The boundary element method (BEM) is a modern numerical technique which has enjoyed increasing popularity over the last two decades, and is now an established alternative to traditional computational methods of engineering analysis. The main advantage of the BEM is its unique ability to provide a complete solution in terms of boundary values only, with substantial savings in modelling effort.

This two-volume book set is designed to provide the readers with a comprehensive and up-to-date account of the boundary element method and its application to solving engineering problems. Each volume is a self-contained book including a substantial amount of material not previously covered by other textbooks on the subject. Volume 1 covers applications to heat transfer, acoustics, electrochemistry and fluid mechanics problems, while volume 2 concentrates on solids and structures, describing applications to elasticity, plasticity, elastodynamics, fracture mechanics and contact analysis. The early chapters are designed as a teaching text for final year undergraduate courses. Both volumes reflect the experience of the authors over a period of more than twenty years of boundary element research.

This volume, Applications in Thermo-Fluids and Acoustics, provides a comprehensive presentation of the BEM from fundamentals to advanced engineering applications and encompasses:

- Steady and transient heat transfer
- Potential and viscous fluid flows
- Frequency and time-domain acoustics
• Corrosion and other electrochemical problems.

A unique feature of this book is an in-depth presentation of BEM formulations in all the above fields, including detailed discussions of the basic theory, numerical algorithms and practical engineering applications of the method.

Written by an internationally recognised authority in the field, this is essential reading for postgraduates, researchers and practitioners in civil, mechanical and chemical engineering and applied mathematics.

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**ABOUT THE AUTHOR**


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