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Titolo	Structural colors in the realm of nature [[electronic resource] /] / Shuichi Kinoshita
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Descrizione fisica	1 online resource (368 p.)
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Soggetti	Animals - Color Structural colors Animal pigments Plants - Color
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 265-285) and indexes.
Nota di contenuto	1. Introduction. 1.1. What is structural color? 1.2. Historical overview -- 2. Fundamentals of structural coloration. 2.1. Fundamentals of properties of light. 2.2. Thin-film interference. 2.3. Multilayer interference. 2.4. Diffraction of light and diffraction grating. 2.5. Photonic crystals. 2.6. Light scattering -- 3. Butterflies and moths. 3.1. General descriptions. 3.2. Morpho butterflies. 3.3. Overview of the structural coloration in butterflies and moths -- 4. Beetles and other insects. 4.1. Overview. 4.2. Beetles. 4.3. Damselflies and dragonflies. 4.4. Shield bugs and cicadas. 4.5. Other insects -- 5. Birds. 5.1. Overview. 5.2. Peacocks, pheasants, and ducks. 5.3. Hummingbirds. 5.4. Trogons. 5.5. Pigeons. 5.6. Non-iridescent colorations - kingfishers, parakeets, cotingas, and jays -- 6. Fish. 6.1. General description. 6.2. Static iridophores. 6.3. Motile iridophores. 6.4. Motile iridophores -- 7. Plants -- 8. Miscellaneous. 8.1. Shells. 8.2. Spiders. 8.3. Marine animals -- 9. Mathematical background. 9.1. Calculations of multilayer reflection. 9.2. Model for Morpho butterfly scale. 9.3. Antireflection effect. 9.4. Average refractive index. 9.5. Cholesteric liquid crystal.
Sommario/riassunto	Structural colorations originate from self-organized microstructures, which interact with light in a complex way to produce brilliant colors

seen everywhere in nature. Research in this field is extremely new and has been rapidly growing in the last 10 years, because the elaborate structures created in nature can now be fabricated through various types of nanotechnologies. Indeed, a fundamental book covering this field from biological, physical, and engineering viewpoints has long been expected. Coloring in nature comes mostly from inherent colors of materials, though it sometimes has a purely p
