M-1

DEVELOPMENTS IN INORGANIC FLUORINE CHEMISTRY THROUGH NOBLE-GAS CHEMISTRY

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The discovery of noble-gas compounds in 1962 quickly led to the isolation of four new simple fluorides, XeF_2, XeF_4, XeF_6 and KrF_2. All are clean fluorinating agents and this was recognized from the beginning [1]. Two have turned out to be particularly useful. Xenon difluoride has been extensively used in organic chemistry [2] and has also been instrumental in the development of new classes of inorganic compounds such as the transition-metal carbonyl fluorides [3] and chalcogenide fluorides [4]. Krypton difluoride has yielded new high oxidation-state fluorides and fluoride ions such as AuF_5 [5] and $[BrF_6]^+$ [6].

The value and further potential of noble-gas fluorides, especially XeF_2 and KrF_2, as fluorinating agents will be discussed.

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