

Contents

Special Issue: Recent Advances in Organotin Chemistry

Preface 1435

Tin and organotin compounds in catalysis

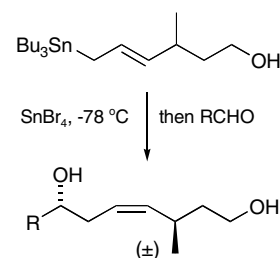
Communication

Somhairle MacCormick, Eric J. Thomas

J. Organomet. Chem. 691 (2006) 1437

Remote stereocontrol using (*E*)-6-hydroxy-4-methylhex-2-enyl(tri-*n*-butyl)stannane

Reactions of (*E*)-6-hydroxy-4-methylhex-2-enyl(tributyl)stannane with aldehydes, when promoted by tin(IV) bromide, proceed with effective 1,5-stereocontrol to give (*Z*)-1-substituted 1,5-*anti*-5-methylhept-3-ene-1,7-diols, precursors for the stereoselective synthesis of eight-membered lactones.



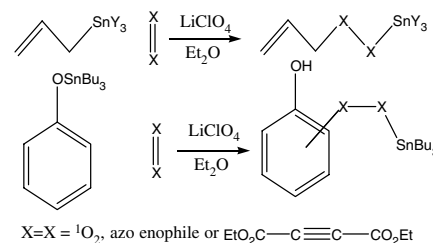
Review

Wojciech J. Kinart, Cezary M. Kinart

J. Organomet. Chem. 691 (2006) 1441

Catalysis of reactions of allyltin compounds and organotin phenoxides by lithium perchlorate

Metalloene reactions of allyltin compounds and organotin phenoxides with azo enophiles are strongly catalysed by LiClO₄. The analogous effect has been observed for photochemical oxidation of allyltin derivatives and reactions of organotin phenoxides with diethyl acetylenedicarboxylate.



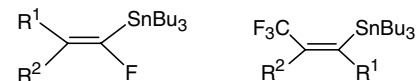
Regular papers

Yanchang Shen

J. Organomet. Chem. 691 (2006) 1452

Recent advances in fluorinated vinylstannanes and their synthetic utility

Fluorinated vinylstannanes have attracted much interest in recent years because they provided a useful and convenient methodology for the introduction of monofluoro, difluoro, trifluoro or polyfluoro functionality into organic molecules with retention of configuration, particularly in the synthesis of fluorine-containing naturally occurring compounds. This short review describes their synthesis and synthetic utility.



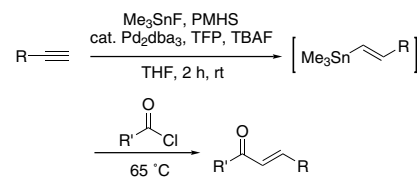
1. monofluoro, R¹, R² = H, alkyl, aryl etc.
2. difluoro, R¹ = F, R² = H, alkyl, aryl etc.
3. trifluoro, R¹, R² = H, alkyl, aryl etc.
4. polyfluoro, R¹ = F, R² = H, alkyl, aryl etc.

**Kyoungsoo Lee, William P. Gallagher,
Elli A. Toskey, Wenzheng Chong,
Robert E. Maleczka Jr.**

J. Organomet. Chem. 691 (2006) 1462

One-pot Pd-catalyzed hydrostannation/Stille reaction with acid chlorides as the electrophiles

A one-pot hydrostannation/Stille coupling sequence amenable to the employment of acid chloride electrophiles has been developed.

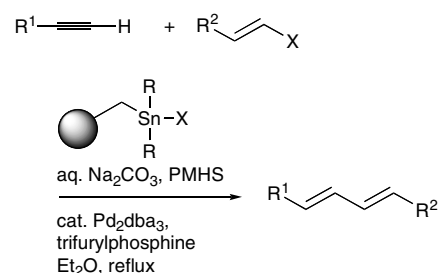


**Alejandro G. Hernán, Peter N. Horton,
Michael B. Hursthouse, Jeremy D. Kilburn**

J. Organomet. Chem. 691 (2006) 1466

New and efficient synthesis of solid-supported organotin reagents and their use in organic synthesis

Mild methodology has been developed for the very efficient synthesis of resin-bound tin chloride, tin hydride and distannanes. These novel organotin reagents have been used in a catalytic Stille coupling cycle and in atom transfer cyclisations. As expected the use of resin-bound tin reagents facilitated their easy removal at the end of the reaction.

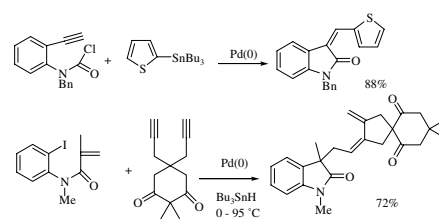


**Usman Anwar, Mark R. Fielding,
Ronald Grigg, Visuvanathar Sridharan,
Christopher J. Urch**

J. Organomet. Chem. 691 (2006) 1476

Palladium catalysed tandem cyclisation–organ capture processes. Part 8 [1]: In situ and preformed organostannanes. Carbamyl chlorides and other starter species

Carbamyl chlorides with a proximate alkyne/alkene undergo regioselective Pd catalysed cyclisation–organostannane capture to afford lactams in good yield whilst aryl iodides with a proximal alkene undergo an analogous process with in situ generated exocyclic-dienylstannanes in good yield.



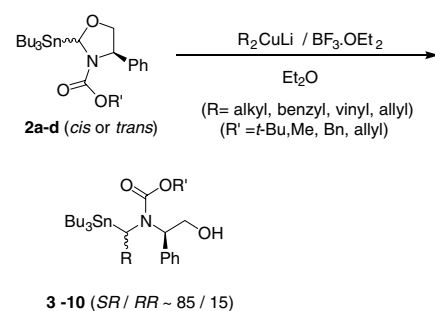
**Vincent Coeffard, Jean-Christophe Cintrat,
Erwan Le Grogne, Isabelle Beaudet,
Jean-Paul Quintard**

J. Organomet. Chem. 691 (2006) 1488

Diastereoselective synthesis of chiral α -aminoorganotributyltins via ring-opening of 2-tributylstannyloxazolidines

Reactions of 2-tributylstannyloxazolidines **2a–d** (*cis* or *trans*), derived from (*R*)-phenylglycinol protected as *N*-carbamate, with lithium diorganocuprates in presence of

boron trifluoride in diethyl ether provide the corresponding functionalized tributylstannyl- β -aminoalcohols **3–10** with diastereoselectivities close to 85:15 in favour of the (*S,R*)-isomer. The stereochemical trend is preserved using allyltributyltin as nucleophile and $\text{TiCl}_2(\text{O}i\text{-Pr})_2$ as Lewis acid in dichloromethane. The assignments of the (*S,R*) or (*R,R*) configurations in **3–10** were achieved on the basis of physicochemical data combined with a radiocrystallographic structure. Stereochemical preferences were rationalized by consideration of the interactions occurring in the iminium intermediates.

