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Autore	Diudea Mircea Vasile
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Collana	Carbon Materials: Chemistry and Physics, , 1875-0745 ; ; 10
Disciplina	541.2
Soggetti	Chemistry, Physical and theoretical Nanotechnology Mathematical physics Theoretical and Computational Chemistry Mathematical Applications in the Physical Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- Map operations: definitions and examples -- Multi-tori: Structures -- Dodecahedral motif -- Icosahedral motif -- Octahedron and truncated octahedron coverings -- Tetrahedron and truncated tetrahedron coverings -- Rhomb decorated clusters -- 4-D structures modification -- C60 aggregation -- Hypergraphenes.
Sommario/riassunto	This volume presents new methodologies and rationalizes existing methods that are used in the design of multi-shell polyhedral clusters. The author describes how the methods used are extended from 2D-operations on maps to 3D (and higher dimensional) Euclidean space. A variety of structures is designed and described in detail and classified giving rise to an atlas of multi-shell nanostructures. The book therefore sheds a new light on the field of crystal and quasicrystal structures, an important part of nanoscience and nanotechnology. The author goes on to show how the recently established methods are used for building complex multi-shell nanostructures and how this completes the existing information in the field. The atlas of such structures is completed with atomic coordinates (included as supplementary material). The content of this book gives a useful

insight into structure elucidation and suggests new material synthesis.
