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| Pubbl/distr/stampa      | Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023   |
| ISBN                    | 981-9912-37-7  |
| Edizione                | [1st ed. 2023.]  |
| Descrizione fisica      | 1 online resource (XVI, 200 p. 177 illus., 90 illus. in color.)  |
| Collana                 | Electronic Materials: Science & Technology   |
| Disciplina              | 621.38152  |
| Soggetti                | Semiconductors<br>Nonmetallic materials<br>Surfaces (Physics)<br>Electronics - Materials<br>Photovoltaic power generation<br>Organic Molecules in Materials Science<br>Surface and Interface and Thin Film<br>Electronic Materials<br>Photovoltaics  |
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| Livello bibliografico   | Monografia   |
| Nota di bibliografia    | Includes bibliographical references.   |
| Nota di contenuto       | 1. Photocurrent Multiplication in Inorganic Semiconductor Films -- 2. Photocurrent Multiplication in Organic Semiconductor Films -- 3. Analyses of Multiplication Behaviors -- 4. Nature of Structural Trap -- 5. Photocurrent Multiplication at Organic/Organic Heterojunctions -- 6. Multiplied Photocurrent Oscillation with Negative Resistance -- 7. Avalanche Multiplication in Organic Single Crystals -- 8. Recent Progress and Future Perspective.  |
| Sommario/riassunto      | This book opens the eyes of readers to the clear relationship between the molecular-sized structures and the macroscopic functions of organic devices. The discovery of novel phenomena and the mechanism of multiplied photocurrent generation in organic semiconductors, which can be applicable to amplification-type photosensors, are concisely summarized. The motivation for writing this book is to let readers know how the novel phenomena were discovered and how the novel concepts were created. The main features here include the |

discovery of photocurrent multiplication, the tunneling mechanism, the structural trap model, novel phenomena related to photocurrent multiplication, avalanche multiplication, and ideas for the future. This book is of interest to new and experienced scientists as well as graduate students. The author strongly hopes that the young scientists of the next generation will be enthusiastically inspired by this book and will develop the field of organic semiconductors even further.

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