Applied Organometallic Chemistry

(Appl. Organometal. Chem.)

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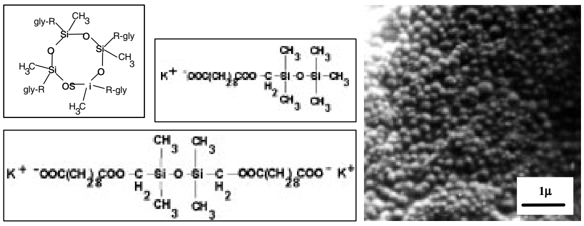
Section: Speciation Analysis and Environment

Monosaccharide-modified cyclosiloxanes were synthesized and characterized. These compounds, as well as potassium salts of sebacomethyldisiloxanes were used as surfactants in nanoprecipitation of polycaprolactone, polysiloxane and polysulfone. Particles of 100–400 nm diameter were obtained, depending on surfactant and polymer core.



C. Racles*, T. Hamaide and A. Ioanid 235–245

Siloxane surfactants in polymer nanoparticles formulation

The acid dissociation constants of 2,4,6-trimercaptotriazine (H_3TMT) were determined by acid–base titration and now can be employed in the preparation of complexes having specific Cu–TMT ratios. The extremely small value of K_{SP} for $Cu_3(TMT)_2 \cdot 2H_2O$ (3) (2.11×10^{-46}) indicates that Na_3TMT is an advantageous chelating agent in precipitating complex copper (e.g. copper-ammine species) from wastewaters. The influence of ammonia concentration, pH and settling time on the effectiveness of copper precipitation was investigated.

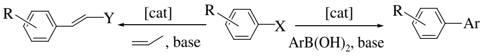
$$3[Cu(NH_3)_4]^{2+} + 2TMT^{3-} \leftrightarrow Cu_3(TMT)_2\,(s) + 12NH_3$$

L. Dongmei, L. Yunbai*, Y. Ping and C. Zhigang 246–253

Chemistry of copper trimercaptotriazine (TMT) compounds and removal of copper from copper-ammine species by TMT

Section: Materials, Nanoscience and Catalysis

A convenient and highly user friendly method for Heck and Suzuki cross-coupling reaction is presented.



S. Demir, I. Özdemir* and B. Çetinkaya 254–259

Use of bis(benzimidazolium)–palladium system as a convenient catalyst for Heck and Suzuki coupling reactions of aryl bromides and chlorides

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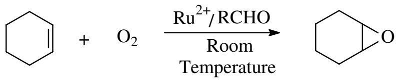
The present work shows the catalytic activity of a series of carbonyl ruthenium complexes in the epoxidation of olefins co-catalyzed by isobutyl-aldehyde. The complexes display catalytic activity in the epoxidation of the cyclohexene with high selectivity.



P. Aguirre*, S. Zolezzi, J. Parada, E. Bunel, S. A. Moya* and R. Sariego .. 260–263

Ruthenium carbonyl complexes in catalytic epoxidation of olefins co-catalyzed by isobutyl-aldehyde

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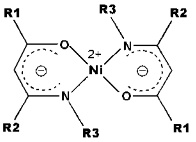
The polymerization of methyl methacrylate (MMA) was investigated using a series of bis(β-ketoamino)nickel(II) complexes (Scheme 1) in combination with methylaluminoxane in toluene solution. The binary catalyst is necessary for initiating MMA polymerization and producing PMMA with high molecular weights but broad molecular weight distributions. The effects of reaction temperature and Al : Ni molar ratios on the polymerization of MMA were examined in detail. Both steric bulk and electronic effects of the substituents around the imino group in the ligand on MMA polymerization activities could be observed. Relative to electronic effects, the steric hindrance of the ligands displayed a more significant effect on the catalytic activities, with the catalytic activity sequence observed in the order **4** > **1** > **2** > **3** > **5** > **6**. Structural analyses of the polymers by ^{13}C NMR spectra indicate that polymerization yields PMMA with a syndiotactic-rich atactic microstructure.



