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Nota di contenuto	Foldamers; Foreword; Contents; Preface; List of Contributors; Part 1 Structure: Foldamer Design Concepts; 1 Foldamers Based on Local Conformational Preferences; 1.1 Introduction; 1.2 Rigidly Locked Molecules; 1.3 Predictable Foldamers; 1.3.1 Local Conformational Control; 1.3.2 Folded Conformations of -conjugated Systems; 1.3.2.1 Crescents and Helices; 1.3.2.2 Linear Strands; 1.3.2.3 Macrocycles; 1.3.3 Partially -conjugated Oligomers; 1.4 Semi-rigid Backbones; 1.4.1 Tertiary Aromatic Amides, Imides and Ureas; 1.4.2 Tertiary Aliphatic Amides: Polyprolines and Peptoids

1.4.3 Hindered Polymer and Oligomer Backbones1.5 Conformational Transitions; 1.6 Conclusion and Perspectives; References; 2 Foldamers Based on Remote Intrastrand Interactions; 2.1 Introduction; 2.2 What can be Learned from Strategies used to Control Conformations of -Polypeptides?; 2.3 Helices from Homogeneous Oligomeric Backbones with Periodicity at the Monomer Level: -Peptides and their Analogs; 2.3.1 Compact Helices with Large (>10 atoms) H-bonded Rings; 2.3.1.1 The Homologation Strategy: - and -Peptide Foldamers
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2.6 Expanding Structural Diversity with Heterogeneous Backbones2.6.1 From Discrete -Amino Acid Guests in -Helices to Helical ,- and ,-Peptide Hybrids; 2.6.2 Hairpins from ,-Peptide Hybrids; 2.6.3 Sculpting New Shapes by Integrating H-Bonding, Aromatic Interactions and Multiple Levels of Pre-organization; 2.7 Conclusion and Outlook; References; 3 Foldamers Based on Solvophobic Effects; 3.1 Introduction; 3.2 Learning from Solvophobically Driven Assemblies - Intermolecular Solvophobic Interactions; 3.3 Learning from Synthetic and Biological Polymers
3.4 Recent Advances in Foldamers Based on Solvophobic Effects

Sommario/riassunto

This truly comprehensive treatise of foldamers, from synthesis to applications in bio-, material-, and nanoscience is at once an introduction to the topic, while providing in-depth accounts on various aspects clearly aimed at the specialist.The book is clearly structured, with the first part concentrating on structure and foldamer design concepts, while the second part covers functional aspects from properties to applications. The international team of expert authors provides overviews of synthetic approaches as well as analytical techniques.