

[Z]-2-(芳基锡基)-1-(9-芴醇)乙烯的合成、结构与性质

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摘要 用三苯基氢化锡,三对甲苯基氢化锡作为锡氢化试剂与9-乙炔基-9-芴醇进行反应,合成了2个有机锡化合物:

[Z]-2-(三苯基锡基)-1-(9-芴醇)乙烯(1)和[Z]-2-(三对甲苯基锡基)-1-(9-芴醇)乙烯(2)。化合物1和2分别与 ICl , Br_2 , I_2 反应,得到6个有机锡一卤化物,6个有机锡二卤化物和2个有机锡混合卤化物(3-16)。有机锡一碘化物7,13和有机锡二碘化物8,14与 KOH 乙醇溶液反应,分别得到相应的有机锡氢氧化物17,18和有机锡氧化物19,20。有机锡二碘化物8,14分别与含氮双齿配体1,10-邻菲罗啉(Phen),2,2'-联吡啶(Bipy),8-羟基喹啉(Oxin)反应,得到6个相应的配合物21-26。26个新化合物通过元素分析,锡含量测定,IR, ^1H NMR测定对其结构进行了表征。同时测定了化合物2的晶体结构,晶体属单斜晶系,空间群 $\text{P}2_1/c$ 。化合物2是以Sn原子为中心扭曲的四面体构型。

关键词 [有机锡化合物](#) [锡络合物](#) [芴醇P](#) [晶体结构](#) [红外分光光度法](#) [质子磁共振谱法](#) [二氮杂菲P](#) [联吡啶P](#) [喹啉P](#)

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Synthesis and properties of [Z]-2-(arylstannyl)-1-(9-hydroxy-9-fluorenyl) ethylene

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Abstract The (Z)-2-(triarylstannyl)-1-(9-hydroxy-9-fluorenyl) ethylene [aryl=phenyl(1), Aryl=p-tolyl(2)] were synthesized by reactions of 9- ethynyl-9-fluorenyl and triaryltin hydride in diethyl ether. Six mono- halogenated organotin, six di-halogenated organotin and two mixture- halogenated organotin compounds were formed by the reaction of 1 and 2 with ICl , Br_2 and I_2 . Two organotin hydroxides and two oxides were prepared by the reaction of organotin iodide 7, 13 and diiodide 8, 14 with KOH in ethanol. Six complexes were obtained by the reaction of 1, 10-phenanthroline (L^1), 2, 2'-bipyridyl (L^2), 8-hydroxyquinoline (L^3) and [Z]-2-(aryldiiodidestannyl)-1-(9-hydroxy-9-fluorenyl) ethylene. The twenty-six new compounds were characterized by the means of elemental analysis, IR and ^1H NMR spectroscopy. The compound 2 was determined by X-ray diffraction analysis. The crystal belongs to monoclinic space group $\text{P}2_1/c$. The tin atom in the structure is in a distorted tetrahedral coordination environment.

Key words [ORGANO TIN COMPOUNDS](#) [TIN COMPLEX](#) [CRYSTAL STRUCTURE](#) [INFRARED SPECTROPHOTOMETRY](#) [PROTON MAGNETIC RESONANCE SPECTROMETRY](#) [PHENANTHROLINE P](#) [BIPYRIDINE P](#) [QUINOLINE P](#)

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