R1	R2	R3	Complex
Me	Me	Naphthyl	1
Ph	Me	Naphthyl	2
Me	Me	2,6-dimethylphenyl	3
Me	Me	Phenyl	4
Me	Me	2,6-diisopropylphenyl	5
Ph	Me	2,6-diisopropylphenyl	6

X. He and Q. Wu* 264–271

Polymerization of methyl methacrylate using bis(β-ketoamino)nickel(II)–MAO catalytic systems

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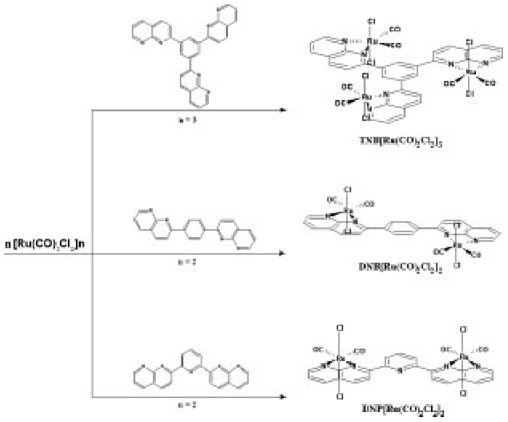
This work shows to the synthesis and characterization of new carbonyl complexes derivates of 1,8-naphthyridine. Naphthyridine derivates can be prepared via Friedländer condensation of 2-aminonicotinaldehyde and an enolizable ketone.



J. Gajardo, J. C. Araya, S. A. Moya*, A. J. Pardey, V. Guerchais, H. Le Bozec and P. Aguirre* 272–276

New polynuclear carbonyl ruthenium (II) complexes derived from 1,8-naphthyridine

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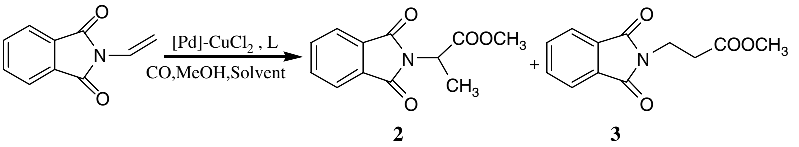
The palladium-catalyzed selective alkoxycarbonylation of enamide was studied using *N*-vinylphthalimide as the model substrate. Good yields and high regioselectivities of either the branched or linear products were obtained under optimum reaction conditions. The primary optical yield (12.3%) of *N*-Phthaloyl-L-alanine methyl ester (**2**) was obtained using (*S*)-(+)-BNPPA as the chiral ligand.



B. C. Zhu and X. Z. Jiang* 277–282

Palladium-catalyzed selective alkoxycarbonylation of N*-vinylphthalimide*

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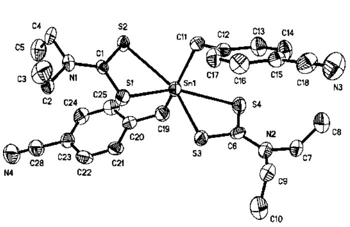
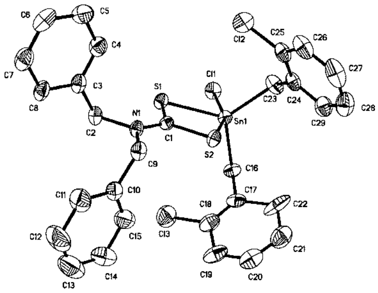
Section: Main Group Metal Compounds

H. D. Yin* and S. C. Xue 283–289

Synthesis and characterization of organotin complexes with dithiocarbamates and crystal structures of (4-NCC$_6$H$_4$CH$_2$)$_2$ Sn(S$_2$CNEt$_2$)$_2$ and (2-ClC$_6$H$_4$CH$_2$)$_2$Sn(Cl)S$_2$ CNBz$_{24}$CH$_2$)$_2$Sn(Cl)S$_2$CNBz$_2$