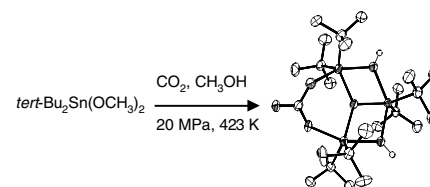


Danielle Ballivet-Tkatchenko, Romain Burgat, Stéphane Chambrey, Laurent Plasseraud, Philippe Richard

J. Organomet. Chem. 691 (2006) 1498

Reactivity of *di-tert*-butyldimethoxystannane with carbon dioxide and methanol: X-ray structure of the resulting complex

The direct synthesis of dimethyl carbonate with carbon dioxide as solvent and reagent in the presence of *tert*-Bu₂Sn(OCH₃)₂ led to a resting tin specie characterised as a trinuclear stannadistannoxane complex.

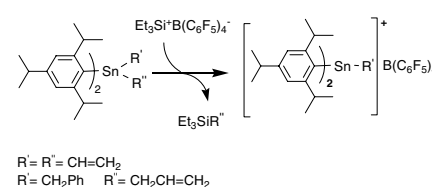


Liana Annunziata, Daniela Pappalardo, Consiglia Tedesco, Simona Antinucci, Claudio Pellecchia

J. Organomet. Chem. 691 (2006) 1505

Bis(2,4,6-triisopropylphenyl)tin(IV) compounds: Synthesis, single-crystal X-ray characterization and reactivity toward ionizing species and polar monomers

New organotin compounds of formula $\text{Tip}_2\text{SnR}^1\text{R}^2$ have been synthesized and characterized both in solid state and in solution. Their reactivity with ionizing agents was studied by NMR spectroscopy. The derivative cationic species exhibited activity in the polymerization of 1,4-butadiene, propylene oxide and ϵ -caprolactone.



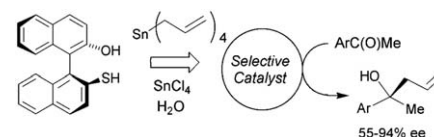
Notes

Oscar Prieto, Simon Woodward

J. Organomet. Chem. 691 (2006) 1515

Enantioselective catalytic allylation of arylmethylketones using tetraallyltin and tin(IV) chloride mixtures

Use of Sn(allyl)₄/SnCl₄ mixtures allows rapid access to a selective asymmetric allylation catalyst.

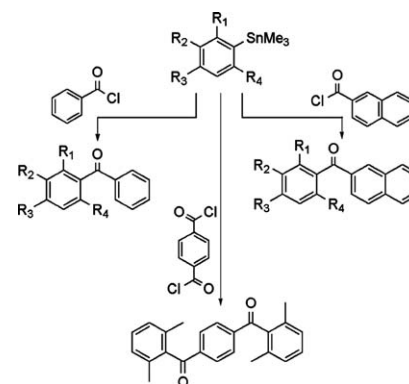


Gustavo F. Silbestri, Romina Bogel Masson, María T. Lockhart, Alicia B. Chopa

J. Organomet. Chem. 691 (2006) 1520

A catalyst-free synthesis of asymmetric diaryl ketones from aryltins

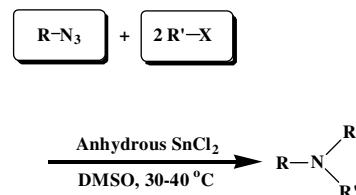
A series of diaryl ketones have been synthesized in good yields (40–78%) through the catalyst-free reaction of trimethylarylstannanes with aroyl chlorides. In addition, an attractive feature is that these reactions are completely regioselective making possible the synthesis of diarylketones which are not usually available under the influence of the directing forces of the substituents present in the aromatic ring.



Ujjal Kanti Roy, Sujit Roy*J. Organomet. Chem.* 691 (2006) 1525

SnCl₂ mediated efficient *N,N*-dialkylation of azides to *tertiary*-amine via potential stannamine intermediate

Under the aegis of anhydrous stannous chloride, the reaction of aliphatic or aromatic azides with organic halides (alkyl, benzyl, propargyl) lead to the formation of corresponding *N,N*-dialkylamines in good to excellent yields. Additional Pd(0) catalyst further enhances the yield in the case of allyl halides. The intermediacy of reactive stannamine is postulated for this new base free C–N bond forming strategy.

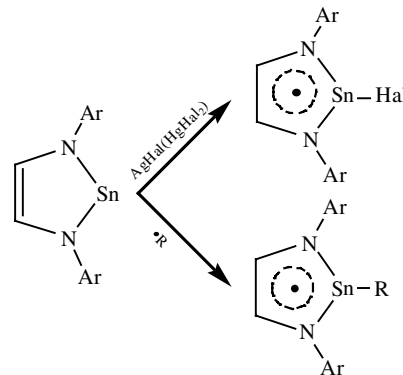


R = Ph, Naph, Bn, Ar;
R' = Me, 4-MeBn, propargyl, allyl, 2-Me-allyl, 3-Me-allyl

Coordination compounds: synthesis, structure and spectroscopic characterization*Communication***Alexander V. Piskunov, Igor A. Aivaz'yan, Vladimir K. Cherkasov, Gleb A. Abakumov***J. Organomet. Chem.* 691 (2006) 1531

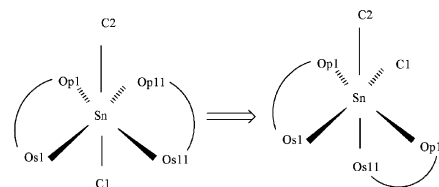
New paramagnetic *N*-heterocyclic stannylenes: An EPR study

The reactions of *N,N'*-bis[(2,6-di-*iso*-propylphenyl)-1,2,3-diazastannole-2-ylidene] with some radicals, mercury(II) or silver(I) halides have been investigated. The formation of new paramagnetic stannylene complexes has been shown by EPR spectroscopy.

