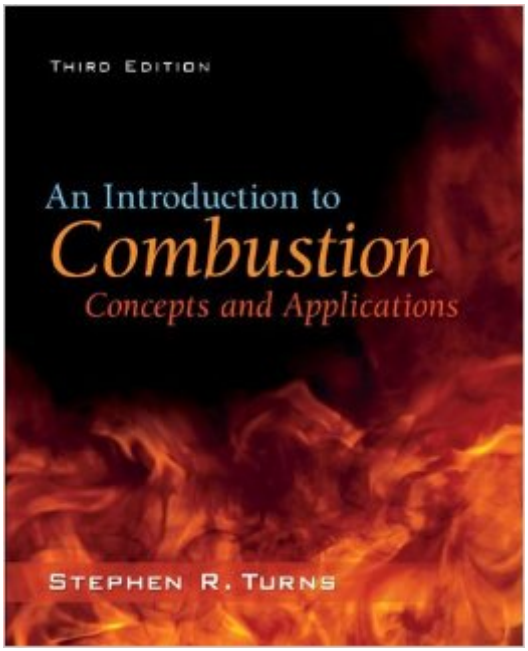
An Introduction To Combustion: Concepts And Applications



Synopsis

Introduction to Combustion is the leading combustion textbook for undergraduate and graduate students because of its easy-to-understand analyses of basic combustion concepts and its introduction of a wide variety of practical applications that motivate or relate to the various theoretical concepts. This is a text that is useful for junior/senior undergraduates or graduate students in mechanical engineering and practicing engineers. The third edition updates and adds topics related to protection of the environment, climate change, and energy use. Additionally, a new chapter is added on fuels due to the continued focus on conservation and energy independence.

Book Information

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Customer Reviews

IntroThis combustion textbook is a good place to go if you already have some knowledge in thermodynamics and a little chemistry, and want to extend that knowledge into the world of combustion.**The Contents**There is a little bit of everything in this book. You learn how to calculate with metrics that are unique to combustion, like the Lower Heating Value, Higher Heating Value, Adiabatic Flame Temperature, etc. You can read about how to apply thermodynamic laws to combustion applications, with things like Gibbs free energy minimization. Reaction kinetics are addressed, drawing on mathematics that are also applicable to other chemical reactions that aren’t necessarily combustion reactions, so this knowledge is extendable to chemical engineering. There are also things about reaction mechanisms, flame lengths, flame quenching, different types of combustion engines, the fluid dynamics that occur in flames, liquid droplet and solid fuel

combustion, NOX formation, other combustion pollutants, and even a little about detonation. Finally, there are a lot of useful tables in the back. Though these tables may not contain everything, if you need to go more into depth with looking up properties, there are some good websites for that like NIST, NASA Thermobuild, and others. Many of the subjects covered in the book are like that too, short, not necessarily exhaustive or even comprehensive. They are concise, and contain only what you really need. I don't think the brevity is necessarily a shortfall, the book is called An **Introduction** to Combustion after all.**The Limitations**Once you study this book, on your own, or as part of a college class, if your goal is to get an M.S.