ELECTROSYNTHESIS OF FLUOROORGANIC COMPOUNDS

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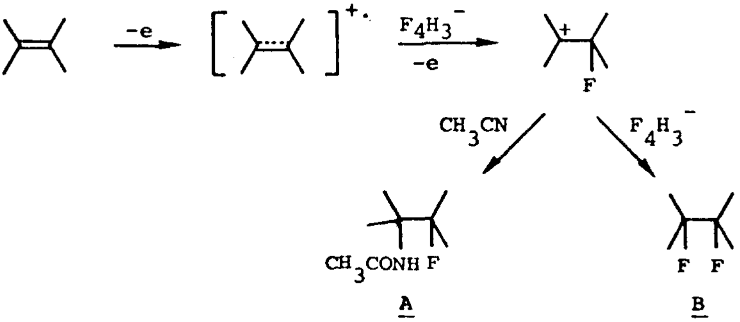
When polymethylbenzenes are electrochemically oxidized in CH_3CN-Et_4NF, 3HF or CH_3CN-pyridine, 10HF side chain monofluorination takes place. Polyalkylbenzylacetamides are formed as by-products.

The first electron transfer gives a radical-cation. The radical-cation having a high positive density on a substituted position are converted to benzyl radicals by loss of a proton and the benzyl radicals are rapidly oxidized to benzyl cations. The reactivity order of anodically generated cations toward fluoride ions and acetonitrile appears to be classical ; the more stable cations are more selective toward fluoride ions.

In order, to obtain only benzyl fluoride ,methyl chloride can be used as solvent.

Ethylenic compounds may also provide cation radicals by electro chemical oxidation and fluoroamidation or difluoration takes place



The halofonctionnalisation of 8 phenyl substituted olefines will be discussed (A/B ratio, stereochemistry,...).