. M. Lazarev and V. A. Pestunovich 281–287

N,N,N',N',N''-pentamethyl-*N''*-[(trifluorosilyl)methyl] phosphoric triamide. first example of the existence of intramolecular $P=O \rightarrow Si$ coordination bond in the row Si-containing phosphoric triamides

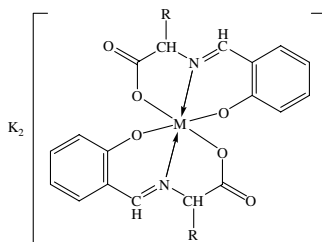
New oxorhenium complexes with 3-methylazapentane-1, 5-dithiolate (SNMeS) and thiol functionalized monodentate tetrahydroquinolyl and tetrahydroisoquinolyl derivatives, namely THQ $(CH_2)_2SReO$ (SNMeS) and THIQ $(CH_2)_2SReO$ (SNMeS), have been synthesized. The characterization of complexes involved elemental analysis, IR, 1H and ^{13}C NMR spectroscopy and X-ray crystallographic analysis. Metal complexes were found to be active in psychotropic *in vivo* and cytotoxicity *in vitro* screening.



A. Zablotskaya*, I. Segal, E. Lukevics, S. Belyakov and H. Spies 288–293

Tetrahydroquinoline and tetrahydroisoquinoline mixed ligand rhenium complexes with the SNS/S donor atom set

A new series of antibacterial and antifungal amino acid derived Schiff-bases and their cobalt(II), copper(II), nickel(II) and zinc(II) metal complexes have been synthesized and characterized by their elemental analyses, molar conductances, magnetic moments, IR and electronic spectral measurements. The synthesized ligands, along with their metal complexes, were screened for their *in-vitro* antibacterial activity against four Gram-negative (*Escherichia coli*, *Shigella flexneri*, *Pseudomonas aeruginosa* and *Salmonella typhi*) and two Gram-positive (*Bacillus subtilis* and *Staphylococcus aureus*) bacterial strains and for *in-vitro* antifungal activity against *Trichophyton longifusus*, *Candida albicans*, *Aspergillus flavus*, *Microsporum canis*, *Fusarium solani* and *Candida glabrata*.



Z. H. Chohan*, M. Arif and M. Sarfraz 294–302

Metal-based antibacterial and antifungal amino acid derived Schiff-bases: their synthesis, characterization and *in-vitro* biological activity