



Thermodynamics: Fundamentals and Engineering Applications

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Thermodynamics is a mature science, where concepts and equations are well defined. Yet, recently developed experimental and numerical techniques allow us obtain high-frequency and high-resolution data in various fields of science. Hence, we gain new insight into physical phenomena and make connections between traditionally separate disciplines.

The power and beauty of thermodynamic laws is that they are able to explain many seemingly unrelated processes such as metabolic activities in brain cells, energy transfer in internal combustion engines or assessing the sustainability of manufacturing

processes. This, combined with the inherent complexity of thermodynamic concepts, makes teaching thermodynamics on the one hand extremely joyful and on the other hand inherently difficult.

The book *Thermodynamics: Fundamentals and Engineering Applications* explains complex concepts of thermodynamics in an easily accessible manner by first building a basic understanding of the microscopic behaviour of matter. This intuitive approach, alongside clear explanation of the mathematical equations, makes this book a very useful introductory resource for engineering students. The examples given in the book are derived from real-life engineering problems illustrating how basic concepts can be employed to find solutions to challenging global problems and leading to a deeper understanding of thermodynamics.

This textbook aligns well with the current needs of undergraduate students, who need to grasp fundamental concepts and make connections between interdisciplinary subjects to find innovative solutions.

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