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Synthesis of Alkene-Terminated Acyl Ruthenocene Derivatives

An earlier study was carried out based on the Friedel-Crafts acylation of ferrocene to produce two different terminal alkene derivatives.^{1,2}

This project involved both method development and characterisation.¹ In an extension of this previous study, this project focused on the synthesis and characterisation of alkene-terminated acyl ruthenocene derivatives.

The Friedel-Crafts acylation of ruthenocene was carried out using both 4-pentenoyl chloride and 10-undecenoyl chloride. The alkene-terminated products were purified using previously optimized techniques and characterised via NMR, FT-IR, and UV-Visible spectroscopies. Results of the different NMR experiments, including DEPT, HETCOR, and COSY, will be highlighted. In addition, the FT-IR and UV-Visible Spectroscopy results will be presented.

1. Ferreira, J.; Washington, J.; Ferguson, M. Synthesis of Alkene Terminated Acyl Ferrocene Derivative, Concordia University of Edmonton, CUE Research Forum, 2022.

2. Donahue, C. J.; Donahue, E. R. Beyond Acetylferrocene: The Synthesis and NMR Spectra of a Series of Alkanoyl ferrocene Derivatives. J. Chem. Educ. 2013, 90 (12), 1688-1691.

Research Advisor: Dr. John Washington, Associate Professor