Studies Towards The Synthesis of 2,5-Disubstituted-3-Flurothiophenes Using a Tandem Directed Ortho Metallation/Nickel Catalyzed Cross-Coupling Approach

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2,5-Disubstituted 3-fluorothiophene derivatives 1 are of interest as building blocks in liquid crystal materials synthesis. This poster details the development of 2-thienyl carbamates 2 and related compounds as flexible building blocks for the construction of 2,5-disubstituted 3-fluorothiophenes. Our approach involves oxidation of 5-substituted 2-thienyl trifluoroborates to the corresponding thienones 3 followed by O-trapping of the corresponding enolate as the 2-thienyl carbamate 2. Studies aimed at the elaboration of 2 to 2,5-disubstituted 3-fluorothiophenes 1 using a sequential directed ortho-metalation/fluorination/Ni-catalyzed cross-coupling approach will be presented.