1.

Record Nr.	UNINA9910814201803321
Titolo	Stability and degradation of organic and polymer solar cells / / editor, Frederik C. Krebs
Pubbl/distr/stampa	Chichester, West Sussex, U.K., : Wiley, 2012
ISBN	1-118-31223-6 1-280-59010-6 9786613619938 1-118-31221-X 1-119-94243-8 1-119-94242-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (376 p.)
Altri autori (Persone)	KrebsFrederik C
Disciplina	621.3815/42
Soggetti	Polymers - Deterioration Photovoltaic cells Organic compounds - Biodegradation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Stability and Degradation of Organic and Polymer Solar Cells; Contents; Preface; Acknowledgements; List of Contributors; 1. The Different PV Technologies and How They Degrade; 1.1 The Photovoltaic Effect and the Overview; 1.2 The Photovoltaic Technologies; 1.3 Intrinsic Versus Extrinsic Stability; 1.3.1 Intrinsic Stability; 1.3.2 Extrinsic Stability; 1.4 Degradation - The Culprits, the What, the Why and the How; 1.5 Some Representative Technologies and How They Degrade; 1.5.1 Mono- and Polycrystalline Silicon Solar Cells; 1.5.2 Amorphous, Micro- and Nanocrystalline Silicon Solar Cells 1.5.3 CIS/CIGS Solar Cells1.5.4 CdS/CdTe Solar Cells; 1.5.5 Dye-Sensitized Solar Cells (DSSC); 1.5.6 Organic and Polymer Solar Cells (OPV); References; 2. Chemical and Physical Probes for Studying Degradation; 2.1 Introduction; 2.2 Physical Probes; 2.2.1 UV-vis Spectroscopy; 2.2.2 Atomic Force Microscopy (AFM); 2.2.3 Interference Microscopy; 2.2.4 Scanning Electron Microscopy (SEM); 2.2.5 Fluorescence Microscopy; 2.2.6 Light-Beam Induced-Current

Sommario/riassunto

Organic photovoltaics (OPV) are a new generation of solar cells with the potential to offer very short energy pay back times, mechanical flexibility and significantly lower production costs compared to traditional crystalline photovoltaic systems. A weakness of OPV is their comparative instability during operation and this is a critical area of research towards the successful development and commercialization of these 3rd generation solar cells. Covering both small molecule and polymer solar cells, Stability and Degradation of Organic and Polymer Solar Cells summarizes the