

Pages ix plus 448 (including a 26-page index)

Price \$19.00

Reviewer A. Boltax

The editors of this book have assembled material that was the outgrowth of a UCLA Engineering Extension Division short course entitled "Ceramics for Aerospace Technology." The lectures and additional material are presented in two books, *Ceramics for Advanced Technologies* (reviewed here) and *Modern Ceramics: Some Principles and Concepts*. The editors acknowledge a small amount of overlapping among the subjects presented in the two books.

*Ceramics for Advanced Technologies* can be discussed by dividing the contents into two parts. The first part treats various classes of ceramic materials (oxides, graphite, intermetallics, glass, and selected refractory composites) and emphasizes the relationship between microstructure, fabrication techniques, and properties. The second part examines applications of these materials to some of the more advanced technologies such as re-entry, rocket nozzles, nuclear reactors, energy conversion systems, and space environment effects. In general, the material in both sections is introductory in nature and would be useful to students or engineers interested in a broad prospectus of the field of ceramics and advanced applications. The book, prepared by 13 authors, is well written and can be read quite rapidly, since it does not penetrate the subject matter in great detail. Although much of the information presented is relatively current (to 1964), the rapid growth of information in related fields will soon outdate the book. One particularly attractive feature of the book is an excellent index which should be useful to the non-ceramics-oriented individual who is faced with the prospect of learning the language of ceramics.

For the materials engineer interested in expanding his knowledge of ceramics, and the sophisticated design engineer, this reviewer recommends the other book, *Modern Ceramics: Some Principles and Concepts*, prepared by the same editors and publisher. This book has the same good features of the first book and has considerably greater technical content. *Modern Ceramics*: etc. does not cover ceramic applications, but its treatment of basic phenomena, fabrication, test techniques, and properties is presented in a highly competent and interesting manner. It also is backed up by fairly extensive references which would aid more detailed studies.

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## EXCELLENT AND USEFUL

Title Boiling Heat Transfer and Two-Phase Flow

Author L. S. Tong

Publisher John Wiley & Sons, Inc., 1965

Pages xiii + 242

Price \$14.00

Reviewer P. Griffith

This book does two things of value for the person working on the hydraulic design of water-cooled nuclear reactors. It looks into the physics of the processes of boiling, void formation, burnout, and pressure drop, and collects the currently-used equations for computing these quantities. The value of this book to a reactor designer is enhanced by the up-to-date bibliography. Though there are equations which can be used for fluids other than water, the bulk of the data and most of the equations are only appropriate for water at elevated pressures. Except for hydraulic stability, all the questions a reactor designer is likely to ask about hydraulic design are answered in this book in some form.

One question which almost every designer using the book will have to face is: Which of the several ways given to compute something is best? In general, more than one way is given with only broad guidance as to when each method is to be used. This makes use of the book difficult. If this is a criticism, it is more of a criticism of the field than the book, however, as most of the authors of correlations do not clearly state the limitations of them, nor do they compare their results with anyone else's.

In summary, this is a useful book of current interest to the designer of water-cooled nuclear reactors and an excellent introduction for someone just entering the field.

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## SHOW ME — AND THEY DID

Title Remote Handling of Mobile Nuclear Systems

Authors D. C. Layman and G. Thornton