*Regular papers***Miriam Rossi, Francesco Caruso***J. Organomet. Chem.* 691 (2006) 1535

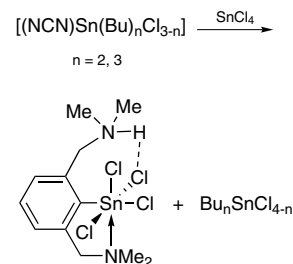
Trans–*cis* octahedral interconversion pathway in diorganotin compounds

Using structural data from bis(bidentate)diorganotin compounds in the Cambridge Structural Database a potential pathway for *trans*–*cis* interconversion is envisaged with rotation of 3 bonds and retention of metal coordination number 6.

**Sander H.L. Thoonen, Hein van Hoek, Elwin de Wolf, Martin Lutz, Anthony L. Spek, Berth-Jan Deelman, Gerard van Koten***J. Organomet. Chem.* 691 (2006) 1544

Synthesis of novel terdentate *N,C,N'*-coordinated butyltin(IV) complexes and their redistribution reactions with SnCl₄

Several Sn(IV) butyl complexes containing the potentially chelating NCN pincer ligand were prepared. Their redistribution reactions with SnCl₄ were found to involve the NCN ligand and not the butyl groups. The molecular structures of several of the Sn(NCN) complexes were determined. In two cases N–H···Cl–Sn hydrogen bonds were found.

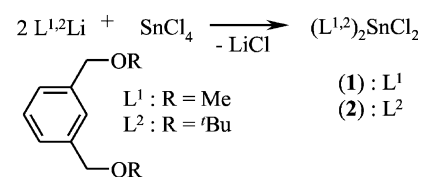


Blanka Kašná, Roman Jambor, Libor Dostál, Ivana Čisářová, Jaroslav Holeček

J. Organomet. Chem. 691 (2006) 1554

Double O,C,O-chelated diorganotin(IV) derivatives

Novel diorganotin(IV) compounds $(L^{1,2})_2\text{-SnCl}_2$, were prepared and characterized by ^1H , ^{13}C and ^{119}Sn NMR spectroscopy, MS-EESI spectrometry and elemental analysis. The structure of both compounds was determined by X-ray crystallography.

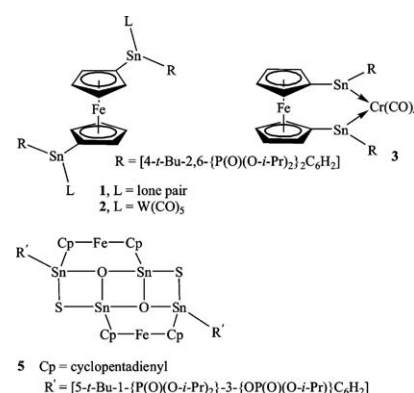


Markus Henn, Markus Schürmann, Bernard Mahieu, Piero Zanello, Arnaldo Cinquantini, Klaus Jurkschat

J. Organomet. Chem. 691 (2006) 1560

A ferrocenyl-bridged intramolecularly coordinated bis(diorganostannylene): Synthesis, molecular structure and reactivity of [4-*t*-Bu-2,6-{P(O)(O-*i*-Pr)} $_2$ C $_6$ H $_2$ Sn} $_2$ C $_3$ H $_4$] $_2$ Fe

The first example of a ferrocenyl-bridged bis(diorganostannylene) (**1**) holds potential as both bis-monodentate and bidentate ligand in transition metal chemistry and reacts with appropriate metal carbonyls to give the complexes **2** and **3**, respectively. Compound **1** reacts in an unprecedented manner with sulphur and atmospheric moisture to give the organotin-oxothio cluster **5**.

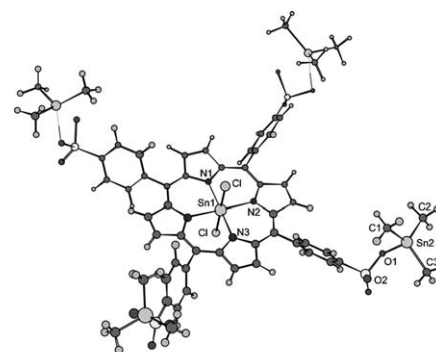


C. Pellerito, M. Scopelliti, T. Fiore, L. Nagy, G. Barone, M. Abbate, G.C. Stocco, L. Pellerito

J. Organomet. Chem. 691 (2006) 1573

Structural investigations on diorgano- and triorganotin(IV) derivatives of [meso-tetra(4-sulfonatophenyl)porphine] metal chlorides

New complexes of organotin(IV)- MCl_n [meso-tetra(4-sulfonatophenyl)porphinate]s, [M = Fe(III), Mn(III), Sn(IV)] have been synthesized and their solid state and solution configuration investigated. DFT calculations allowed to support the proposed structural hypotheses and to obtain detailed geometrical information of the tin environment in the investigated compounds.



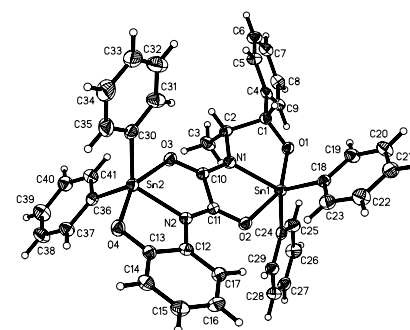
Optimized structure of the monomeric $(\text{Me}_3\text{Sn})_2\text{SnCl}_2$ [meso-tetra(4-sulfonatophenyl)-porphinate] complex

Víctor M. Jiménez-Pérez, Henrich Nöth, Armando Ariza-Castolo, Angelina Flores-Parra, Rosalinda Contreras

J. Organomet. Chem. 691 (2006) 1584

Optically active pentacyclic binuclear diorganotin compounds

Three new optically active compounds bearing two penta-coordinated (tbp) tin atoms in a planar pentacyclic system were prepared from an oxalamide. Two of them were submitted to a NMR detailed study in order to assign their ^1H , ^{13}C and ^{119}Sn data. The X-ray analysis of one compound showed a rigid framework with 12 intramolecular hydrogen bonds.

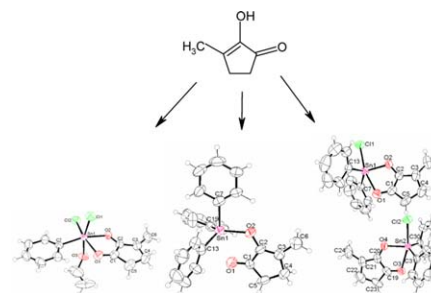


**Carlos Camacho-Camacho,
Victor M. Jiménez-Pérez,
Juan Carlos Galvez-Ruiz,
Angelina Flores-Parra, Rosalinda Contreras**

J. Organomet. Chem. 691 (2006) 1590

Berry exchange coordinate geometry in 3-methyl-2-hydroxycyclopenten-1-one tin esters

Three new penta- and hexa-coordinated tin compounds were prepared from PhSnCl_3 , Ph_2SnCl_2 and Ph_3SnOH and 3-methyl-2-hydroxy-2-cyclo-penten-1-one (**L**). $\text{PhSnCl}_2\text{L} \cdot \text{EtOH}$ has an hexacoordinated tin atom, with an octahedral distorted geometry, which is a stereogenic center. Ph_2SnClL and Ph_3SnL have pentacoordinated tin atoms and present "Berry exchange coordinate" geometry.

