



# Applied Gas Dynamics

By Ethirajan Rathakrishnan

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In *Applied Gas Dynamics*, Professor Ethirajan Rathakrishnan introduces the high-tech science of gas dynamics, from a definition of the subject to the three essential processes of this science, namely, the isentropic process, shock and expansion process, and Fanno and Rayleigh flows. The material is presented in such a manner that beginners can follow the subject comfortably. Rathakrishnan also covers the theoretical and application aspects of high-speed flows in which enthalpy change becomes significant.

- Covers both theory and applications
- Explains involved aspects of flow processes in detail
- Provides a large number of worked through examples in all chapters
- Reinforces learning with concise summaries at the end of every chapter
- Contains a liberal number of exercise problems with answers
- Discusses ram jet and jet theory -- unique topics of use to all working in the field
- Classroom tested at introductory and advanced levels
- Solutions manual and lecture slides available for instructors

*Applied Gas Dynamics* is aimed at graduate students and advanced undergraduates in Aerospace Engineering and Mechanical Engineering who are taking courses such as Gas Dynamics, Compressible Flows, High-Speed Aerodynamics, Applied Gas Dynamics, Experimental Aerodynamics and High-Enthalpy Flows. Practicing engineers and researchers working with high speed flows will also find this book helpful.

Lecture materials for instructors available at <http://www.wiley.com/go/gasdyn>

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### Editorial Review

#### Review

"He begins this single-authored text with basic facts: definitions, supersonic flow, speed of flow, temperature rise, Mach angle, thermodynamics of fluid flow, and so on. Subsequent chapters address steady one-dimensional flow, normal shock waves, oblique shock and expansion waves, compressible flow equations, similarity rule, and two-dimensional compressible flows, among other topics, ending with chapters on ramjet, and jets. Each chapter concludes with a summary and exercise problems." (*SciTech Book News*, December 2010)

#### From the Back Cover

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