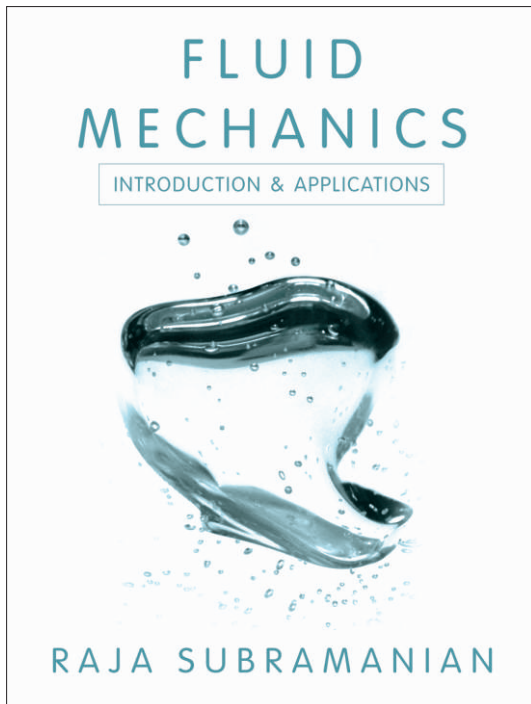


FLUID MECHANICS: INTRODUCTION & APPLICATIONS

Raja Subramanian



Fluid mechanics is used in several fields of engineering, including aeronautics, astronautics, mechanical, automobile, civil, production and others. In this book the subject of fluid mechanics is presented in simple language. It covers the basic theory of fluid mechanics that is required for application in advanced research in fluid dynamics.

The book can be used as a text by students studying the subject at the undergraduate level. It will also be useful as self-study or as a reference book in research activities in the fields of engineering.

Raja Subramanian, M.S., Ph.D., (Materials Science and Engineering), University of Illinois, USA, has taught courses in mechanical production and automobile engineering departments in several engineering colleges in Tamil Nadu. This book is the result of his interest and expertise in the field of computational fluid dynamics, finite element analysis and computer graphics.

KEY FEATURES

- Incompressible fluid flow described in detail
- Simple and straightforward discussion of basic principles, governing equations and numerical computation
- Includes characteristics of fluids and control volume formulation of governing law of fluid motion
- Eulerian and Lagrangian description of fluid flow
- Includes Navier Stokes, Euler's and Bernoulli's equations
- Worked examples at the end of each chapter

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1. Introduction
2. Governing Laws of Fluid Motion
3. Stream Lines in Fluid Flow
4. Types of Fluid Flow
5. Description of Fluid in Motion
6. Fluid Flow in terms of Complex Numbers
7. Governing Equations of Fluid Flow
8. Applications of Fluid Mechanics
9. Measurement of Pressure in Fluid Flow Systems
10. Fluid Flow in Pipes
11. Dimensional Analysis
12. Turbines