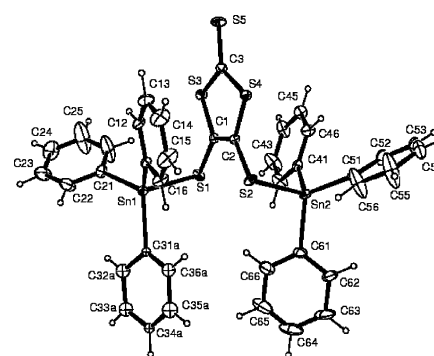


**Jairo Bordinhão, Nadia M. Comerlato,
Glauco B. Ferreira, R. Alan Howie,
Carolina X.A. da Silva, James L. Wardell**

J. Organomet. Chem. 691 (2006) 1598

4,5-Bis[(triorganotin)thiolato]-1,3-dithiole-2-thione, $(\text{R}_3\text{Sn})_2(\text{dmit})$, 4,5-bis[(triorganotin)thiolato]-1,3-dithiole-2-one, $(\text{R}_3\text{Sn})_2(\text{dmio})$, compounds: Crystal structures of (cyclohexyl₃Sn)₂(dmio), $(\text{Ph}_3\text{Sn})_2(\text{dmit})$ and $(\text{Ph}_3\text{Sn})_2(\text{dmio})$

The synthesis and crystal structures are reported of $(\text{Ph}_3\text{Sn})_2(\text{dmit})$ (**1**: dmit = 1,3-dithiole-2-thione-4,5-dithiolate) and, $(\text{R}_3\text{Sn})_2(\text{dmio})$ (**2**: dmio = 1,3-dithiole-2-one-4,5-dithiolate; R = Ph or Cy). The tin centres in all three molecules are 4-coordinate. Weak intermolecular H-bonding interactions are found in **1** [C–H...π] and in **2** [C–H...π and C–H...O].

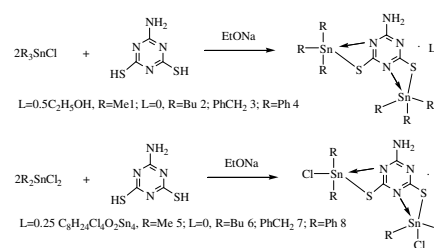


**Chunlin Ma, Yongxin Li, Rufen Zhang,
Daqi Wang**

J. Organomet. Chem. 691 (2006) 1606

Syntheses, characterization and crystal structures of di- and triorganotin (IV) derivatives with 6-amino-1,3,5-triazine-2,4-dithiol

A series of organotin (IV) complexes with 6-amino-1,3,5-triazine-2,4-dithiol of the type $[(\text{R}_n\text{SnCl}_{4-n})_2(\text{C}_3\text{H}_2\text{N}_4\text{S}_2)]$ ($n = 3$: R = Me **1**, *n*-Bu **2**, PhCH₂ **3**, Ph **4**; $n = 2$: R = Me **5**, *n*-Bu **6**, PhCH₂ **7**, Ph **8**) have been synthesized. All the complexes **1–8** have been characterized by elemental analysis, IR, ¹H and ¹³C NMR spectra. Among them complexes **1**, **4**, **5** and **8** have also been characterized by X-ray crystallography diffraction analyses, which revealed that the tin atoms of complexes **1**, **4**, **5** and **8** are all five-coordinated with distorted trigonal bipyramid geometries.

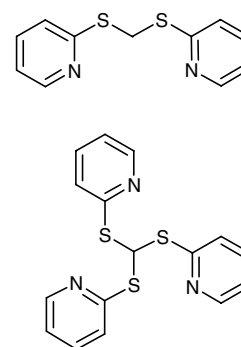


**Maura Pellei, Giancarlo Gioia Lobbia,
Marilena Mancini, Riccardo Spagna,
Carlo Santini**

J. Organomet. Chem. 691 (2006) 1615

Synthesis and characterization of new organotin(IV) complexes with polyfunctional ligands

New mono-, di- and tri-organotin(IV) derivatives containing the neutral bis(2-pyridylthio)methane ligands have been synthesized from reaction with $\text{SnR}_n\text{Cl}_{4-n}$ (R = Me, ^tBu, Ph and Cy, $n = 1-3$) acceptors. Mono-nuclear adducts of the type $\{[(\text{pyS})_2\text{CH}_2]\text{R}_n\text{SnCl}_{4-n}\}$ and $\{[(\text{pyS})_3\text{CH}]\text{R}_n\text{SnCl}_{4-n}\}$ have been obtained and characterized by elemental analyses, FT-IR, ESI-MS and multinuclear (¹H and ¹¹⁹Sn) NMR spectral data.

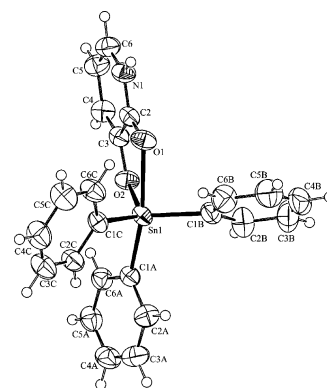


**Attila Szorcik, László Nagy,
Michelangelo Scopelliti, Andrea Deák,
Lorenzo Pellerito, Gábor Galbács,
Mónika Hered**

J. Organomet. Chem. 691 (2006) 1622

Preparation and structural characterization of $[\text{Ph}_3\text{Sn}(\text{IV})]^+$ complexes with pyridine-carboxylic acids or hydroxypyridine, -pyrimidine and -quinoline

A number of $\text{Ph}_3\text{Sn}(\text{IV})^+$ complexes were obtained with ligands containing $-\text{OH}$ or $-\text{COOH}$ group(s) and aromatic $\{\text{N}\}$ donor atom. The coordination sites of the ligands were determined by FT-IR spectroscopic measurements. The experimental ^{119}Sn Mössbauer nuclear quadrupole splittings – according to the point charge model formalism – support the formation of Tbp or O_h molecular structures. The triphenyltin(IV)-3-phenolato-2(1*H*)-pyridinone-*O,O'* complex was obtained as single crystals. The X-ray diffraction studies revealed that the central $\{\text{Sn}\}$ atom is in Tbp environment.

