Pe = Peclet number
W = unknown function, $W = rZ$
Z = dimensionless temperature, $Z = (T - T_\infty)/(T_o - T_\infty)$
θ = polar angle
Δt = step length in the time direction
Δr = step length in the radial direction
$\Delta\theta$ = angular step size
τ = dimensionless time.

LITERATURE CITED

Abramzon, B., and I. Borde, "Conjugate Unsteady Heat Transfer from a Droplet in Creeping Flow," *AIChE J.*, **26**, 536 (1980).
Cooper, F., "Heat Transfer from a Sphere to an Infinite Medium," *Int. J. Heat Mass Transfer*, **26**, 991 (1977).

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BOOKS

Principles of Polymer Systems, Second Edition, Ferdinand Rodriguez, McGraw-Hill, 1982, 575 pages, $29.95, solutions manual available

On the general subject of polymers, this book is encyclopedic, with topics that would interest the polymer morphologist, chemist, and physicist, and rheologist, the manufacturer, and the design engineer. It therefore is very useful to the chemical engineer who wants exposure to a variety of polymer topics.

The first edition of this book, published twelve years ago, has proven extremely popular as a textbook and also as an initial reference book. This second edition is even better. But if you own the first edition, should you purchase the second? Many things remain the same, including chapter headings and subheadings and the total number of pages. But because of type compression and a greater number of lines per page, there are roughly 25% more words in the new edition. This word increase does not result from any chapter addition but rather appears to be spread throughout the book. It is clear that Rodriguez has done a careful job with this new revision. The lists of general references at the conclusion of each chapter have been updated and, more importantly, expanded fivefold. And most educators will appreciate the slight increase in the number of problems and the complete shift to metric units.

For those who do not own the first edition, yes, you should purchase the second edition if you are interested in polymers. The book possesses several particularly attractive features: (1) extensive breadth, including fifteen chapters covering such topics as structure and morphology, polymerization reactions and processes, viscoelastic properties, ultimate properties, degradation characteristics, and fabrication processes, (2) excellent figures and quantitative problems, (3) lucid prose and process description, (4) laboratory exercises, and (5) excellent lists of "General References" on each chapter topic. The first four features are central to its primary intended function as a textbook for junior and senior-level students and the reference lists allow the practicing engineer to use this as an initial reference text.

Some readers might prefer a greater depth of treatment on particular topics but this would detract from the nice balance Rodriguez has struck on depth and breadth. If one were allowed only one book on polymers, this would be the one to have.

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Nuclear Chemical Engineering, 2nd. Ed., Manson Benedict, Thomas Pigford and Hans Levi, McGraw-Hill Book Company, New York, (1981), 1008 pages, $37.95.

When the first edition of this text (by the first two authors) appeared almost a quarter century ago in 1957, it was a time of rapid technological change. The second edition is written at a time of mature and consolidated technology and is in the authors words, "an entirely new book, following the first edition only in its general outline." There are some sections of chapters which are almost unchanged from the first edition, e.g., distillation and cascade analysis. The size of the book has almost doubled from 573 to 983 pages, while the number of chapters has gone from 12 to 14. These are: 1. Chemical Engineering Aspects of Nuclear Power; 2. Nuclear Reactions; 3. Fuel Cycles for Nuclear Reactors; 4. Solvent Extraction of Metals; 5. Uranium; 6. Thorium; 7. Zirconium and Hafnium; 8. Properties of Irradiated Fuel and Other Reactor Materials; 9. Plutonium and Other Actinide Elements; 10. Fuel Reprocessing; 11. Radioactive Waste Management; 12. Stable Isotopes: Uses, Separation Methods and Separation Principles; 13. Separation of Isotopes of Hydrogen and Other Light Elements; and, 14. Uranium Isotope Separation. Chapters 1–4, 8, 10, and 14 basically update Chapter 1–3, 6–8, and 12; Chapters 5, 6, and 7 expand considerably Chapters 4 and 5; and, Chapters 12 and 13 update and reorganize Chapters 9, 10, and 11 of the first edition. Chapters 9 and 11 are new. Each chapter has its own nomenclature, references, and problems as previously, but the number of problems are fewer, indicating the encyclopedic reference rather than didactic nature of the text. The chapter on Nuclear Waste Management appears to be quite up-to-date. Some figures are retained from the first edition, but most are new or redrawn. The mixture of English, cgs and SI units is sometimes jarring with pressure in Torr *and* psia on the same page, neither of which are SI units. Considering the effort of producing such a book, a little extra effort could have gone into consistent units. Conversion tables are supplied and dual units are frequent, however.

Engineers and scientists working in this area of the nuclear industry will want to have this text as a reference tool since it comprehensively covers the technologies and their scientific, nuclear and chemical principles.

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Heat Transfer Engineering, Hemisphere Publishing Corp. 1025 Vermont Ave., N.W., Washington, D.C.-20005, 19 W. 44th St., New York-10036. (An international quarterly journal founded in 1979). Annual subscriptions are $18 for individuals or $40 for Institutions.

The editorial organization includes Western Europe and USA equally, with

Kenneth Bell, editor-in-chief, and Geoffrey Hewitt, Ernst Schlunder and Jerry Taborek as other founding editors, all front runners in the field. Backing them are a dozen Associate Editors and publisher William Begell, an experienced heat transfer engineer himself, and now, through Hemisphere, in collaboration with McGraw-Hill.

With differing degrees of curiosity and expectation, a corps of heat transfer workers and users, and an elite of commercial department managers, consultants and professors awaited the appearance of *HTE*. All found things that would interest them.

The first issue contains 64 pages of some 650 words per full page, built around a core of three utilitarian heat exchanger design articles on evolving techniques, plate-type heat exchanger improvements, and temperature distributions in baffled, shell-and-tube units. These average some 15 pages each. In addition, a dozen one to three page "departments", including two editorials, several personality outlines, a historical background, an imaginative heat transfer travelogue, book reviews by Ralph Webb, and a calendar of future heat transfer meetings, plus several pages each of advertising of heat transfer books and commercial equipment, round out the issue.

Taking stock at this point we see an attractive, readable and useful quarterly, loaded with professional talent, but primarily an "insiders" forum. And an expectation or capacity of a dozen or so articles per year would seem insufficient to activate or to maintain the interest of the available readership in depth, or particularly to expand it and increase the journal's impact on the profession.

However, we can't write off the capability of the personnel and the flexibility of the concept to further adapt the journal's format and contents towards its total environment, if necessary to achieve fairly promptly its presumed objective of speaking to and for the profession. This dictated against concluding this review with the first issue. But studying all issues through Volume 2, No. 1 (thru Sept. 1980) shows minimal change. The number of feature articles increased from three to five, but their total pages increased only 10%. The departments increased by several, but not significantly. The most substantial change was the increase in total pages, due to more advertising.

Evidently *HTE* for the foreseeable future can be expected to remain similar to the initial issue, and I will continue to read it carefully, both for its practical heat transfer engineering content, and to divine any new trends being tried out or adopted for the future.

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LETTER TO THE EDITOR

To the Editor:

It was a bit depressing to see the long article by Dr. Greenkorn on "Steady Flow Through Porous Media" [*AIChE J.*, 27 529 (1981)] dealing largely in theory and models many of which are known to be incompatible with the reservoir rocks. Without including the concept of alternately enlarging and contracting cross sections of flow channels one is overlooking the most important aspect of rocks.[1] The concept of matching the threshold displacement pressure scan when a wetting fluid is displaced by a non-wetting fluid[2] are types of experiments which might be noted when selecting models.

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