Full text of Dr. G. Furin review *"INTERNAL PERFLUOROOLEFINS IN A SYNTHESIS OF FLUOROORGANIC COMPOUNDS"* **in the next volume**

INTERNAL PERFLUOROOLEFINS IN A SYNTHESIS OF FLUOROORGANIC COMPOUNDS

G.G. FURIN

Institute of Organic Chemistry, 630090, Novosibirsk, Russia

ABSTRACT

Experimental data in the last decade on the synthesis of fluoroorganic compounds by the reaction of internal perfluoroolefins with nucleophilic reagents and a direct fluorination with elementary fluorine or electrochemical fluorination of the most important classes of organic compounds are generalized and synthesized. This review covers principles governing orientation and reactivity of fluorinated alkenes towards nucleophiles, fluoride ion as a nucleophile and the reactions with nitrogen-, oxygen- and sulfur-centred nucleophiles. It has been shown that the reaction of internal perfluoroolefins with N-nucleophilic reagents gives products of terminal perfluoroolefins whose interaction leads to of the enamines. Factors which affect the stability and reactivity of these compounds are discussed as examples of their application for the preparation of partially fluorinated organic compounds containing N-, O-, P- and S-atoms. This review summarized new experimental data, as well as their theoretical description, on the use of C-nucleophiles and C-carbcations from internal perfluoroolefins in the synthesis of fluoroorganic compounds. Examples of application of the perfluorinated carbcations to the synthesis of perfluorinated olefins, cyclic systems and oxygen-containing heterocyclic are considered. The mechanisms of these transformations are discussed. A new approach to generation of the stable perfluorinated alkylradicals from internal perfluoroolefins is discussed and experimental data are given on its reaction with the varies substances. The reviews discusses modern methods the fluorination elementary fluorine internal perfluoroolefins and its derivatives. The problems of the production high qualitative perfluorinated organic materials are analyzed. Trends in the development of methods and technology for obtaining fluoroorganic compounds are indicated. Instances of the practical application of various perfluorinated substances in industry and medicine are given, rational techniques for producing them are suggested and trends in the development of these technology are considered.

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