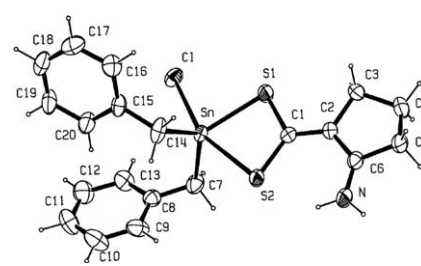


**Abbas Tarassoli, Ashrafolmolouk Asadi,
Peter B. Hitchcock**

J. Organomet. Chem. 691 (2006) 1631

Synthesis and crystal structures of new complexes of di- and tribenzyltin 2-amino-1-cyclopentene-1-carbodithioates

Treatment of dibenzyltin dichloride with 1 equiv. of 2-amino-1-cyclopentene-1-carbodithioic acid (ACDA) gave $\text{Bz}_2\text{SnCl}(\text{ACDA})$ **1**. Reaction of two equivalents of ammonium 2-amino-1-cyclopentene-1-carbodithioic acid (AACD) with Bz_2SnCl_2 and then recrystallization from THF produced $\text{Bz}_2\text{Sn}(\text{ACDA})_2 \cdot \text{THF}$ **2**. $\text{Bz}_3\text{Sn}(\text{ACDA})$ (**3**) was obtained from reaction of Bz_3SnCl with 1 equiv. of AACD. The products were characterized by IR and NMR (^1H , ^{13}C , ^{119}Sn) spectroscopy, elemental analysis and X-ray crystallography.

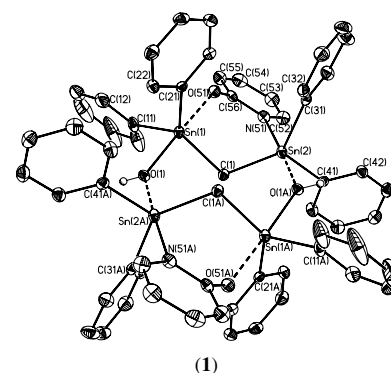


**Sotiris K. Hadjikakou, Klaus Jurkschat,
Markus Schürmann**

J. Organomet. Chem. 691 (2006) 1637

Novel organotin(IV) compounds derived from bis(organostannyl)methanes: Synthesis and crystal structures of bis[diphenyl(pyridin-2-onato)stannyl]methane and bis[bromophenyl(pyrimidine-2-thionato)stannyl]methane $\cdot \text{C}_7\text{H}_8$

Reaction between bis(chlorodiphenylstanyl)methane and the sodium salt of 2-hydroxypyridine (pyONa) provides the organotin hydroxide derivative $[\text{Ph}_2(\text{pyO})\text{SnCH}_2\text{Sn}(\text{OH})\text{Ph}_2]$ (**1**), while reaction of bis(dibromophenylstanyl)methane with the sodium salt of pyrimidine-2-thione (pmtNa) gives the organotin thiolate derivative, $[\text{BrPh}(\text{pmt})\text{Sn}]_2\text{CH}_2 \cdot \text{C}_7\text{H}_8$ (**2**). Compound (**1**) is a centrosymmetric head-to-tail dimer with almost symmetrical $\text{Sn}(1)-\text{O}(\text{H})-\text{Sn}(2\text{A})$ bridges.

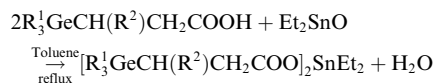


**Imtiaz-ud-Din, M. Mazhar, K.C. Molloy,
Khalid M. Khan**

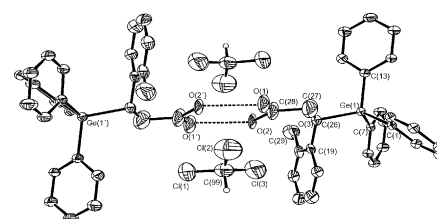
J. Organomet. Chem. 691 (2006) 1643

Synthesis, structural characterization of some germanium substituted chiral diethyltin derivatives

Five new chiral germanium substituted diethyltin dicarboxylates have been synthesized and characterized by multinuclear (^1H , ^{13}C , ^{119}Sn) NMR, $^{119\text{m}}\text{Sn}$ Mössbauer and IR spectroscopy.



The X-ray structure of the precursor **1**₄ clearly depicts chiral center in the carboxylate portion of the compound which was further confirmed by the measurement of rotation angle.

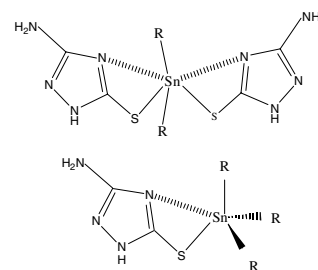


**Mala Nath, Sulaxna, Xueqing Song,
George Eng**

J. Organomet. Chem. 691 (2006) 1649

Organotin(IV) triazolates: Synthesis and their spectral characterization

The synthesis and spectral characterization of some organotin(IV) triazolates of general formula $R_nSn(L)_{4-n}$ (where R = Me, *n*-Bu, Oct and Ph for $n = 2$; R = Me, *n*-Pr and *n*-Bu for $n = 3$ and HL = 3-amino-5-mercapto-1,2,4-triazole) are reported.



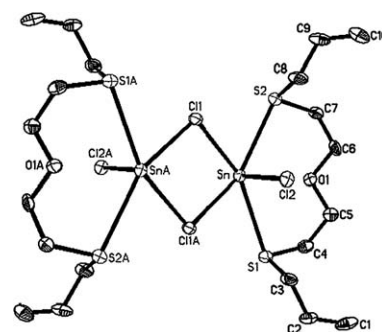
Notes

A.R. Hutchison, D.A. Atwood

J. Organomet. Chem. 691 (2006) 1658

A novel tin (II) dithioether complex

A novel and relatively stable complex resulted from the reaction of tin (II) chloride with a dithioether diallyl ether ligand created as a side product from other research in our lab. Herein we report the structure and ^{119}Sn NMR of this compound.



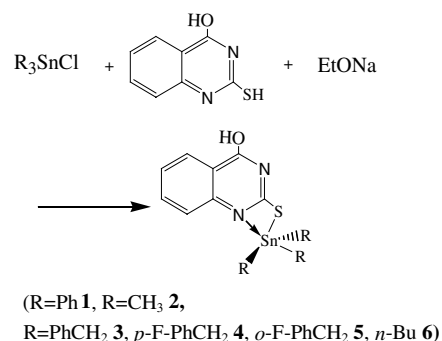
Yang Shi, Chunlin Ma, Rufen Zhang

J. Organomet. Chem. 691 (2006) 1661

Syntheses, characterizations and crystal structures of triorganotin(IV) derivatives with 2-mercapto-4-quinazolinone

The triorganotin(IV) derivatives of 2-mercapto-4-quinazolinone (HSqualone) of the type, R_3SnL (R = Ph **1**, CH_3 **2**, $PhCH_2$ **3**, *p*-F- $PhCH_2$ **4**, *o*-F- $PhCH_2$ **5**, *n*-Bu **6**), were obtained by the reaction of the R_3SnCl and HSqualone with 1:1 molar ratio in benzene.

All complexes **1–6** were characterized by elemental analyses, IR, 1H and ^{13}C NMR spectroscopy and the crystal structures of complexes **1–3** were also confirmed by X-ray crystallography. The structure analyses reveal that the tin atoms of complexes **1–3** are all distorted tetrahedral geometries. Furthermore, the dimeric structures in complexes **1–3** have also been found linked by intermolecular O–H···N or N–H···O hydrogen bonding interaction. Interestingly, the dimers of complexes **2** and **3** are further linked into one-dimensional chain through intermolecular C–H···S and C–H···O weak hydrogen bonding interactions, respectively.



New organotin-based materials: coordination polymers, dendrimers

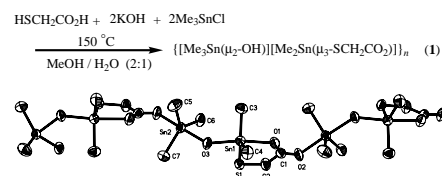
Communication

**Rufen Zhang, Qingfu Zhang, Yang Shi,
Chunlin Ma**

J. Organomet. Chem. 691 (2006) 1668

Solvothermal synthesis and crystal structure of a mixed tri- and dimethyltin coordination polymer, $\{[(Me_3Sn)(\mu_2-OH)][Me_2Sn(\mu_3-SCH_2CO_2)]\}_n$

A mixed tri- and dimethyltin coordination polymer, $\{[(Me_3Sn)(\mu_2-OH)][Me_2Sn(\mu_3-SCH_2CO_2)]\}_n$ (**1**), has been solvothermally synthesized and structurally characterized by elemental analysis, FT-IR, NMR (1H , ^{13}C , ^{119}Sn) spectra and X-ray crystallography. This complex displays a 1D helical chain structure, in which it can be considered as the tri- and dimethyltin moieties are linked together by the alternate μ_2-OH groups and $[\mu_3-SCH_2CO_2]^{2-}$ units.



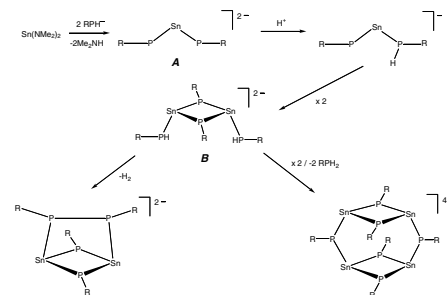
Review

**Felipe García, Matthew L. Stead,
Dominic S. Wright**

J. Organomet. Chem. 691 (2006) 1673

Adventures in Tin(II) phosphinidene chemistry; insights into the mechanism of P–P and Sn–Sn bond formation

Structural studies of the products of the reactions of the Sn(II) dimethylamido reagent Sn(NMe₂)₂ with alkali metal primary phosphides [RPHM], containing a range of R-groups and alkali metals (M), cast light on the mechanisms involved in the formation of P–P and Sn–Sn bonds.



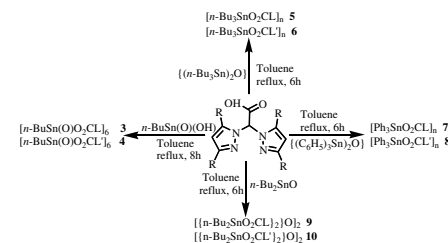
Regular papers

**Vadapalli Chandrasekhar,
Pakkirisamy Thilagar, Palani Sasikumar**

J. Organomet. Chem. 691 (2006) 1681

Multi-site coordination ligands assembled on organostannoxane supports

The reactions of bis(pyrazol-1-yl) acetic acid LCOOH (**1**) (L = (Pz)₂CH–) and bis(3,5-dimethylpyrazol-1-yl)acetic acid L'COOH (**2**) (L = (3,5-Me₂Pz)₂CH–) with organotin oxide (hydroxide) precursors, *n*-BuSn(O)(OH), *n*-Bu₂SnO, (*n*-Bu₃Sn)₂O and (Ph₃Sn)₂O has led to the isolation of several organostannoxanes which are decorated in their periphery by the bispyrazolyl unit(s).

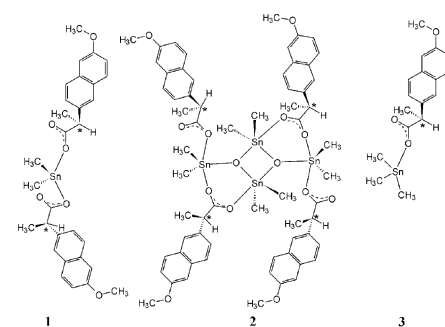


Andrea Deák, Gábor Tárkányi

J. Organomet. Chem. 691 (2006) 1693

Chiral self-assembly of methyltin(IV)-naproxenates: Combining dative Sn–O bonds, secondary Sn···O interactions and C–H···O hydrogen bonding to make an inter-helical meander-shaped network and a cross-linked Z-shaped ribbon

New chiral organotin(IV) carboxylates, Me₂Sn(nap)₂ (**1**), {[Me₂Sn(nap)]₂O}₂ (**2**) and Me₃Sn(nap) (**3**) (nap = (*S*)-(+)-6-methoxy- α -methyl-2-naphthaleneaceto anion) have been synthesized. All of them have been characterized by elemental analysis, multinuclear (¹H, ¹³C and ¹¹⁹Sn) NMR and IR spectroscopy. The crystal structures of **1** and **2** have been determined by X-ray diffraction analysis.

