

Preface

From the viewpoint of structural chemistry, structure and bonding lie at the heart of rational syntheses that have already contributed to many significant scientific advances in inorganic chemistry and material chemistry, and especially to the discovery of some functional materials. Naturally the first step to novel functional material is “synthesis”, and in many cases exploratory synthesis seems to be the only workable route to new compound. However, rational synthesis will surely make property-oriented exploration more fruitful and pleasing.

Success under the guidance of electronic structural features, bonding interactions, chemical reactivity of building units, etc. has been achieved in many systems. We have presented some significant advances on five topics via review-type chapters that were written by five of the leading authorities in their fields. These chapters concern chemical approach to new quasicrystals, discovery of complicated compounds of pnictogen, the tuning of redox levels and oligomerization of triruthenium-acetate clusters, structural modification of monomeric phthalocyanines, and the controlled assembly of amino lanthanide metal-organic frameworks (MOFs).

This volume has shown that the controlled assembly and modification of inorganic systems are accessible and efforts along the way will contribute greatly to the discovery of new functional materials as well as the satisfaction of the curiosity of fundamental research.

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