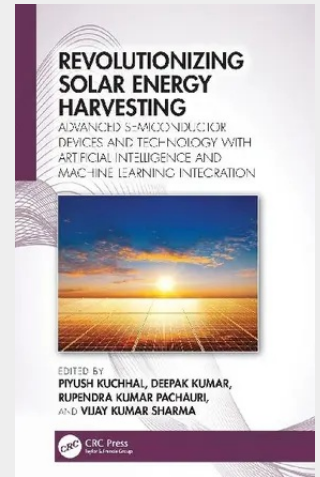


Revolutionizing Solar Energy Harvesting

Advanced Semiconductor Devices and Technology with Artificial Intelligence and Machine Learning Integration

This book provides insights into emerging semiconductor device technology, challenges, and solutions for harnessing solar power to produce sustainable energy and meet the escalating demand for electricity generation. Revolutionizing Solar Energy Harvesting provides desired exposure to the ever-growing field of semiconductor electronic devices and technologies to produce power by harnessing solar energy. The authors highlight the role of semiconductors and the process technologies in meeting global energy demand. They also explore international policies and standards for harnessing solar power. The authors then discuss the impact of semiconductor materials and architecture designs on photovoltaic performance. Finally, the authors then discuss manufacturing and selection of materials using artificial intelligence (AI)–machine learning (ML) techniques and emphasize enhancing the production of defect-free semiconductor materials by employing AI–ML techniques. The book is intended for researcher professionals in the field of nanomaterials and semiconductor devices for harnessing solar power codesign issues, as well as undergraduate/postgraduate students within Electronics or Electrical Engineering programs.

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