DESCRIPTION

The definitive guide to creating fluorine-based compounds—and the materials of tomorrow

Discovered as an element by the French chemist Henri Moissan in 1886, through electrolysis of potassium fluoride in anhydrous hydrogen fluoride—"le fluor," or fluorine, began its chemical history as a substance both elusive and dangerous. With a slight pale yellow hue, fluorine is at room temperature a poisonous diatomic gas. Resembling a spirit from a chemical netherworld, fluorine is highly reactive, difficult to handle, yet very versatile as a reagent—with the power to form compounds with almost any other element.

Comprising 20% of pharmaceutical products and 30% of agrochemical compounds, as well as playing a key role in electric cars, electronic devices, and space technology, compounds containing fluorine have grown in importance across the globe. Learning how to safely handle fluorine in the preparation of innovative new materials—with valuable new properties—is of critical importance to chemists today. Bringing together the research and methods of leading scientists in the fluorine field, Efficient Preparations of Fluorine Compounds is the definitive manual to creating, and understanding the reaction mechanisms integral to a wide variety of fluorine compounds. With sixty-eight contributed chapters, the book’s extensive coverage includes:

- Preparation of Elemental Fluorine
- Synthesis Methods for Exotic Inorganic Fluorides with Varied Applications
- Introduction of Fluorine into Compounds via Electrophilic and Nucleophilic Reactions
• Direct Fluorination of Organic Compounds with Elemental Fluorine

• Efficient Preparations of Bioorganic Fluorine Compounds

• Asymmetric Fluorocyclization Reactions

• Preparations of Rare Earth Fluorosulfides and Oxyfluorosulfides

The book offers methods and results that can be reproduced by students involved in advanced studies, as well as practicing chemists, pharmaceutical scientists, biologists, and environmental researchers. The only chemical resource of its kind, *Efficient Preparations of Fluorine Compounds*—from its first experiment to its last—is a unique window into the centuries old science of fluorine and the limitless universe of fluorine-based compounds.

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**ABOUT THE AUTHOR**

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