



Exergy: Production, Cost and Renewability (Green Energy and Technology)

By Silvio de Oliveira Junior



Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior

Bridging the gap between concepts derived from Second Law of Thermodynamics and their application to Engineering practice, the property exergy and the exergy balance can be a tool for analyzing and improving the performance of energy conversion processes. With the exergy analysis it is possible to evaluate the performance of energy conversion processes not only on a thermodynamics basis but also by including production costs and environmental aspects and impacts of the studied processes. This comprehensive approach of the use of energy has, as one of the most important feature, the identification of sustainable ways of energy resources utilization.

Based on the fundamentals of the exergy concept, its calculation, graphical representations and exergy balances evaluation, *Exergy: Production Cost And Renewability* describes the application of detailed exergy and thermoeconomic analysis to power plants and polygeneration systems, petroleum production and refining plants (including hydrogen production), chemical plants, biofuel production routes, combined production of ethanol and electricity, aircraft systems design, environmental impact mitigation processes and human body behavior.

The presented case studies aim at providing students, researchers and engineers with guidelines to the utilization of the exergy and thermoeconomic analysis to model, simulate and optimize real processes and industrial plants.

 [Download Exergy: Production, Cost and Renewability \(Green E ...pdf](#)

 [Read Online Exergy: Production, Cost and Renewability \(Green ...pdf](#)

Exergy: Production, Cost and Renewability (Green Energy and Technology)

By Silvio de Oliveira Junior

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior

Bridging the gap between concepts derived from Second Law of Thermodynamics and their application to Engineering practice, the property exergy and the exergy balance can be a tool for analyzing and improving the performance of energy conversion processes. With the exergy analysis it is possible to evaluate the performance of energy conversion processes not only on a thermodynamics basis but also by including production costs and environmental aspects and impacts of the studied processes. This comprehensive approach of the use of energy has, as one of the most important feature, the identification of sustainable ways of energy resources utilization.

Based on the fundamentals of the exergy concept, its calculation, graphical representations and exergy balances evaluation, *Exergy: Production Cost And Renewability* describes the application of detailed exergy and thermoeconomic analysis to power plants and polygeneration systems, petroleum production and refining plants (including hydrogen production), chemical plants, biofuel production routes, combined production of ethanol and electricity, aircraft systems design, environmental impact mitigation processes and human body behavior.

The presented case studies aim at providing students, researchers and engineers with guidelines to the utilization of the exergy and thermoeconomic analysis to model, simulate and optimize real processes and industrial plants.

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior Bibliography

- Rank: #3529127 in eBooks
- Published on: 2012-11-02
- Released on: 2012-11-02
- Format: Kindle eBook

 [Download Exergy: Production, Cost and Renewability \(Green E ...pdf](#)

 [Read Online Exergy: Production, Cost and Renewability \(Green ...pdf](#)



Download and Read Free Online Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior

Editorial Review

Review

From the reviews:

“The recent book ‘Exergy: Production, Cost and Renewability’ by Silvio de Oliveira Jr. provides a wide review of applications of exergy analysis to energy conversion processes. ... this book is an important contribution to the applications of exergy analysis. ... The book is well written and presented. It can be certainly recommended to students and researchers in energy and chemical technology.” (Krzysztof J. Ptasinski, Energy, 2013)

From the Back Cover

Bridging the gap between concepts derived from Second Law of Thermodynamics and their application to Engineering practice, the property exergy and the exergy balance can be a tool for analyzing and improving the performance of energy conversion processes. With the exergy analysis it is possible to evaluate the performance of energy conversion processes not only on a thermodynamics basis but also by including production costs and environmental aspects and impacts of the studied processes. This comprehensive approach of the use of energy has, as one of the most important feature, the identification of sustainable ways of energy resources utilization.

Based on the fundamentals of the exergy concept, its calculation, graphical representations and exergy balances evaluation, *Exergy: Production Cost And Renewability* describes the application of detailed exergy and thermoeconomic analysis to power plants and polygeneration systems, petroleum production and refining plants (including hydrogen production), chemical plants, biofuel production routes, combined production of ethanol and electricity, aircraft systems design, environmental impact mitigation processes and human body behavior.

