

Preface

Topics on Inorganic Fluorine Chemistry are expanding in many fields of chemistry, electrochemistry and materials science. Synthetic and structural studies of fluorine-containing compounds are still one of the most important subjects in fluorine chemistry. In this category, many solid materials such as metal fluorides, metal oxide fluorides, fluorinated carbon materials, fluoropolymers and intercalation compounds with fluoroligands have been recently investigated. The range of materials is very wide indeed, including single crystals, powdered and bulk products, fibers, thin layers, liquids, gaseous reagents, etc. Physicochemical properties of these materials such as optical or surface properties have been also investigated. In surface chemistry, fluorine and fluoride reagents exhibit noticeable advantages because the various fluorination techniques can be applied at relatively low temperatures. In the field of energy generation, application to nuclear field has been known, being very important now and in future to satisfy the energy demand in industrialized and emergent countries. Another topic in energy generation is the present application of fluorine chemistry in several domains related to chemical energy, that is, rechargeable lithium battery, lead battery and so on, though fluorine compounds have been used for long time in primary lithium battery. Ionic liquids are included, as a new topic in which contribution of fluorine chemistry is highly expected. It should be

also highlighted that electrochemical fluorination is one of the most important fluorination techniques and that application of fluorinating gases to semiconductor industries is today a very active field.

The present special issue thus summarizes most recent advances in inorganic fluorine chemistry. We do hope that this issue will contribute to fundamental and applied chemistry, materials science and industrial applications.

Tsuyoshi Nakajima*
Aichi Inst. Tech., Japan

Henri Groult
University P. and M. Curie-CNRS, France

Alain Tressaud
ICMCB-CNRS, France

*Corresponding author.
Tel.: +81 565 48 8121x2201; fax: +81 565 48 0076
E-mail address: nakajima-san@aitech.ac.jp (T. Nakajima)

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