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THE CHEMISTRY OF POLYFLUOROAROMATIC DERIVATIVES OF GROUPS VA AND VIA ELEMENTS AND THEIR ELECTRONIC STRUCTURE

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A review is given of recent syntheses of polyfluoroaromatic derivatives of group VA and VIA elements and their reactivity.The reactivity of N,N-dichloropolyfluoroanilines,polyfluorinated azoxybenzenes and other compounds is analysed.A new approach to oxidation of group VA elements in strong oxygen-containing acids is discussed. UV photoelectron (He I), X-ray fluorescent and Raman spectroscopic data are reported.Influence of the electronic structure of fluorine on polyfluorinated aromatic system is discussed on the basis of FK_{α} -emission spectra.A relationship has been obtained between the electronic structure and the reactivity of polyfluoroaromatic derivatives of group VA and VIA elements.

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OPTICALLY ACTIVE PERFLUOROCARBOXYLIC ACIDS AND THEIR APPLICATIONS

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Perfluoropropoxypropionic acid (PPPA), obtained by the hydrolysis of the dimer of hexafluoropropene oxide (HFPO), was optically resolved into enantiomers via its cinchonidine salt. Perfluoroisopropoxypropionic acid (PIPA), carrying a more bulky group on its chiral center, was also resolved into enantiomers.

PPPA PIPA

These optically active perfluorocarboxylic acids are thermally, chemically and optically very stable and are versatile derivatizing agents for chiral alcohols and amines. Some applications in ^{19}F nmr and chromatographic analysis will be mentioned.