Preface

This book was written as a textbook or guidebook on fluid mechanics for students or junior engineers studying mechanical or civil engineering. The recent progress in the science of visualisation and computational fluid dynamics is astounding. In this book, effort has been made to introduce students/engineers to fluid mechanics by making explanations easy to understand, including recent information and comparing the theories with actual phenomena.

Fluid mechanics has hitherto been divided into 'hydraulics', dealing with the experimental side, and 'hydrodynamics', dealing with the theoretical side. In recent years, however, both have merged into an inseparable single science. A great deal was contributed by developments in the science of visualisation and by the progress in computational fluid dynamics using advances in computers. This book is written from this point of view.

The following features are included in the book:

1. Many illustrations, photographs and items of interest are presented for easy reading.
2. Portrait sketches of 17 selected pioneers who contributed to the development of fluid mechanics are inserted, together with brief descriptions of their achievements in the field.
3. Related major books and papers are presented in footnotes to facilitate advanced study.
4. Exercises appear at the ends of chapters to test understanding of the chapter topic.
5. Special emphasis is placed on flow visualisation and computational fluid dynamics by including 14 colour plates to assist understanding.

Books and papers by senior scholars throughout the world are referenced, with special acknowledgements to some of them. Among these, Professor R. F. Boucher, one of my oldest friends, assumed the role of editor of the English edition and made numerous revisions and additions by checking the book minutely during his busy time as Principal and Vice-Chancellor of UMIST. Another is Professor K. Kanayama of Musashino Academia Musicae who made many suggestions as my private language adviser. In

addition, Mr Matthew Flynn and Dr Liz Gooster of Arnold took much trouble over the tedious editing work. I take this opportunity to offer my deepest appreciation to them all.

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