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Titolo	Exergy and Its Application : Toward Green Energy Production and Sustainable Environment // Edited by Muhammad Aziz
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Descrizione fisica	1 online resource (108 pages)
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Nota di bibliografia	Includes bibliographical references and index.
Sommario/riassunto	<p>Exergy has been defined as the maximum work that is useful, extracted from any process toward its equilibrium. Hence, it has a very strong connection with the second law of thermodynamics. In energy harvesting and management systems, the concept of exergy is very important because it represents the efficiency of the system. Exergy can be used as a tool to measure resource efficiency, as well as whole system sustainability. In addition, it can also be used to analyze and clarify the performance of each process; hence, methods of improvement can be determined. This book is the result of a very careful selection of chapters and contributors in the related field. The book is divided into three main sections according to the approaches and purpose of each proposed chapter. The first section is an introduction to the book. The second section, "Advanced energy conversions", describes several advanced technologies that are considered to have great potential in energy conversion and harvesting, and comprises three chapters focusing on photovoltaic/thermal systems with nanofluid, power-to-gas energy storage systems coupled with a combined cycle employing chemical looping combustion technology, and electromagnetic-based power generation. The third section focuses on the idea of "innovative energy management systems" toward high-quality energy systems. In this section, two</p>

different chapters describe the introduction of electric vehicles for demand-side energy management and the utilization of supercapacitors for very responsive energy storage in low-power modules. It is expected that this book will provide and enrich the state of the art in advanced energy systems, including energy conversion and management. All the chapters cover a broad range of disciplines, which are correlated in terms of the efforts toward efficient energy systems. In addition, the correlation between energy and exergy, and their understanding, are believed to be very important to improve energy efficiency and guarantee better energy quality.