The presented case studies aim at providing students, researchers and engineers with guidelines to the utilization of the exergy and thermoeconomic analysis to model, simulate and optimize real processes and industrial plants.

About the Author

Silvio de Oliveira Júnior is an Associate Professor at Polytechnic School of the University of São Paulo, Brazil. He has been developing research activities on heat pumps and refrigeration systems, solar energy, energy conservation in industrial processes, cogeneration systems and exergy and thermoeconomic analysis of thermal processes. He has supervised seven Doctor Thesis (in Mechanical Engineering), 16 Master Dissertations (in Mechanical Engineering, Automotive Engineering and Energy), 9 MBA in Energy and Cogeneration and Distributed Generation, and 69 Undergraduate Projects in Mechanical Engineering. He is author/co-author of about 190 publications and communications and senior member of the Brazilian Society

of Mechanical Sciences and Engineering. He is also member of the Editorial Board of the International Journal of Thermodynamics. He has been involved in the past ten years with research projects related to energy utilization in biodiesel production plants, sugar and alcohol utilities and production plants, offshore and onshore petroleum platforms, refinery utilities plants, production processes of petroleum derived fuels, co/trigeneration and combined cycle plants, airplane energy systems and modeling and simulation of twin-screw multiphase pumping systems.

Users Review

From reader reviews:

Bill Boyd:

Reading a guide can be one of a lot of pastime that everyone in the world adores. Do you like reading book consequently. There are a lot of reasons why people enjoyed. First reading a book will give you a lot of new data. When you read a guide you will get new information due to the fact book is one of various ways to share the information or even their idea. Second, reading a book will make a person more imaginative. When you examining a book especially hype book the author will bring someone to imagine the story how the characters do it anything. Third, it is possible to share your knowledge to others. When you read this Exergy: Production, Cost and Renewability (Green Energy and Technology), you are able to tells your family, friends and soon about yours book. Your knowledge can inspire the others, make them reading a guide.

Lorraine Woodward:

Do you have something that that suits you such as book? The publication lovers usually prefer to choose book like comic, limited story and the biggest you are novel. Now, why not trying Exergy: Production, Cost and Renewability (Green Energy and Technology) that give your entertainment preference will be satisfied by reading this book. Reading routine all over the world can be said as the way for people to know world far better then how they react towards the world. It can't be stated constantly that reading routine only for the geeky man but for all of you who wants to possibly be success person. So , for all of you who want to start examining as your good habit, you are able to pick Exergy: Production, Cost and Renewability (Green Energy and Technology) become your starter.

Lavone Anderson:

In this time globalization it is important to someone to receive information. The information will make you to definitely understand the condition of the world. The condition of the world makes the information much easier to share. You can find a lot of sources to get information example: internet, newspaper, book, and soon. You can see that now, a lot of publisher that will print many kinds of book. The particular book that recommended to you personally is Exergy: Production, Cost and Renewability (Green Energy and Technology) this reserve consist a lot of the information in the condition of this world now. This kind of book was represented how does the world has grown up. The words styles that writer require to explain it is easy to understand. The actual writer made some analysis when he makes this book. That is why this book appropriate all of you.

Jennifer Klein:

In this era which is the greater man or woman or who has ability in doing something more are more special than other. Do you want to become one of it? It is just simple strategy to have that. What you have to do is just spending your time little but quite enough to get a look at some books. One of the books in the top checklist in your reading list will be Exergy: Production, Cost and Renewability (Green Energy and Technology). This book and that is qualified as The Hungry Slopes can get you closer in turning into precious person. By looking upwards and review this book you can get many advantages.

Download and Read Online Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior #M8CWNIS45VL

Read Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior for online ebook

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior books to read online.

Online Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior ebook PDF download

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior Doc

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior Mobipocket

Exergy: Production, Cost and Renewability (Green Energy and Technology) By Silvio de Oliveira Junior EPub