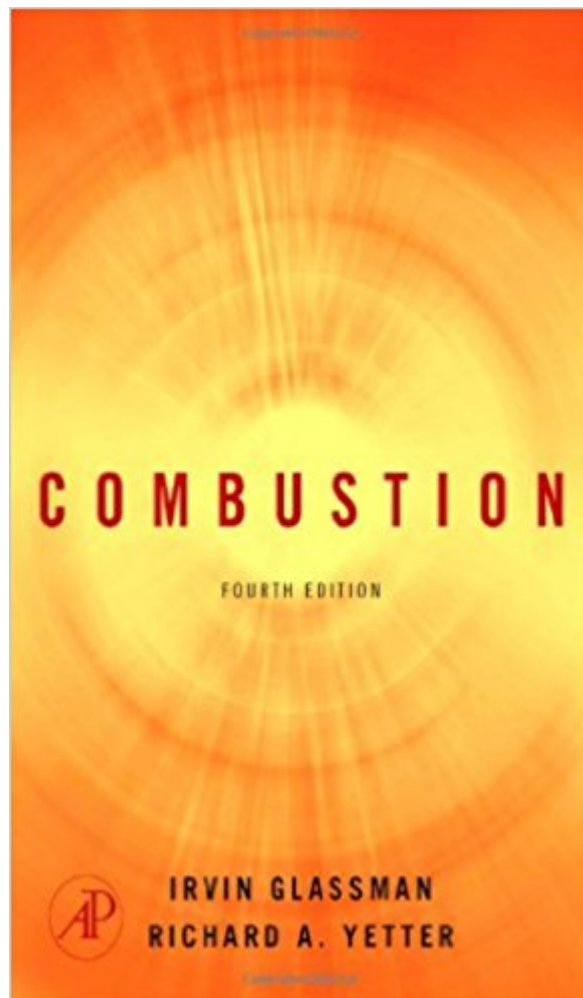


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# Combustion, Fourth Edition



## Synopsis

Combustion Engineering, a topic generally taught at the upper undergraduate and graduate level in most mechanical engineering programs, and many chemical engineering programs, is the study of rapid energy and mass transfer usually through the common physical phenomena of flame oxidation. It covers the physics and chemistry of this process and the engineering applications from the generation of power such as the internal combustion automobile engine to the gas turbine engine. Renewed concerns about energy efficiency and fuel costs, along with continued concerns over toxic and particulate emissions have kept the interest in this vital area of engineering high and brought about new developments in both fundamental knowledge of flame and combustion physics as well as new technologies for flame and fuel control. \*New chapter on new combustion concepts and technologies, including discussion on nanotechnology as related to combustion, as well as microgravity combustion, microcombustion, and catalytic combustion call interrelated and discussed by considering scaling issues (e.g., length and time scales). \*New information on sensitivity analysis of reaction mechanisms and generation and application of reduced mechanisms \*Expanded coverage of turbulent reactive flows to better illustrate real-world applications \*Important new sections on stabilization of diffusion flames. For the first time, the concept of triple flames will be introduced and discussed in the context of diffusion flame stabilization

## Book Information

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## Customer Reviews

"This book has now become one of the most important textbooks and teaching aids to combustion. It will remain as a record of the great debt that combustion science and technology owes to the teachings of Professor Glassman."--INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER --This text refers to the Paperback edition.

Dr. Irvin Glassman received both his undergraduate and graduate degrees in Chemical Engineering from The Johns Hopkins University. In 1950 he joined Princeton University, and is currently Robert H. Goddard Professor of Mechanical and Aerospace Engineering. He has also been American Cyanamid Professor of Environmental Sciences and Director of Princeton's Center for Energy and Environmental Studies. For 15 years Dr. Glassman represented the United States as a member (and former chairman) of the Propulsion and Energetics Panel of AGARD/NATO. He has been a member of numerous committees, task forces, and research teams, and is currently a member of The National Academy of Engineering and many other professional and honorary societies. Dr. Glassman is listed in Who's Who in America, Who's Who in the World, Outstanding Educators of America, and American Men of Science.

Bought for a class. Book was very well written with lots of commentary and history that make the subject more interesting.

Very much satisfied with this purchase. This unit is exactly like a new one, though it's a used one. I'm happy.

An excellent book has a lot of information about combustion, from theoretical formulation to practical problem explanation, and useful tables of data.

Excellent if you are interested in combustion kinetics. It is a good addition to the books from Warnatz and Poinso.

A+

Everything you need to know, but hard reading as extremely dry text. Plenty of problems to work through, but no worked examples or answers. Large appendix section full of helpful tables of

properties

This book is one of the few good books not only on the subject of combustion, but also in general. The writer's style is fascinating and explanatory. This is a combustion book which gives emphasis not only on the thermo-fluid aspect of combustion encountered in premixed and diffusion flames, but also devotes two chapters on the chemical principles of hydrocarbon oxidation and pollutant formation. The mathematical formulations of the phenomena analysed are of course presented (chemical reaction mechanisms, flame propagation, diffusion flames, ignition, detonation etc). More importantly, however, the writer achieves to enhance the reader's physical and chemical intuition on the subjects analysed, be it flames, hydrocarbon oxidation or pollutant formation. Moreover, the appendices are a source of a great amount of data, ranging from bond dissociation energies, to thermophysical properties, flammability limits, autoignition temperatures, reaction rate constants, etc. The fact that this book has been cited in almost every other book on combustion is, of course, not coincidental. An inspiring book.

this is the right book for combustion with in depth subject. go for it!

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