

New Synthesis of Pyrrole-2-carboxylic and Pyrrole-2,5-dicarboxylic Acid Esters in the Presence of Iron-Containing Catalysts

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Abstract—Alkyl 1*H*-pyrrole-2-carboxylates and dialkyl 1*H*-pyrrole-2,5-dicarboxylates were synthesized in quantitative yield by reactions of 1*H*-pyrrole, 2-acetyl-1*H*-pyrrole, and 1-methyl-1*H*-pyrrole with carbon tetrachloride and aliphatic alcohols in the presence of iron-containing catalysts. A probable reaction mechanism was proposed, and the rate constants and energies of activation of particular steps were determined on the basis of experimental data.

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