However, there are a few points which this reviewer feels should be taken into consideration, namely:

(1) It would be preferable to focus on specific relevant issues and publish it quarterly rather than have all the articles printed annually in one heavy volume (which is also, from a practical point of view, somewhat cumbersome to carry).
(2) Some of the articles written are not suitable to consider as review papers, since they do not give an overview on the specific topic.
(3) Some important methods such as the spectral method (it is rather disconcerting that there is no paper on pure spectral method!), finite element and visualization methods (there is only one paper written on this increasingly important field) have been inadequately represented.

The book should be of interest to computational mechanics experts engaged in developing CFD techniques, as well as to scientists and engineers who wish to use these techniques in order to solve their flow problems. The book can also serve as a library reference book.

PINHAS Z. BAR-YOSEPH
Computational Mechanics Laboratory
Faculty of Mechanical Engineering
Technion—Israel Institute of Technology
Haifa 32000
Israel

Physicochemical Hydrodynamics, 2nd edn, R. F. Probstein. John Wiley & Sons, New York (1994). ISBN 0-471-01011-1.

The field of physicochemical hydrodynamics (PCH) encompasses a vast spectrum of interdisciplinary topics in which fluid flow fields interact with particulate systems, chemical reactants, electrical fields, thermal fields, etc.

Diverse physical phenomena such as electrophoresis, electroosmosis, gel-chromatography, filtration, diffusion, sedimentation, coating and suspension stability underlie many industrial processes and are thoroughly described in the book. The book's second edition also introduces topics in rheology of concentrated suspensions, hydrodynamic chromatography, chemical reaction in electrokinetics and surface tension induced convection.

The book is rationally edited and 'user-friendly'. Every chapter can be read with very little reference to previous chapters and almost none to following chapters. The author's main goal is to stress the relevance of a given problem to many different industrial processes, emphasizing the underlying common basic physical concepts. Toward this end, he analyzes the competing forces that govern a process and the resulting non-dimensional parameters that determine the relative significance of the various physical mechanisms. The non-dimensional parameters are evaluated with real-life data pertaining to well established processes. Consequently, the assumptions made are sensible and well founded. The ensuing mathematical treatment is very clearly and accurately presented. It is, however, of lesser concern and in many cases the interested reader is referred to published references for in depth analysis. The problem sections following the main body of every chapter make the book useful as a graduate text. The problems are interesting and serve to further the reader's knowledge and enhance his or her understanding of the preceding chapters.

The writing style of Professor Probstein makes the book a pleasure to read. Readability and clarity are paramount and stem from the logical and simple wording and the short sentences that the author employs (in certain cases the formal English language is sacrificed on this altar). Notwithstanding, this is no book for beginners. Previous knowledge of low Reynolds number hydrodynamics is expected. A good grasp of basic concepts in electrostatics, thermodynamics and chemistry is also desirable.

In summary, the book is highly recommended for graduate students and scientists interested in the many facets of physicochemical hydrodynamics. Professor Probstein has successfully presented a comprehensive study of this complex field and has beautifully elucidated the underlying physical and mathematical similarity that exists between diverse PCH phenomena.

SHIMON HABER
Department of Mechanical Engineering
Technion—Israel Institute of Technology
Haifa 32000
Israel