

Abstract

This thesis is divided into two parts. In the first part there is reported palladium-catalysed regioselective direct arylation of benzofurans with arylsulfonyl chlorides as the coupling partner to C2 carbon. The best reaction conditions of this reaction were investigated, then the influence of various arylsulfonyl chloride substituents to the reaction and finally it is reported direct arylation of C2-arylated benzofuran to C3 carbon to give diarylated benzofuran with different aryl substituents.

In the second part, there is reported the synthesis of 2-(hydroxymethyl)-5,7-bis{5-[(2,2':6',2''-terpyridine)-4'-yl]thiophen-2-yl}-2,3-dihydrothieno[3,4-b][1,4]dioxin and modification of its sidechain. As a starting material of the synthesis it was used commercially available 4'-bromo-(2,2':6',2''-terpyridine). The synthetic sub-steps included Suzuki cross-coupling, bromination and C-H bond activation. Then it was also reported the complexation of synthesized oligomer with zinc and iron cations.