Supramolecular Chemistry: From Molecules to Nanomaterials, 8 Volume Set
Jonathan W. Steed (Editor-in-Chief), Philip A. Gale (Editor-in-Chief)

Hardcover      ISBN: 978-0-470-74640-0      March 2012      $2,756.00

DESCRIPTION

Supramolecular Chemistry: From Molecules to Nanomaterials is a new major reference work which links supramolecular chemistry and nanomaterials. Presenting over 150 tutorial articles and spanning over 10 comprehensive sections, this new resource covers:

• Concepts

• Techniques

• Molecular recognition

• Supramolecular reactivity

• Supramolecular aspects of chemical biology

• Self processes

• Supramolecular devices

• Supramolecular materials chemistry

• Soft matter

• Nanotechnology

Supramolecular chemistry is 'chemistry beyond the molecule'. While traditional chemistry focuses on the bonds that hold atoms together in a molecule, supramolecular chemistry examines the weaker interactions that hold groups of molecules together. Important
concepts that have been demonstrated by supramolecular chemistry include molecular self-assembly, folding, molecular recognition, host-guest chemistry, mechanically-interlocked molecular architectures, and dynamic covalent chemistry.

The importance of supramolecular chemistry was established by the 1987 Nobel Prize for Chemistry, which was awarded to Donald J. Cram, Jean-Marie Lehn, and Charles J. Pedersen in recognition of their work in the field.

The past decade has seen dramatic developments in the field, with supramolecular chemistry leaving its roots in classical host guest chemistry and expanding into exciting areas of materials chemistry and nanoscience with many real and potential applications. Supramolecular findings are evolving our understanding of the way chemical concepts at the molecular level build up into materials and systems with fascinating, emergent properties on the nanoscale.

**Supramolecular chemistry: the biggest challenge yet!**

"Creating that link between the chemist's understanding of the way in which molecules interact with one another, and the understanding a materials scientist, engineer or biologist has of the resulting properties of a material or system comprised of those molecules is one of the huge grand challenges facing modern molecular science."

— Philip A. Gale and Jonathan W. Steed, Editors-in-Chief

**Linking supramolecular chemistry and nanotechnology to define the field in the 21st Century…**

*Supramolecular Chemistry: From Molecules to Nanomaterials* is the first major reference to link supramolecular chemistry and nanotechnology. A global team of experts present an overview of the concepts and techniques of modern supramolecular chemistry, demonstrating how these paradigms evolve into nanoscale systems chemistry, nanotechnology, materials science and beyond.

Breaking down the barriers between synthetic chemistry and materials science, the authors demonstrate how modern techniques allow access increasingly far along the 'synthesising-up' pathway. *Supramolecular Chemistry: From Molecules to Nanomaterials* explains the fundamental concepts and provides invaluable practical guidance on the applications and limitations of modern instrumental techniques for addressing molecular and materials-based problems.

The printed edition of *Supramolecular Chemistry: From Molecules to Nanomaterials* is available as an eight-volume set. Publishing in full colour to enhance the interpretation of complex supramolecular structures the printed edition

• is highly illustrated with an average of three images per page

• features fully indexed articles with cross-references integrated into the text

• includes a glossary of key terms
ABOUT THE AUTHOR

Editors-in-Chief

Professor Philip Gale, School of Chemistry, University of Southampton, UK

Professor Gale is currently Head of the School of Chemistry at Southampton University. He is the author or co-author of over 160 publications including two books and a series of highly cited review articles on anion complexation. Professor Gale has won a number of research prizes and is the co-editor of the journal *Supramolecular Chemistry*, a commissioning editor for *Chemical Society Reviews* and a member of the international editorial advisory boards of Coordination Chemistry Reviews, the Encyclopaedia of *Supramolecular Chemistry, The Open Inorganic Chemistry Journal* and *Chemical Communications*. Professor Gale is also a member of RSC Science Policy Board.

Professor Jonathan Steed, Professor of Inorganic Chemistry, Department of Chemistry, Durham University, UK


International Advisory Board

Jerry Atwood - University of Missouri-Columbia
Paul D. Beer - University of Oxford
Makoto Fujita - The University of Tokyo
Tom Fyles - University of Victoria
Andrew D. Hamilton - Yale University
Michaele Hardie - University of Leeds
Ivan Huc - Institut Européen de Chimie et Biologie (IECB)
Yun-Bao Jiang - Xiamen University
Kate Jolliffe - The University of Sydney
Kimoon Kim - Pohang University of Science and Technology (POSTECH)
David A. Leigh - University of Edinburgh
Jonathan L. Sessler - Institute for Cellular and Molecular Biology
George Shimizu - University of Calgary

Section Editors
Philip Gale, University of Southampton, UK
Eric Anslyn, University of Texas, USA
Bradley Smith, University of Notre Dame, USA
Edwin Constable, University of Basel, Switzerland
Enrique García-España, Universidad de Valencia, Spain
Douglas Philp, University of St Andrews, UK
Marcey Waters, University of North Carolina, USA
David Amabilino, Institut de Ciencia de Materials de Barcelona (CSIC), Spain
Pavel Anzenbacher, Bowling Green State University, USA
Len Barbour, University of Stellenbosch, South Africa
David K Smith, University of York, UK
Paula Mendes & Jonathan Preece, University of Birmingham, UK

For additional product details, please visit https://www.wiley.com/en-us