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ELECTROCHEMICAL SYNTHESIS OF BIS(TRIFLUOROMETHYL) ALICYCLIC COMPOUNDS

Roger N. Renaud*, Campbell J. Stephens and Denis Berubé

National Research Council of Canada, Ottawa, Ontario (Canada)

The electrochemical oxidation of trifluoroacetic acid anion in the presence of activated dienes, $\text{ROOCCH}=\text{CH}(\text{CH}_2)_n\text{CH}=\text{CHCOOR}$, gives bis(trifluoromethyl) alicyclic products. The ring size of the products was determined by comparing the fluorine nuclear magnetic resonance spectra of the protonated compounds with the corresponding α,α' -dideuterated analogues. The results can be explained by an intramolecular radical addition and by an intramolecular coupling of a biradical intermediate.

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THE ^{13}C N.M.R. SPECTRA OF SOME POLYFLUOROALICYCLIC COMPOUNDS

C. M. Hu*, W. B. Jennings, M. S. Tolley and P. L. Coe

Department of Chemistry, The University of Birmingham (U.K.)

Wide band ^{19}F decoupled ^{13}C nmr spectra of perfluorocyclopentane, -cyclopentene, -cyclohexane, -cyclohexene, cycloheptane and heptene, monahydroonafluorocyclopentane, monohydrundecafluorocyclohexane, monohydrotridecafluorocycloheptane and related compounds have been obtained. Some J_{CH} and J_{CF} values have been observed.

Also measured were the ^{13}C spectra of perfluorocyclohexa-1,3- and -1,4-dienes perfluoro 1,4 dimethylcyclohexane cis and trans perfluorodecalin, hexadecafluorobicyclo[4,4,0]deca-1(6)-ene and 3H,4H-tetradecafluorobicyclo[4,4,0]deca-1(6)-ene.

The use of ^{19}F decoupled ^{13}C nmr for structural investigation on highly fluorinated alicyclic compounds will be discussed and the influence of structure on the nmr parameters considered.