

# Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering)

By Elias P. Gyftopoulos, Gian Paolo Beretta



Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta

Designed for both undergraduate and graduate students, this authoritative milestone in the foundational development of thermodynamics provides a unique reference for all physicists and engineers. Basic concepts and applications are discussed in complete detail with attention to generality and logical consistency, removing ambiguities and limitations of traditional presentations. Worked-out examples and end-of-chapter problems illustrate the use of energy and entropy balances as powerful analytical keystones in physics and engineering. The text provides material for undergraduate and graduate courses. At the introductory level, it covers heat engines, stable-equilibrium-state models for ideal-gas, incompressible-fluid and solid behaviors, heat, work and bulk-flow interactions, thermodynamic efficiency, energy conversion systems, energy, and availability/ At the intermediate level, it covers ideal and nonideal mixtures, chemical reactions, chemical equilibrium, and combustion.

At the advanced level, the unique non-traditional order of exposition of the basic concepts and principles (system, property, state, process, first law, energy, equilibrium, stable equilibrium, second law, entropy) allows rigorous general definitions of energy and entropy valid for all systems (large and small, few- and many- particles) and all states (stable and non-stable equilibrium, as well as non-equilibrium). In particular, entropy is defined before and independently of the definitions of temperature and heat, and of the simple-system model for many-particle systems.



## Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering)

By Elias P. Gyftopoulos, Gian Paolo Beretta

Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta

Designed for both undergraduate and graduate students, this authoritative milestone in the foundational development of thermodynamics provides a unique reference for all physicists and engineers. Basic concepts and applications are discussed in complete detail with attention to generality and logical consistency, removing ambiguities and limitations of traditional presentations. Worked-out examples and end-of-chapter problems illustrate the use of energy and entropy balances as powerful analytical keystones in physics and engineering.

The text provides material for undergraduate and graduate courses. At the introductory level, it covers heat engines, stable-equilibrium-state models for ideal-gas, incompressible-fluid and solid behaviors, heat, work and bulk-flow interactions, thermodynamic efficiency, energy conversion systems, energy, and availability/ At the intermediate level, it covers ideal and nonideal mixtures, chemical reactions, chemical equilibrium, and combustion.

At the advanced level, the unique non-traditional order of exposition of the basic concepts and principles (system, property, state, process, first law, energy, equilibrium, stable equilibrium, second law, entropy) allows rigorous general definitions of energy and entropy valid for all systems (large and small, few- and many- particles) and all states (stable and non-stable equilibrium, as well as non-equilibrium). In particular, entropy is defined before and independently of the definitions of temperature and heat, and of the simple-system model for many-particle systems.

### Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta Bibliography

• Sales Rank: #1313360 in Books

• Brand: Gyftopoulos, E. P./ Beretta, Gian Paolo

Published on: 2010-10-18Released on: 2010-09-20Original language: English

• Number of items: 1

• Dimensions: 9.21" h x 1.59" w x 6.14" l, 2.21 pounds

• Binding: Paperback

• 800 pages

**<u>Download</u>** Thermodynamics: Foundations and Applications (Dove ...pdf



Download and Read Free Online Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta

#### **Editorial Review**

About the Author

Elias P. Gyftopoulos received his doctorate in electrical engineering from MIT in 1958. He is MIT's Ford Professor Emeritus of Mechanical Engineering and of Nuclear Engineering. Gian Paolo Beretta was awarded a doctorate in engineering at MIT in 1981. A full Professor of Thermal Sciences at Brescia University, he is a frequent visiting professor at MIT.

#### **Users Review**

#### From reader reviews:

#### Pat Billings:

Reading can called imagination hangout, why? Because while you are reading a book especially book entitled Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) your thoughts will drift away trough every dimension, wandering in each aspect that maybe not known for but surely can be your mind friends. Imaging each word written in a reserve then become one web form conclusion and explanation that maybe you never get ahead of. The Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) giving you a different experience more than blown away the mind but also giving you useful details for your better life within this era. So now let us present to you the relaxing pattern the following is your body and mind is going to be pleased when you are finished reading it, like winning a game. Do you want to try this extraordinary wasting spare time activity?

#### **Gregory Goolsby:**

In this age globalization it is important to someone to get information. The information will make someone to understand the condition of the world. The healthiness of the world makes the information easier to share. You can find a lot of references to get information example: internet, newspaper, book, and soon. You can see that now, a lot of publisher which print many kinds of book. Often the book that recommended to your account is Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) this publication consist a lot of the information on the condition of this world now. This specific book was represented how does the world has grown up. The dialect styles that writer require to explain it is easy to understand. Typically the writer made some analysis when he makes this book. That's why this book ideal all of you.

#### **Antoinette Lefebre:**

In this era which is the greater man or who has ability in doing something more are more precious than other. Do you want to become one among it? It is just simple approach to have that. What you need to do is just spending your time almost no but quite enough to experience a look at some books. Among the books in the top list in your reading list is definitely Thermodynamics: Foundations and Applications (Dover Civil and

Mechanical Engineering). This book that is certainly qualified as The Hungry Slopes can get you closer in getting precious person. By looking upward and review this e-book you can get many advantages.

#### **Frances Pierce:**

As a scholar exactly feel bored in order to reading. If their teacher expected them to go to the library or make summary for some guide, they are complained. Just minor students that has reading's heart or real their leisure activity. They just do what the instructor want, like asked to go to the library. They go to at this time there but nothing reading critically. Any students feel that reading through is not important, boring and can't see colorful images on there. Yeah, it is being complicated. Book is very important in your case. As we know that on this era, many ways to get whatever we wish. Likewise word says, many ways to reach Chinese's country. Therefore, this Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) can make you truly feel more interested to read.

Download and Read Online Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta #6751HV9DG23

## Read Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta for online ebook

Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta 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 Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta books to read online.

### Online Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta ebook PDF download

Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta Doc

Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta Mobipocket

Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta EPub

6751HV9DG23: Thermodynamics: Foundations and Applications (Dover Civil and Mechanical Engineering) By Elias P. Gyftopoulos, Gian Paolo Beretta