

1. Record Nr.	UNINA9910133454003321
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Titolo	Macrocycles [[electronic resource]] : construction, chemistry and nanotechnology applications // Frank Davis, Séamus Higson
Pubbl/distr/stampa	Chichester, West Sussex, U.K., : Wiley, 2011
ISBN	1-119-99029-7 1-283-40517-2 9786613405173 1-119-98993-0 0-470-98020-6
Descrizione fisica	1 online resource (640 p.)
Classificazione	TEC021000
Altri autori (Persone)	HigsonSeamus
Disciplina	547.59
Soggetti	Macrocyclic compounds Macromolecules
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index
Nota di contenuto	Preface. 1. Introduction. 1.1. Simple ring compounds. 1.2. Three dimensional aliphatic carbon structures. 1.3. Annulenes. 1.4. Multi-ring aromatic structures. 1.5. Porphyrins and phthalocanines. 1.6. Conclusions. References. 2. Cyclophanes. 2.1. Introduction to cyclophanes. 2.2. Cyclophanes with one aromatic system and aliphatic chain. 2.3. Cyclophanes with more than 1 aromatic ring. 2.4. Naphthalenophanes and other aromatic systems. 2.5. Cyclophanes containing heteroaromatic systems. 2.6. Ferrocenophanes. References. 3. Crown ethers, cryptands and other compounds. 3.1. Introduction. 3.2. Crown ethers. 3.3. Simple complexes with crown ethers. 3.4. Azacrowns, cyclens and cyclams. 3.5. Crowns containing other heteroatoms. 3.6. Lariat and bibracchial crown ethers. 3.7. Cryptands. 3.8. Spherands. 3.9. Combined and multiple systems. 3.10. Applications of crown ethers and related compounds. 3.11. Conclusions. References. 4. Calixarenes. 4.1. Introduction to calixarenes. 4.2. History of the calixarenes. 4.3. Structures of calixarenes. 4.4. Chemical modification of calixarenes. 4.5. Complexes with calixarenes. 4.6. Bis- and multicalixarenes. 4.7. Oxacalixarenes,

azacalixarenes and thiacalixarenes. 4.8. Resorcinarenes - synthesis and structure. 4.9. Cavitands and carcerands. 4.10. Uses of calixarenes and conclusions. References. 5. Heterocalixarenes and calixnaphthalenes. 5.1. Introduction to heterocalixarenes and calixnaphthalenes. 5.2. Calixnaphthalenes. 5.3. Tropolone based macrocycles. 5.4. Calixfurans. 5.5. Calixpyrroles. 5.6. Calixindoles, calixpyridines and calixthiophenes. 5.7. Conclusions. References. 6. Cyclodextrins. 6.1. Introduction to cyclodextrins. 6.2. Complex formation by cyclodextrins. 6.3. Cyclodextrins of other sizes. 6.4. Modification reactions of cyclodextrins. 6.5. Selectivity of cyclodextrins. 6.6. Multiple cyclodextrin systems. 6.7. Polymeric cyclodextrins. 6.8. Cyclodextrins combined with other macrocyclic systems. 6.9. Therapeutic uses of cyclodextrins. 6.10. Other uses of cyclodextrins. 6.11. Conclusions. References. 7. Cyclotrimeratrylenes and cryptophanes. 7.1. Introduction to cyclotrimeratrylenes and cryptophanes. 7.2. Synthesis of cyclotrimeratrylenes. 7.3. Modification of cyclotrimeratrylenes. 7.4. Synthesis of optically active cyclotrimeratrylenes. 7.5. Modification of the bridging groups. 7.6. Modification of the aromatic rings with organometallic groups. 7.7. Selective binding applications of cyclotrimeratrylenes. 7.8. Analogues of CTV. 7.9. Cryptophanes - synthesis and structure. 7.10. Cryptophanes - chemical modification. 7.11. Complexes with cryptophanes. 7.12. Cryptophane/Xenon complexes. 7.13. Other uses of cryptophanes. 7.14. Hemicryptophanes. 7.15. Conclusions. References. 8. Cucurbiturils. 8.1. Introduction to cucurbiturils. 8.2. Complexation behaviour of simple cucurbiturils. 8.3. Modification of cucurbiturils. 8.4. Uses of cucurbiturils. 8.5. Hemicucurbiturils. 8.6. Conclusions. References. 9. Rotaxanes and catenanes. 9.1. Introduction to rotaxanes and catenanes. 9.2. Rotaxanes. 9.3. Rotaxanes as molecular machines. 9.4. Thin films of rotaxanes. 9.5. Polyrotaxanes. 9.6. Catenanes. 9.7. Switchable catenanes. 9.8. Catenanes on surfaces. 9.9. Polycatenanes and catenated polymers. 9.10. Natural catenanes. 9.11. Conclusions. References. 10. Other supermolecular systems, molecular motors, machines and nanotechnological applications. 10.1. Introduction. 10.2. Other molecular systems. 10.3. Molecular devices, motors and machines. 10.4. Conclusions. References.

Sommario/riassunto

Providing an essential introduction on this important class of molecules which underpin nanotechnology, this book describes how they can be used as nanotechnology building blocks, and their applications.

2. Record Nr.	UNINA9910773048103321
Titolo	Chapter Insights from the Fields: the Role of Reflection in 'Learning How to Learn'
Pubbl/distr/stampa	Florence, : Firenze University Press
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia