

1. Record Nr.	UNINA9910813649703321
Titolo	Thermoelectrics and its energy harvesting . [Volume 2] Modules, systems, and applications in thermoelectrics // edited by David Michael Rowe
Pubbl/distr/stampa	Boca Raton, FL, : CRC Press, 2012
ISBN	0-429-08825-6 1-4665-6030-4
Edizione	[1st ed.]
Descrizione fisica	1 online resource (567 p.)
Altri autori (Persone)	RoweDavid Michael
Disciplina	620.11296
Soggetti	Thermoelectric apparatus and appliances Electrical engineering
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	Front Cover; Contents; Preface; Editor; Contributors; Chapter 1 - Nanostructured Thermoelectric Materials; Chapter 3 - Bulk Nanocomposites of Thermoelectric Materials; Chapter 4 - Layer-Structured Metal Sulfides as Novel Thermoelectric Materials; Chapter 5 - Thermoelectric Properties of Quantum Wires within Chrysotile Asbestos Nanotubes; Chapter 6 - Bismuth Telluride Alloys for Waste Energy Harvesting and Cooling Applications; Chapter 7 - Optimization of Solid Solutions Based on Bismuth and Antimony Chalcogenides above Room Temperature Chapter 8 - Effect of Vacancy Distribution on the Thermoelectric Properties of Gallium and Indium Chalcogenides Chapter 9 - Thermoelectric Inverse Clathrates; Chapter 10 - Recent Advances in the Development of Efficient N-Type Skutterudites; Chapter 11 - Silicide Thermoelectrics: State of the Art and Prospects; Chapter 12 - Thermoelectric Properties of Intermetallic Hybridization Gap and Pseudo-Gap Systems: Fe ₂ VAl and CoSi; Chapter 14 - Boride Thermoelectrics: High-Temperature Thermoelectric Materials; Chapter 15 - Polymer Thermoelectric Materials Chapter 16 - Thermomechanical Properties of Thermoelectric Materials Chapter 17 - Miniaturized Thermoelectric Converters, Technologies, and Applications; Chapter 19 - Millikelvin Tunnelling

Refrigerators; Chapter 20 - Heat Dissipaters; Chapter 21 - Thin-Film Superlattice Thermoelectric Devices for Energy Harvesting and Thermal Management; Chapter 22 - Thermoelectric Energy Recovery Systems: Thermal, Thermoelectric, and Structural Considerations; Chapter 23 - Thermoelectric Harvesting of Low-Temperature Heat; Chapter 24 - Solar Thermoelectric Power Conversion
Chapter 25 - Automotive Applications of Thermoelectric Materials
Chapter 26 - Medical Applications of Thermoelectrics; Back Cover

Sommario/riassunto

This book includes updated theoretical considerations which provide an insight into avenues of research most likely to result in further improvements in material performance. It details the latest techniques for the preparation of thermoelectric materials employed in energy harvesting, together with advances in the thermoelectric characterisation of nanoscale material. The book reviews the use of neutron beams to investigate phonons, whose behaviour govern the lattice thermal conductivity and includes a chapter on patents--
With contributions from leading experts, this book begins with an overview of thermoelectric nanotechnology, setting the scene for the topics covered in the rest of the volume. It provides a comprehensive review of the progress made in the development of modules and their application in devices. The book highlights dramatic advances in miniaturization and its successful commercialization in energy harvesting. It then covers thermoelectric energy harvesting and contains reviews of the solar, automotive, and medical harvesting of waste heat--
