

CHAPTER IV

CONCLUSION

Redistribution reaction of tetrakis-(4-dimethylamino-phenyl)stannane and stannic chloride was carried out at room temperature and yield a series of dimethylaminophenylstannane chlorides. Since such organotin chlorides were sensitive to the moisture, therefore, the compounds have not been isolated but rather quenched the mixture with stoichiometric quantities of propanethiol and a base. In addition, 2-mercaptobenzothiazol was used instead of propanethiol, but the quenching did not work. The following organotin compounds containing amino groups were easily prepared in the various mole ratios of the reactants: bis-(4-dimethylaminophenyl)stannane dipropylsulfide (1:1), tris-(4-dimethylaminophenyl)stannane propylsulfide (3:1), 4-dimethylaminophenylstannane tripropylsulfide (1:3). The observations by NMR and MS were in accordance with the compounds proposed above.

Preparation of mixed organotin chlorides containing amino groups by the redistribution reaction of tetrakis-(4-dimethylaminophenyl)stannane and butyltin trichloride was studied in the same manner as the reaction above. The NMR examination showed the structure of the mixture products. Thus, the reaction mixtures in the various mole ratios were monitored with GC and it indicated that the expected compounds were presented by

comparison with the retention times with those compound (2), (3) and (4). It showed that the expected products were obtained.

Tributyl-2-pyridylstannane , an unknown compound, was synthesized by metal-exchange reaction of 2-bromopyridine and butyllithium to give 2-bromopyridyllithium and quenched with butyltin trichloride in quite good yield. Tributyl-2-pyridylstannane was used to study redistribution with stannic chloride. The reaction was proceeded in the similar procedure as above in 1:1 mole ratio of the reactants at room temperature and 0-5 °C. The expected products were not obtained by this reaction condition.

Further study

1. Redistribution reaction of tetrakis-(4-dimethylamino phenyl)stannane with butyltin trichloride

2. Redistribution reaction of tetrakis-(4-dimethylamino phenyl)stannane with tributyltin chloride

Both reactions should be followed with GC/MS and GC/HRMS or 500 MHz NMR.