and in solution, and represent an important extension of the study of organic reaction mechanisms. In these chapters, thermodynamic data for both positive and negative polyatomic ions are presented and the gas-phase ion-molecule reactions of organic ions are classified on the basis of their mechanism. Stereochemical, steric, and acid-base (proton-transfer) phenomena are described and related to the corresponding phenomena observed in the liquid phase, where solvation of the ions is a significant factor. Ion-cluster formation in the gas phase, which relates to the transition between gas-phase and liquid-phase behavior, is the subject of a separate chapter.

This book will obviously be of most immediate value to those directly concerned with the kinetics of ion-molecule reactions, but it will certainly be of great interest to physical organic chemists and a very useful addition to the libraries of those working in the other areas where ion-molecule reactions play an important role.

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Boiling Phenomena

Editors	Sjoerd van Stralen and Robert Cole
Publisher	Hemisphere Publishing Corporation (1979)
Pages	945 (2 volumes)
Price	$85.00 for 2 volumes
Reviewer	Robert S. Wick

This two-volume collection is primarily addressed to the researcher in boiling phenomena as contrasted to an earlier volume published in 1978 by the same publisher, *Two-Phase Flows and Heat Transfer with Application to Nuclear Reactor Design Problems*, J. J. Genoux, Ed. Consequently, it will be of interest to a much wider audience than nuclear engineers. For example, there is considerable discussion of binary and ternary systems, pool boiling, and even electrolysis. The book, a collection of papers by 17 contributors, is very logically organized into 13 sections with considerable emphasis on basic phenomena as contrasted to design, this being the stated objective of the editors.

The main topics are nucleation, film and nucleate boiling, bubble growth, heat transfer, electrolysis, and thermodynamics. The contributors to the various sections include a cross section of European experts. The editors each have major contributions worthy of separate note. Van Stralen, after a general well-illustrated survey of boiling phenomena, has two contributions to heat transfer to boiling of pure liquids, and to binary and ternary systems. These are followed by separate detailed papers on detailed discussions of the topics of bubble growth, geometrical considerations, boiling at liquid-liquid interfaces, and even some of the problems associated with skim milk and cryogens. These bubble growth contributions take over 100 pages. Cole's contribution includes a further survey on nucleate boiling as well as an extensive series of review articles on nucleation phenomena. Certainly, these papers by the editors represent a major contribution to the total collection.

One of the attractive features of this collection is the way the reader can selectively go from the simpler aspects (if indeed these exist) of the subject to the more complex, each treated separately with a reasonably up-to-date collection of references. While the book probably would not be suitable as a textbook, the reviewer could envision graduate-level students being assigned one of the special topic papers for review and perhaps presentation at a seminar. The surveys by the editors, mentioned above, would make excellent supplemental reading for a course and could be considered as the nucleus for a course in boiling phenomena. Certainly, the book would represent an excellent place to start surveying the current research in the areas mentioned above. This work certainly deserves a place on the researcher's bookshelf and in the reference library of the educational institution.

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