96
Structure and Bonding

Springer
Berlin
Heidelberg
New York
Barcelona
Hong Kong
London
Milan
Paris
Singapore
Tokyo

Molecular Self-Assembly
Organic Versus Inorganic Approaches

Volume Editor: M. Fujita

With contributions by
I. Bernt, H. Bögge, A.J. Carr, P.S. Corbin,
B. Demleitner, M. Fujita, A.D. Hamilton, T. Kato,
P. Kögerler, M.J. Krische, J.-M. Lehn, B.R. Linton,
R.E. Meléndez, A. Müller, R.W. Saalfrank, E. Uller,
S.C. Zimmerman

Springer

The series *Structure and Bonding* publishes critical reviews on topics of research concerned with chemical structure and bonding. The scope of the series spans the entire Periodic Table. It focuses attention on new and developing areas of modern structural and theoretical chemistry such as nanostructures, molecular electronics, designed molecular solids, surfaces, metal clusters and supramolecular structures. Physical and spectroscopic techniques used to determine, examine and model structures fall within the purview of Structure and Bonding to the extent that the focus is on the scientific results obtained and not on specialist information concerning the techniques themselves. Issues associated with the development of bonding models and generalizations that illuminate the reactivity pathways and rates of chemical processes are also relevant.

As a rule, contributions are specially commissioned. The editors and publishers will, however, always be pleased to receive suggestions and supplementary information. Papers are accepted for *Structure and Bonding* in English.

In references *Structure and Bonding* is abbreviated Struct. Bond.
and is cited as a journal.

Springer WWW home page: http://www.springer.de

ISSN 0081-5993
ISBN 3-540-66948-5
Springer-Verlag Berlin Heidelberg New York

CIP Data applied for

Springer-Verlag is a company in the BertelsmannSpringer publishing group

Printed in Germany

Typesetting: Scientific Publishing Services (P) Ltd, Madras
Production editor: Christiane Messerschmidt, Rheinau
Cover: Medio V. Leins, Berlin
Printed on acid-free paper SPIN: 10702272 02/3020 – 5 4 3 2 1 0

Volume Editor

Prof. Makoto Fujita

Department of Applied Chemistry
Graduate School of Engineering
Nagoya University
Chikusa, Nagoya 464-8603
Japan
E-mail: mfujita@apchem.nagoya-u.ac.jp

Editorial Board

Preface

Self-assembly has been undoubtedly a topic of special interest in current chemistry and is related to very wide scientific areas, including molecular recognition, material science, crystal engineering, nanotechnology, supramolecular chemistry, etc. Recent progress in this field seems to feature the construction of well-defined discrete systems exploiting complementary hydrogen bonding as well as coordination bonding. The purpose of the volume is to introduce the current topics in this very interesting field, focusing on two major subjects: i.e., organic assemblies (Part I) and inorganic assemblies (Part II). Seven international leading experts in this field deal with up-to-date topics in molecular self-assembly.

Part I begins with a review of hydrogen-bonded assemblies by Krische and Lehn (Louis Pasteur University, Chapter 1). Recent development in the work of their group is emphasized. This field has shown impressive progress in the development of novel multi H-bonding donor-acceptor systems, which is thoroughly discussed by Hamilton and co-workers (Yale University, Chapter 2) and Zimmerman and co-workers (University of Illinois, Chapter 3). In Chapter 4, Kato (University of Tokyo) deals with function through assemblies in hydrogen-bonded liquid crystalline compounds.

Part II of this volume focuses on inorganic assemblies involving coordination and metal-oxide linkages. Coordination assemblies are most discussed by Saalfrank (Universität Erlangen), who has been developing unique metal-assembled cage compounds since the late 1980s, and his co-workers (Chapter 5). Fujita (Nagoya Univeristy) also introduces a unique concept of metal-directed molecular paneling (Chapter 6). Finally, the inorganic part is concluded by Müller and his co-workers (Universität Bielfeld) with novel inorganic giant compounds consisting of metal-oxide linkages (Chapter 7).

I hope that chemists who are interested in molecular recognition, material science, nanotechnology, and supramolecular chemistry will welcome this book as an inspiring source for creative research ideas.

Nagoya, February 2000 Makoto Fujita

Contents

Contents of Topics in Current Chemistry, Vol. 198

Design of Organic Solids

Volume Editor: E. Weber