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Nota di contenuto	Flexible Solar Cells; Contents; Preface; 1 Towards a Solar Energy Revolution; 1.1 Flexible Solar Cells; 1.2 Why We are Entering the Solar Age; 1.3 Capturing Solar Light and Transferring Energy Efciently; 1.4 Three Waves of Innovation; 1.5 Solar Design; 1.6 New Solar Companies; References; 2 Photovoltaics; 2.1 How a Solar Cell Works; 2.2 The Solar Cell: A Current Generator; 2.3 Efcieny Limits of the Photovoltaic Conversion; 2.4 Multiple Junction Cells; 2.5 Solar Cell Applications; 2.6 Brief History of Modern Photovoltaics; References; 3 Inorganic Thin Films 3.1 Thin Film PV: Technology for the Future3.2 Amorphous Si Thin Films; 3.3 CIGS Thin Films on Metal Foil; 3.4 CdTe Thin Films; 3.5 CIS Thin Films; 3.6 Environmental and Economic Concerns; References; 4 Organic Thin Film Solar Cells; 4.1 Organic Solar Cells; 4.2 Bulk Heterojunction Solar Cells; 4.3 Optimization of Organic Solar Cells; 4.4 Printed Plastic Solar Cells; 4.5 Brushing Plastic Solar Cells; 4.6 Power Plastic; References; 5 Organic-Inorganic Thin Films; 5.1 Dye Cells: A Versatile Hybrid Technology; 5.2 DSC Working Principles; 5.3 A

Roadmap for Dye Solar Cells

5.4 Building-Integrated PV with Colored Solar Cells; 5.5 Personalizing Solar Power; References; 6 Emerging Technologies; 6.1 The Solar Paradox; 6.2 Quantum Well Solar Cells; 6.3 Nanostructured Solar Cells; 6.4 Graphene Solar Cells; 6.5 Nanorectennas; References; 7 Helionomics; 7.1 Oil Peak Meets Climate Change; 7.2 Solar Energy. Rewarding People, Rewarding Capital Markets; 7.3 Zero Emissions, Lean Production; 7.4 The Solar Energy Market; 7.5 PV Technology Trend; 7.6 Grand Solar Plans; 7.7 A New Manhattan Project?; References; List of Companies; Index

Sommario/riassunto

With the decline in the world's natural resources, the need for new and cheaper energy sources is evolving. One such source is the sun which generates heat and light which can be harnessed and used to our advantage. This reference book introduces the topic of photovoltaics in the form of flexible solar cells. There are explanations of the principles behind this technology, the engineering required to produce these products and the future possibilities offered by this technology. The chemistry and physics of the cells (both organic and inorganic) are clarified as well as production meth
