

## LARGE SCALE SYNTHESIS OF ORGANOFLUORINE COMPOUNDS USING ELEMENTAL FLUORINE; A THIRD GENERATION SIMONS CELL?

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It is widely recognized that a few elemental fluorine reactions are important industrially, such as the Air Products' Aeropak process and Union Carbide's Linde process for surface fluorination of polymers, and it has been rather thoroughly established that elemental fluorine as a synthetic reagent offers many unique advantages on a laboratory scale. It is not widely known, however, that there is a quiet revolution brewing on industrial synthesis of organofluorine compounds and polymers using elemental fluorine in a number of industrial research programs in the United States and in Japan. There is strong evidence mounting that elemental fluorine reactions can surpass or equal well established commercial processes such as larger scale cobalt trifluoride reactors or electrolytic (Simons cell) generation of organofluorine compounds.

With this background we will compare the advantages of each technique from a first principals point of view and present a discussion of many of the important parameters from a number of other points of view.