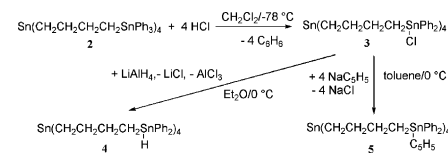


**Herbert Schumann, Yilmaz Aksu,
Birgit C. Wassermann**

J. Organomet. Chem. 691 (2006) 1703

Synthesis and characterization of some organo-all-tin dendrimers with different peripheral substituents

The first all-tin-dendrimer Sn[(CH₂)₄SnPh₃]₄ is prepared by complete hydrostannation of tetra(but-3-enyl)stannane with Ph₃SnH. Selective cleavage of one phenyl group from each dendron with HCl yields Sn[(CH₂)₄Sn(Cl)Ph₂]₄ which is the starting compound for the synthesis of Sn[(CH₂)₄Sn(X)Ph₂]₄ (X = H, C₅H₅, Co(CO)₄, Fe(CO)₂C₅H₅, Mn(CO)₅).

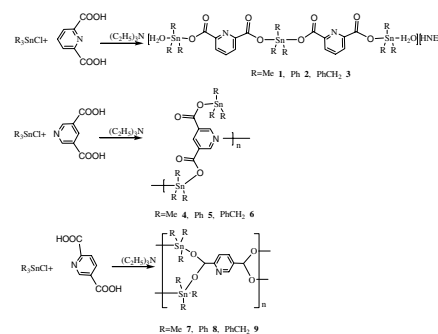


**Chunlin Ma, Jikun Li, Rufen Zhang,
Daqi Wang**

J. Organomet. Chem. 691 (2006) 1713

Syntheses and characterization of triorganotin complexes: X-ray crystallographic study of triorganotin pyridinedicarboxylates with trinuclear, 1D polymeric chain and 2D network structures

Nine triorganotin(IV) pyridinedicarboxylates $[(C_2H_5)_3NH][(Me_3Sn)_3(2,6-pdc)_2(H_2O)_2]$ (**1**), $[(C_2H_5)_3NH][(Ph_3Sn)_3(2,6-pdc)_2(H_2O)_2]$ (**2**), $[(C_2H_5)_3NH]\{[(PhCH_2)_3Sn]_3(2,6-pdc)_2(H_2O)_2\}$ (**3**), $[Me_3Sn(3,5-pdc)]_n$ (**4**), $[Ph_3Sn(3,5-pdc)]_n$ (**5**), $[(PhCH_2)_3Sn(3,5-pdc)]_n$ (**6**), $[(Me_3Sn)_2(2,5-pdc)]_n$ (**7**), $[(Ph_3Sn)_2(2,5-pdc)]_n$ (**8**) and $\{[(PhCH_2)_3Sn]_2(2,5-pdc)\}_n$ (**9**) were synthesized and characterized by elemental, IR, 1H , ^{13}C and ^{119}Sn NMR analyses. Complexes **1**, **5** and **7** have also been characterized by X-ray crystallographic diffraction analyses.

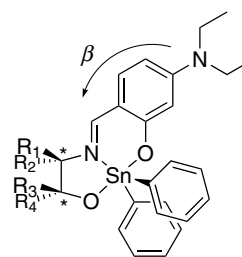


**Jose Maria Rivera, David Guzmán,
Mario Rodriguez, Jean François Lamère,
Keitaro Nakatani, Rosa Santillan,
Pascal G. Lacroix, Norberto Farfán**

J. Organomet. Chem. 691 (2006) 1722

Synthesis, characterization and nonlinear optical properties in a series of new chiral organotin(IV) Schiff base complexes

The molecular and solid state nonlinear optical properties of chiral organotin derivatives are reported. One of them exhibits an efficiency 11 times that of urea in second harmonic generation.



Biological and pharmaceutical aspects of organotin compounds

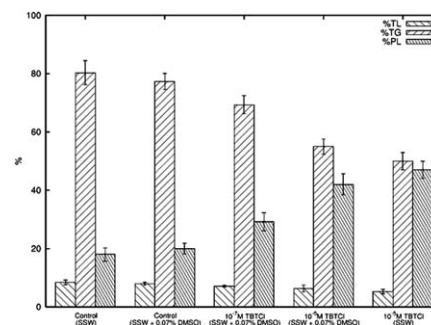
Reviews

**Claudia Pellerito, László Nagy,
Lorenzo Pellerito, Attila Szorcsik**

J. Organomet. Chem. 691 (2006) 1733

Biological activity studies on organotin(IV) $^{n+}$ complexes and parent compounds

Reduction of total lipids (TL) and significant variations of triglyceride (TG) and phospholipids (PL) were observed as a consequence of exposure of *Ciona intestinalis* ovaries to TBTCI solutions. In particular, TG decreased and PL increased, which augmented the membrane fluidity and, as a consequence, PL.

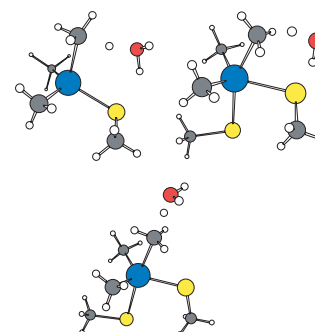


**Bethany A. Buck-Koehntop, Fernando Porcelli,
John L. Lewin, Christopher J. Cramer,
Gianluigi Veglia**

J. Organomet. Chem. 691 (2006) 1748

Biological chemistry of organotin compounds: Interactions and dealkylation by dithiols

Hydrolytic proteolysis of organotin model compounds.

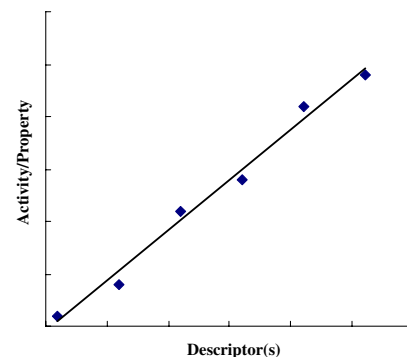


Xueqing Song, Alejandra Zapata, George Eng

J. Organomet. Chem. 691 (2006) 1756

Organotins and quantitative-structure activity/property relationships

A review of the literature pertaining to quantitative-structure activity/property relationships (QSAR/QSPR) and organotin chemistry is given. The QSAR/QSPR studies ranges from predicting biotoxicity to estimating chromatographic parameters.

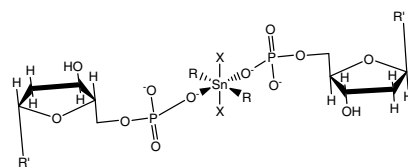


Sartaj Tabassum, Claudio Pettinari

J. Organomet. Chem. 691 (2006) 1761

Chemical and biotechnological developments in organotin cancer chemotherapy

A brief report on organotin cancer chemotherapy (in vivo and in vitro), with particular emphasis to the gene mediated mechanistic pathway of drug interactions and molecular biology.

