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SYNTHEIS, STRUCTURE AND REACTIVITY OF FLUORINATED α,β-UNSATURATED AND α,β-EPOXY KETONES

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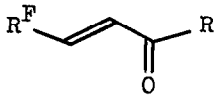
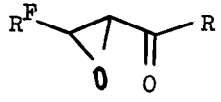
New polyfluorinated α,β-unsaturated ketones (I) have been prepared by a condensation of fluoroalkyl aldehydes with methylketones or fluorinated β-diketones. The heminal arrangement of C-C double bond and fluoroalkyl substituent in (I) is shown to be always formed irrespective of the structure of fluorinated group in the aldehydes and the β-diketones studied. Trans-s-cis form is determined by the methods of vibrational and NMR spectroscopy to be preferred one for (I). Addition of O-, N-, C-nucleophilic species is directed to the β-carbon atom of (I), saturated β-substituted β-fluoroalkyl ketones being obtained.



(I)



(II)

New polyfluorinated α,β-epoxy ketones (II) have been approached to by an epoxidation of (II) with H_2O_2 in alkaline medium. The structure of (II) is discussed on the basis of IR and NMR spectroscopy.

The interaction of compounds (I) and (II) with 2,4-bis (4'-methoxyphenyl)-2,4-dithioxo-1,3,2,4-dithiadiphosphetane proceeding with the formation of some new fluorosuphur compounds is considered.