Ten organotin derivatives with dithiocarbamates of the formulae (4-NCC$_6$H$_4$ CH$_2$)$_2$Sn(S$_2$CNEt$_2$)$_2$ (**1**), (4-NCC$_6$H$_4$CH$_2$)$_2$Sn(S$_2$CNBz$_2$)$_2$ (**2**), (4-NCC$_6$H$_4$CH$_2$)$_2$Sn (S$_2$CN(CH$_2$CH$_2$)$_2$NCH$_3$)$_2$ (**3**), (2-ClC$_6$H$_4$CH$_2$)$_2$Sn(S$_2$CNEt$_2$)$_2$ (**4**), (2-ClC$_6$H$_4$CH$_2$)$_2$ Sn(S$_2$CNBz$_2$)$_2$ (**5**), (4-NCC$_6$H$_4$CH$_2$)$_2$Sn(Cl)S$_2$CNEt$_2$ (**6**), (4-NCC$_6$H$_4$CH$_2$)$_2$Sn(Cl)S$_2$ CNBz$_2$ (**7**), (4-NCC$_6$H$_4$CH$_2$)$_2$SnS$_2$CN(Cl)CH$_2$CH$_2$)$_2$NCH$_3$ (**8**), (2-ClC$_6$H$_4$CH$_2$)$_2$ Sn(Cl)S$_2$CNEt$_2$ (**9**) and (2-ClC$_6$H$_4$CH$_2$)$_2$Sn(Cl)S$_2$CNBz$_2$ (**10**) have been prepared, respectively. All complexes were characterized by elemental analyses, IR and NMR. The crystal structures of the complexes **1** and **10** were determined by X-ray single crystal diffraction.

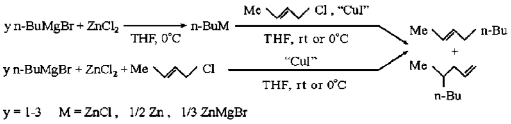




E. Erdik* and M. Koçoğlu 290–294

A brief survey on the copper catalyzed allylation of alkylzinc and Grignard reagents under Barbier conditions

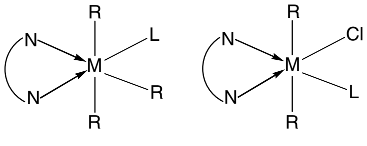
The same regioselectivity can be obtained in the CuI catalyzed allylic coupling of *n*-butylzinc reagents prepared by either pre-transmetallation or *in situ* transmetallation of Grignard reagents in the presence of allylic partner and catalyst. *n*-Butylzinc bromide and di *n*-butylzinc undergo γ-selective allylation whereas tri *n*-butylzincate gives preferential α-selectivity. The regioselectivity obtained in the reaction of *n*-butyl bromide and E-crotyl chloride in the presence of Mg and CuCN is parallel to the coupling of preformed *n*-butylmagnesium bromide



A. Chaudhary, M. Agarwal and R. V. Singh* 295–303

Organotin(IV) and organolead(IV) complexes as biocides and fertility regulators: synthetic, spectroscopic and biological studies

The antifungal, antibacterial, antifertility aspects and spectroscopic characterization of novel chiral tin and lead complexes derived by amino acids as chiral auxiliary and 2,2′-bipyridine as a secondary ligand have been described. On the basis of the spectral studies the hexa-coordinated environment around the metal atom has been inferred. Finally all these complexes have been screened for their antimicrobial activity against a variety of fungal and bacterial strains and their reproductive outcomes on male albino rats at the dosage employed.



N⌒N = donor site of 2,2′-bipyridine
M = Sn(IV) or Pb(IV)
R = Ph or Me

Book Review

K. J. M. Beresford 304

Name reactions and reagents in organic synthesis