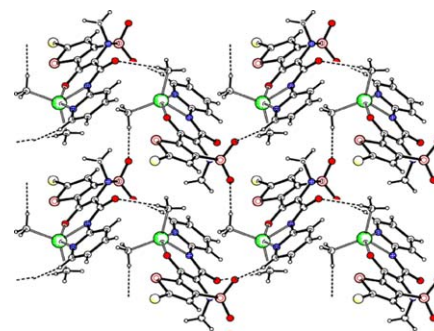


Dimitra Kovala-Demertzi

J. Organomet. Chem. 691 (2006) 1767

Recent advances on non-steroidal anti-inflammatory drugs, NSAIDs: Organotin complexes of NSAIDs

An overview is given of the results of organotin-NSAIDs interactions. Several organotin complexes with NSAIDs, derivatives of the carboxylic acid family and oxamic family, have been synthesized and characterized by spectroscopy and X-ray crystallography at the University of Ioannina. Results concerning the biological activity of these organotin complexes will be referred.



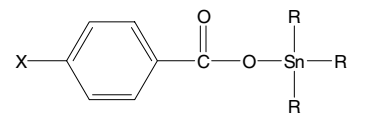
Regular papers

Quyen Duong, Xueqing Song, Edlira Mitrojorgji, Scott Gordon, George Eng

J. Organomet. Chem. 691 (2006) 1775

Larvicidal and structural studies of some triphenyl- and tricyclohexyltin *para*-substituted benzoates

Several triphenyltin- and tricyclohexyltin *para*-substituted benzoates were synthesized and the larvicidal activities of the compounds were evaluated against the 2nd larval instar of the *Anopheles stephensi* and *Aedes aegypti* mosquitoes. Results from the screening studies indicated that the triphenyltin benzoates were more toxic towards the *Ae. aegypti* larvae. A quantitative structure activity relationship was also developed for the *An. stephensi*.



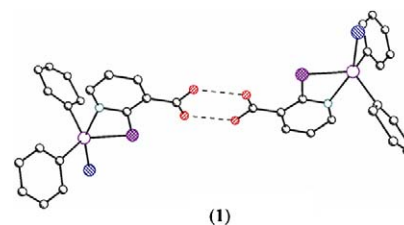
X = Pheny, *cyclo*-hexyl
X = H, CH₃, F, Cl, Br, I, OH, NH₂, NO₂, C(CH₃)₃

Marianna N. Xanthopoulou, Sotiris K. Hadjikakou, Nick Hadjiliadis, Maciej Kubicki, Spyros Karkabounas, Konstantinos Charalabopoulos, Nikolaos Kourkouvelis, Thomas Bakas

J. Organomet. Chem. 691 (2006) 1780

Synthesis and characterization of a new chloro-diphenyltin(IV) complex with 2-mercapto-nicotinic acid: Study of its influence upon the catalytic oxidation of linoleic acid to hydroperoxylinoic acid by the enzyme lipoxygenase

The complex $[(C_6H_5)_2SnCl(HMNA)]$ (**1**) ($H_2MNA = 2$ -mercapto-nicotinic acid) has been synthesized and characterized by e.a., FT-IR and Mössbauer spectroscopic techniques and X-ray crystallography. The influence of the complex $[(C_6H_5)_2SnCl(HMNA)]$ (**1**) upon the catalytic peroxidation of linoleic acid to hydroperoxylinoic acid by the enzyme lipoxygenase (LOX) was also kinetically and theoretically studied.

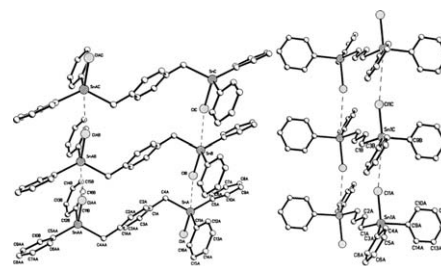


Srawan K. Thodupunoori, Israel A. Alamudun, Francisco Cervantes-Lee, Fabiola D. Gomez, Yazmin P. Carrasco, Keith H. Pannell

J. Organomet. Chem. 691 (2006) 1790

Synthesis, structures and preliminary biological screening of bis(diphenyl)chlorotin complexes and adducts: $Ph_2ClSn-CH_2-R-CH_2-SnClPh_2$, $R = p-C_6H_4$, CH_2CH_2

Two bis-(chlorodiphenyltin) compounds with bridging butyl and 1,4-xylyl are reported and characterized exhibiting ladder structures in the solid state. Antibiotic activity against *Staphylococcus aureus*, *Escherichia coli* and *Photobacterium phosphoreum* is reported.

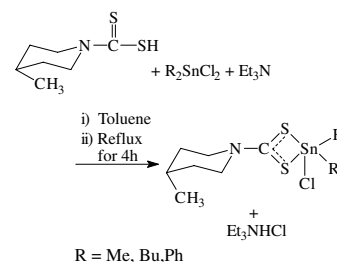


Saira Shahzadi, Saqib Ali, Moazzam H. Bhatti, Mohammad Fettouhi, Muhammad Athar

J. Organomet. Chem. 691 (2006) 1797

Chloro-diorganotin(IV) complexes of 4-methyl-1-piperidine carbodithioic acid: Synthesis, X-ray crystal structures, spectral properties and antimicrobial studies

The synthesis of three new chlorodiorganotin(IV) complexes of 4-methyl-1-piperidine carbodithioic acid is reported. Their structural study was carried out by different spectroscopic methods and by single-crystal X-ray diffractometry for **1** and **3**. The antimicrobial activity of the compounds is also reported.



Muhammad Ashfaq

J. Organomet. Chem. 691 (2006) 1803

Synthesis of novel bioactive phthalimido-4-methyl pentanoateorganotin(IV) esters with spectroscopic investigation

The phthalimido-4-methylpentanoic acid (PMPA) was synthesized and used as ligand for synthesis of bioactive monomer, dimer, tricyclohexyl- and triphenyl-tin(IV) complexes.

The various spectroscopic techniques such as 1H -, ^{13}C -, ^{119}Sn -NMR, FT IR, CHN analyzer, and ^{119m}Sn Mössbauer with literature evidences were employed to evaluate their geometry. They were screened out through in vitro ED_{50} , anti-tumor (phytotoxic), anti-yeast, blood pressure and heart rate effect, and bactericidal, fungicidal as well as analgesic bioassays. The ligand (PMPA) was found to have excellent analgesic effect while the dimer exhibit strong biocidal and excellent anti-tumor behavior besides of triorganotin(IV) complexes.

