

General : All experiments were always protected from exposure to light and oxygen. Workup procedures were done in air. Tetrahydrofuran (THF) used was distilled from sodium benzophenone ketyl under dry nitrogen. ^1H - and ^{13}C -NMR spectra were obtained with Bruker 200 and ARX 400 spectrometers. Infrared spectra were recorded with Perkin-Elmer 1420 spectrometer. Tricarbonyl(*p*-xylene)chromium complex and tricarbonyl(butylbenzene) chromium complex show the same analytical data as those reported in the literature.¹⁻³

Coupling reaction using hexa-*n*butylditin, general procedure : The tricarbonyl chlorobenzenechromium complex (0.248 g, 1 mmol), $\text{Pd}_2(\text{dba})_3$ (0.046 g, 0.05 mmol) and AsPh_3 (0.061 g, 0.2 mmol) were placed under inert atmosphere and dried in vacuo for 30 min. $(\text{Bu}_3\text{Sn})_2$ (0.505 ml, 1 mmol) and anhydrous THF (10 ml) were then added and the mixture was immediately heated to reflux for 3h. After cooling to room temperature, the suspension was filtered and the solvents were removed under reduced pressure. The residue was chromatographed on silical gel (petroleum ether / diethyl ether : 9/1) to offer a yellow solid in 81% yield.

Tricarbonyl-4-methyl-butylbenzene chromium complex **3b** :

– IR (CH_2Cl_2) : 1884 cm^{-1} ($\text{Cr}(\text{CO})_3$), 1966 cm^{-1} . ($\text{Cr}(\text{CO})_3$ – ^1H NMR (CDCl_3) : $\delta = 0.94$ (t, $J = 7.3\text{ Hz}$, 3H, $\text{CH}_2\text{-CH}_3$), 1.39 (m, 2H, $\text{CH}_2\text{-CH}_3$), 1.54 (m, 2H, Ar- $\text{CH}_2\text{-CH}_2$), 2.16 (s, 3H, $\text{CH}_3\text{-Ar}$), 2.32 (t, $J = 7.6\text{ Hz}$, 2H, Ar- $\text{CH}_2\text{-CH}_2$), 5.30 (m, 4H, Ar). – ^{13}C NMR (CDCl_3) : $\delta = 13.9$ ($\text{CH}_2\text{-CH}_3$), 20.4 ($\text{CH}_3\text{-Ar}$), 22.3 ($\text{CH}_2\text{-CH}_3$), 33.5 (Ar- $\text{CH}_2\text{-CH}_2$), 34.4 (Ar- $\text{CH}_2\text{-CH}_2$), 94.05 and 94.5 (C-2, C-3), 107.6 and 111.4 (C-1, C-4), 233.9 (CO). Anal. Calcd for $\text{C}_{14}\text{H}_{16}\text{CrO}_3$: C, 59.15; H, 5.67; Cr, 18.29. Found: C, 59.39; H, 5.75; Cr, 18.44.

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2 A. D. Hunter, V. Mozol and S. D. Tsai, *Organometallics*, 1992, **11**, 2251.

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