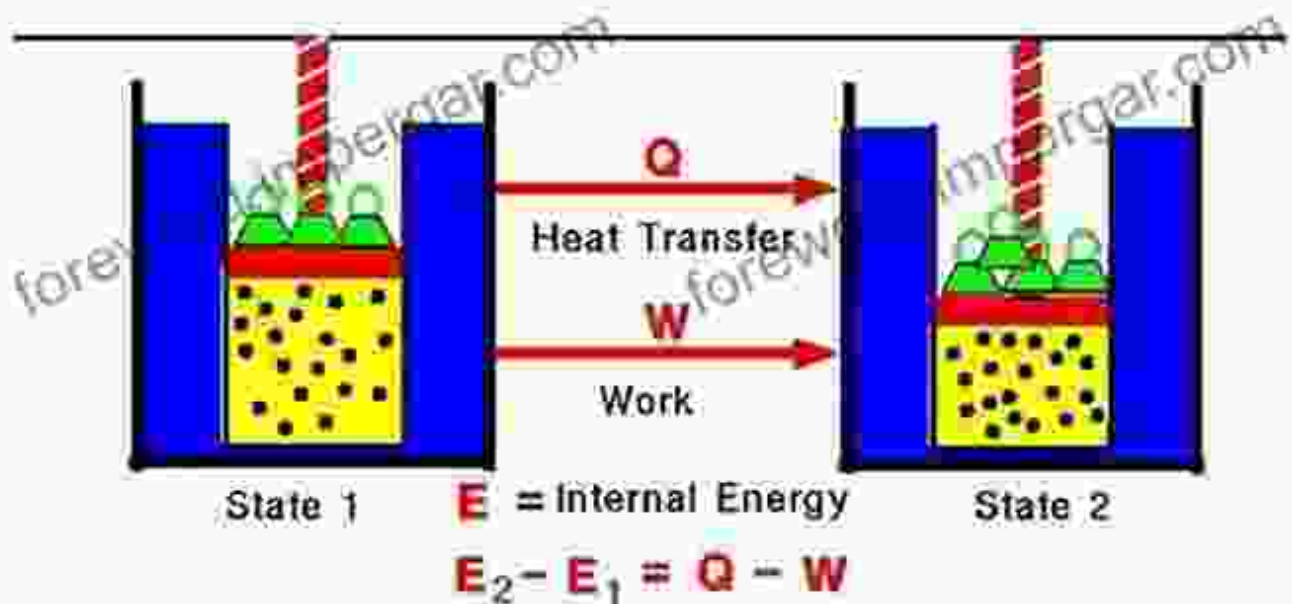


# **Non Equilibrium Thermodynamics And Physical Kinetics: Unraveling the Dynamic Realm**

Welcome to the captivating world of non equilibrium thermodynamics and physical kinetics, where the boundaries of our understanding of matter and energy are pushed to new frontiers. In this meticulously crafted textbook from De Gruyter, renowned experts delve into the profound concepts that govern these dynamic systems, offering a comprehensive exploration of the intricate interplay between thermodynamics, statistical mechanics, and transport phenomena.

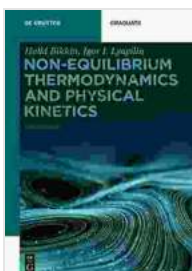
**Non Equilibrium Thermodynamics: A Framework for Understanding Dynamic Systems**

## First Law of Thermodynamics



Any thermodynamic system in an equilibrium state possesses a state variable called the internal energy ( $E$ ). Between any two equilibrium states, the change in internal energy is equal to the difference of the heat transfer into the system and work done by the system.

Non equilibrium thermodynamics forms the cornerstone of this textbook, providing a rigorous framework for analyzing systems that deviate from equilibrium. Through meticulous mathematical formulations and insightful interpretations, the authors elucidate the fundamental principles governing the behavior of matter and energy in these dynamic, ever-changing environments.



