Thermoelectric Energy Conversion: Basic Concepts and Device Applications

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**DESCRIPTION**

The latest volume in the well-established AMN series, this ready reference provides an up-to-date, self-contained summary of recent developments in the technologies and systems for thermoelectricity.

Following an initial chapter that introduces the fundamentals and principles of thermoelectricity, subsequent chapters discuss the synthesis and integration of various bulk thermoelectric as well as nanostructured materials. The book then goes on to discuss characterization techniques, including various light and mechanic microscopy techniques, while also summarizing applications for thermoelectric materials, such as micro- and nano-thermoelectric generators, wearable electronics and energy conversion devices.

The result is a bridge between industry and scientific researchers seeking to develop thermoelectric generators.

**ABOUT THE AUTHOR**

Diana Dávila is currently an Advanced Senior Engineer at the IBM Research - Zurich Lab. She received her B.Sc. in Electronic Engineering, from the Tecnológico de Monterrey, Mexico (2004) and her M.S. in Micro and Nanoelectronic Engineering (2008) and Ph.D. in Electronic Engineering (2011) from the Universitat Autònoma de Barcelona, Spain. She has conducted research on fuel cells, nanomaterials, thermoelectricity, spintronics and MEMS devices in multidisciplinary environments such as the Microelectronics Institute of Barcelona (IMB-CNMT, CSIC), the Catalonia Institute for Energy Research (IREC), the International...
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Alireza Rezaniakolaei studied Mechanical Engineering at University of Mazandaran, Iran and, got his PhD in Energy Engineering from Aalborg University in 2012. He is an Assistant Professor in Department of Energy Technology at Aalborg University, Denmark, where he holds the position of Thermoelectric Research Programme Chair. His current research interests include fluid mechanics, thermal engineering with focus on micro heat transfer surfaces applied to thermoelectric modules, and integration of thermoelectric technology with renewable systems and sensor applications.