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   Titolo   Trivalent Discrete Surfaces and Carbon Structures [[electronic resource] /] / by Hisashi Naito

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   Disciplina   548.7

   Soggetti   Geometry, Differential
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   Differential Geometry
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   Lingua di pubblicazione   Inglese

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   Nota di contenuto   Overview of this monograph -- Graph theory -- Topological crystals -- Negatively curved carbon structures -- Trivalent discrete surfaces -- Subdivisions of trivalent discrete surfaces -- Miscellaneous topics.

   Sommario/riassunto   This book discusses discrete geometric analysis, especially topological crystallography and discrete surface theory for trivalent discrete surfaces. Topological crystallography, based on graph theory, provides the most symmetric structure among given combinatorial structures by using the variational principle, and it can reproduce crystal structures existing in nature. In this regard, the topological crystallography founded by Kotani and Sunada is explained by using many examples. Carbon structures such as fullerenes are considered as trivalent discrete surfaces from the viewpoint of discrete geometric analysis. Discrete surface theories usually have been considered discretization of smooth surfaces. Here, consideration is given to discrete surfaces modeled by crystal/molecular structures, which are essentially discrete objects. .