### Non-equilibrium Thermodynamics and Physical Kinetics (De Gruyter Textbook) by Masaaki Tachihara

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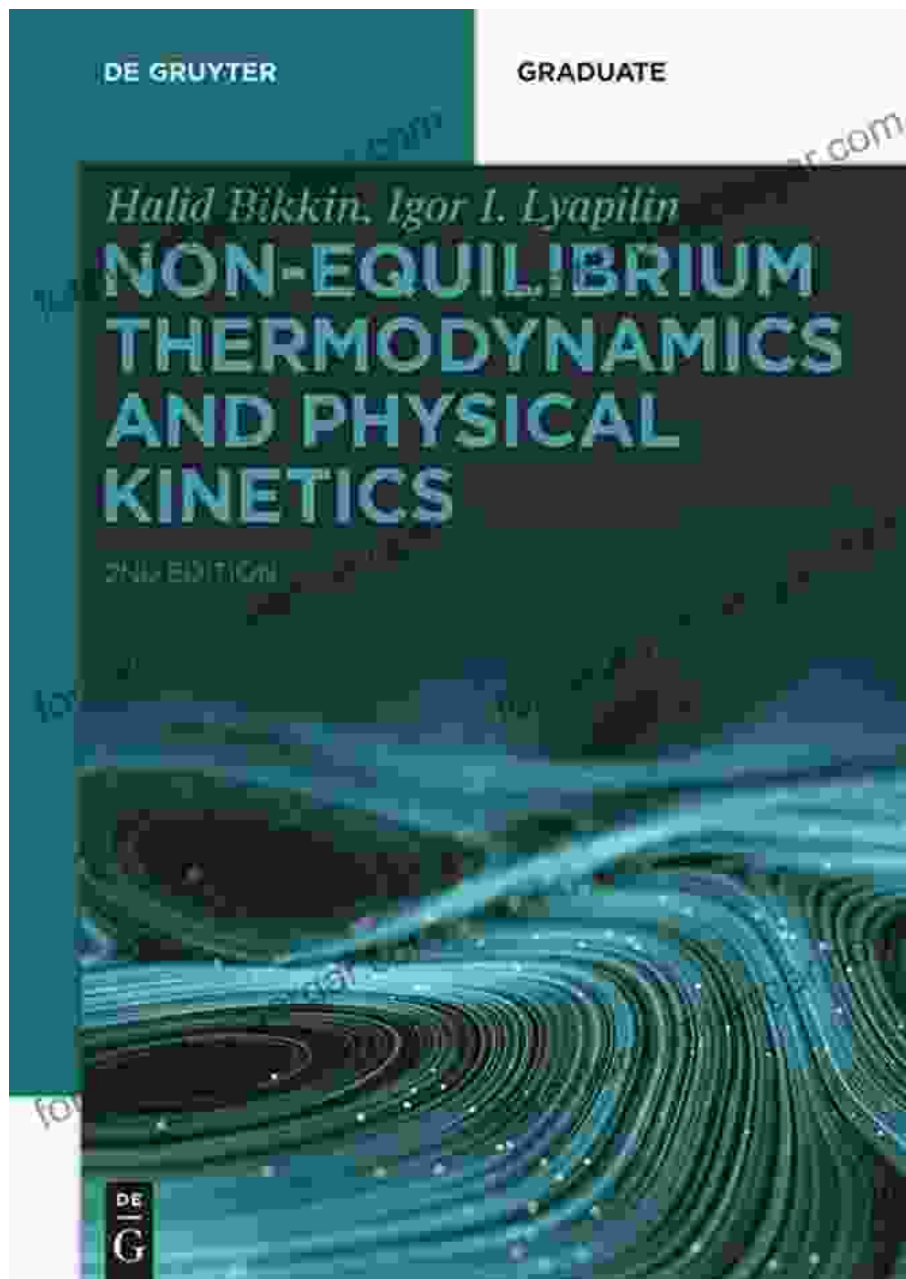
Language : English

File size : 21657 KB

Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Print length : 451 pages



## Physical Kinetics: Unveiling the Microscopic Origins of Macroscopic Phenomena



Physical kinetics complements non equilibrium thermodynamics by providing a microscopic perspective on the processes that drive macroscopic phenomena. The textbook masterfully blends statistical mechanics, quantum mechanics, and classical mechanics to unravel the intricate connections between microscopic interactions and macroscopic properties, offering a profound understanding of the underlying mechanisms shaping the behavior of systems in motion.

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The significance of non equilibrium thermodynamics and physical kinetics extends far beyond theoretical realms, finding practical applications in a wide spectrum of scientific disciplines, including:

- Materials science
- Chemical engineering
- Plasma physics
- Astrophysics
- Biological systems

### **Exceptional Features for Enhanced Learning**

This textbook stands out as an invaluable resource for students, researchers, and professionals seeking a comprehensive understanding of non equilibrium thermodynamics and physical kinetics. Its exceptional features include:

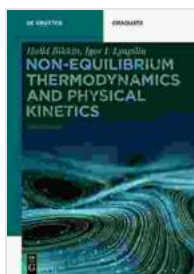
- **Clear and Concise Explanations:** Complex concepts are meticulously explained in a lucid and accessible manner, ensuring a smooth learning experience for readers of all levels.

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