The book cover features a dark, monochromatic background of a forest scene. Overlaid on this are several overlapping circles of varying shades of gray and white, creating a complex, geometric pattern. The circles are arranged in a way that they partially obscure each other, creating a sense of depth and layering. The overall aesthetic is modern and scientific.

# **MACROMOLECULAR SELF-ASSEMBLY**

EDITED BY  
**LAURENT BILLON AND OLEG BORISOV**

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Molecular self-assembly, the process by which molecules adopt a defined arrangement without human guidance or management, is crucial to the function of cells. It is characteristic of lipids forming membranes, the formation of double helical DNA, and the assembly of proteins forming quaternary structures. Macromolecular self-assembly is also considered as the most promising bottom-up approach in nano(bio)technology.

This book describes techniques of synthesis and self-assembly of macromolecules that may be useful for developing new materials and improving the functionality of existing materials. Because self-assembly is how nature creates complex systems, emulation of this process is likely to have a good chance at succeeding in real-world biomedical applications.

A valuable and comprehensive resource for researchers and graduate students, *Macromolecular Self-Assembly* offers readers benefits that include:

- Use of synthetic chemistry, physical chemistry, and materials science principles and techniques
- Emphasis on self-assembly in solutions (particularly, aqueous solutions) and at solid-liquid interfaces
- Description of polymer assembly driven by multitude interactions, including solvophobic and electrostatic ones
- Illustration of the assembly of bio-hybrid macromolecules and applications in biomedical engineering


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