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STILLE REACTION OF β-NITRO AND β-TOSYL SUBSTITUTED STYRYL BROMIDES

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The palladium-catalyzed coupling of organostannanes with organic electrophiles (Stille reaction) have become an important synthetic tool in organic chemistry. In this work, we have examined the Stille reaction of ß -nitro and ß-tosyl (ß-(p-$MeC_6H_4SO_2$)) substituted styryl bromides. The ß -bromo-ß nitro-styrenes 1 and 2 reacted with a variety of organostannanes using bis(acetonitrile)dichloropalladium(II) as catalyst and N-methyl-pyrrolidinone (NMP) as solvent at room temperature. Good yields of 2-nitro-1,3-dienes were obtained as a mixture of isomers. The Stille reaction of ß-bromo-ß-tosyl-styrenes 3 and 4 was also investigated. In this case, the best yields of coupling products were obtained using an excess of organotin compound (1.5 equivalents), a mixture of bis(acetonitrile)dichloropalladium(II) (5% molar) and copper iodide (10% molar) as catalysts and NMP as solvent at room temperature. Again, good yields of products, as a mixture of isomers, were obtained. The Stille reactions of ß-nitro and ß-tosyl substituted styryl bromides reported here constitute a useful synthetic tool towards the preparation of functionalized 1,3-dienes. These unsaturated molecules are among the most versatile organic compounds which participate in a wide variety of applications, including fine chemicals synthesis and polymer chemistry.

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