

A CONVENIENT PREPARATION OF BIPYRIDINE DERIVATIVES

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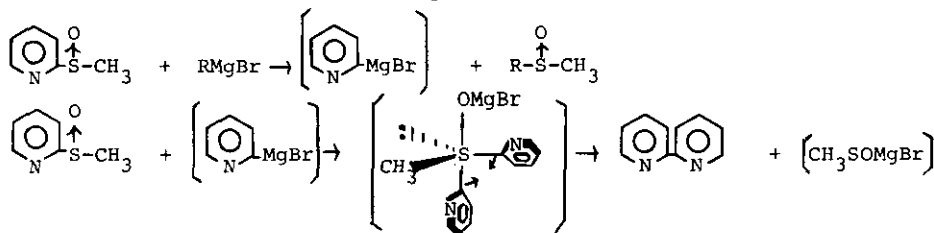
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Recently, we have shown that the reaction of benzyl 2-pyridyl sulfoxide with Grignard reagents or organolithium reagents gives intramolecular ligand coupling products within σ -sulfuranes formed incipiently upon nucleophilic attack of organo-metallic species on the tricoordinate sulfur compounds.

We have found a reaction which involves both the initial ligand exchange and the subsequent ligand coupling between two heteroaryl groups within a σ -sulfurane, namely, the reaction between methyl 2-pyridyl sulfoxide with the Grignard reagents to afford 2,2'-bipyridines in moderate yields, as shown in the following scheme.



Then, we obtained the various substituted 2,2'-bipyridines using ligand coupling reactions, as the following scheme.

