Synthesis of Functionalized Diaryldimethylstannanes from the $\text{Me}_2\text{Sn}^{2-}$ Dianion by $\text{S}_{\text{RN}}1$ Reactions

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Supporting Information

Contents

1. Experimental section

1.1 General Methods	S2
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2. ^1H NMR and ^{13}C NMR Spectra for Stannanes Compounds

2.1 Product 3 ^1H NMR	S3
2.2 Product 3 ^{13}C NMR	S3
2.3 Product 5a ^1H NMR	S4
2.4 Product 5a ^{13}C NMR	S4
2.5 Product 5b ^1H NMR	S5
2.6 Product 5b ^{13}C NMR	S5
2.7 Product 5c ^1H NMR	S6
2.8 Product 5c ^{13}C NMR	S6
2.9 Product 7 ^1H NMR	S7
2.10 Product 7 ^{13}C NMR	S7

3. References	S8
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1. Experimental Section

1.1 General Methods. Gas chromatographic analyses were performed on a Hewlett-Packard instrument with a flame ionization detector, a Hewlett-Packard integrator, with one of the following columns: HP1 5 m x 0.53 mm column, and a DB-1, 30 m x 0.17 mm column. ^1H NMR (200.13 MHz) and ^{13}C NMR (60 MHz) were conducted on a 200 spectrometer in CDCl_3 as solvent. GC/MS analyses were carried out on a Shimadzu GC/MS spectrometer equipped with a DB-5, 30 m x 0.18 mm ID column. Irradiation was conducted in a reactor equipped with two 400-W UV lamps emitting maximally at 390 nm (water-refrigerated).

Me_2SnBr_2 , Me_2SnCl_2 , $\text{Cu}(\text{NO}_3)_2 \cdot 2.5\text{H}_2\text{O}$ and the chloroarenes: *p*-chloroanisole, *p*-chlorotoluene, *p*-chlorobenzonitrile, 1-chloronaphthalene and 3-chlorobenzoic acid, were commercially available and used as received. All solvents were analytical grade and distilled before used. The phenyl(*p*-methoxyphenyl)dimethylstannane (**12**) was synthesized as previously described in the literature.¹

1. ^1H NMR and ^{13}C NMR Spectra for Stannanes Compounds

1.1 Product 3 ^1H NMR

1.2 Product 3 ^{13}C NMR

1.3 Product **5a** ¹H NMR

1.4 Product **5a** ¹³C NMR

1.5 Product **5b** ^1H NMR

1.6 Product **5b** ^{13}C NMR

1.7 Product **5c** ^1H NMR

1.8 Product **5c** ^{13}C NMR

1.9 Product 7 ^1H NMR

1.10 Product 7 ^{13}C NMR

References

- (1) Yammal, C. C.; Podesta, J. C.; Rossi, R. A. *J. Organomet. Chem.* **1996**, 509, 1-8.