BOOKS

Direct Characterization of Fineparticles, by Brian H. Kaye, published by John Wiley and Sons, (1981), 398 pages, $60.

This book is Volume 61 of "Chemical Analysis—A Series of Monographs on Analytical Chemistry and its Applications", with P. J. Elving and J. D. Winefordner as editors. The author, Brian H. Kaye, is professor of physics at Laurentian University (Sudbury, Ontario, Canada) and has served as director of the Institute for Fineparticles Research and chairman of the Physics Department at Laurentian University. Two more volumes are promised, Indirect Characterization of Fineparticles and a workbook covering both texts which would describe laboratory experiments and illustrate sample calculations in fineparticle characterization.

The book consists of a Glossary of New Terms (very necessary in this relatively new field), an Author Index, a Subject Index, and 10 chapters covering basic concepts, powder/suspension and aerosol sampling, and various methods of direct characterization of fineparticles. It is tightly written and illustrated in that a large amount of information is presented in a small space. Thus, in addition to having a good background in basic physics, it is incumbent on the reader to bring an open mind and a willingness to take time to think things out in order for him/her to derive maximum benefit from this book. An increasing number of chemical engineers, other engineers, and scientists are working in processes involving fineparticles. As in other technological fields, characterization is one of the first requirements necessary to advance and work productively in the field. This book and the two forthcoming volumes are long overdue. It may seem high-priced at 15 cents/page, but the book's quality more than justifies the cost.

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Drying '82, A. S. Mujumdar, Editor, Hemisphere Publishing Corp., Washington, 1982, 254 pages, $70.

This volume is a collection of invited and contributed articles on various aspects of drying. It continues what appears now to be a serial publication on the subject. Two years ago *Drying '80* appeared in two volumes, one of which was the Proceedings of the *Second International Drying Symposium* held in Montreal. There are some thirty-seven (37) articles organized into eight sections: (1) Drying Theory, Modeling and Control, (2) Drying of Particulate Solids, (3) Drying of Continuous Sheets (4) Energy Aspects In Drying, (5) Simulation of Drying, (6) Spray Drying, (7) Drying of Foodstuffs and Grains, and (8) Miscellaneous Topics. There are contributors and subject indices. The editor's objective is to "provide a single source of information on the recent activities in the field of thermal drying of solids."

As drying is such an energy intensive operation in the paper, food, process, and fuel industries, the existence of such a serial is justified. The papers range from purely theoretical to completely experimental. Some of the more novel papers deal with fluidized bed drying, numerical solution of two-phase theory of drying, corona-wind augmentation of baking, microwave vacuum drying and a relatively new field, drying induced stress. Unlike some volumes of this nature prepared by the individual authors on camera-ready mats, all the figures and equations are clear and legible. Because of its cost, it is doubtful that many engineers or scientist will want to purchase this volume for their personal library. The scope is simply not that coherent nor the depth that fundamental. It is the kind of volume, like the AIChE Symposium Series, bought primarily by libraries and consulted by specialists to get an overview of recent research and application trends.

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Fundamental Principles of Polymeric Materials, by Stephen L. Rosen, John Wiley & Sons, Inc. (1982). 346 pages. $32.50.

This book, sponsored by the Society of Plastics Engineers is an excellent overall introduction to polymeric materials. The author covers a wide range of topics, including polymer physical chemistry, polymer synthesis, polymer rheology, and technological aspects of polymer processing. Each of the 24 chapters are well-written, succinct, and do not require an extensive mathematical background for understanding. Professor Rosen gives many helpful physical insights into polymers, and the worked out problems are all useful and add substantially to the text. The printing is of high quality and there are very few typographical errors. *Fundamental Principles of Polymeric Materials* is an interesting, readable first course in polymers for the undergraduate student and I would not hesitate to use it in my classroom.

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An Album of Fluid Motion, by Milton Van Dyke, Parabolic Press, Stanford, CA. (1982) 174 pages, Paperback $10.00, Hardback $20.00.

This book is a collection of photographs of fluid flow in various configurations and by various techniques of visualization. The text, other than a one-page introduction, consists of a legend, the source of the photograph, and a brief description of the motion and technique of visualization for each photograph or set.

Professor Van Dyke has used good judgment, both artistically and scientifically in selecting the photographs, and has, with the assistance of those responsible for the photographs, prepared excellent descriptions.

The quality of the photographs is remarkable in the paperback version (this reviewer has not seen a hardcover copy). The author and the printer are to be commended for preparing such an excellent volume at such a reasonable cost, thereby making it possible for students to acquire a personal copy.

Veterans of fluid mechanics will find some old favorites in this book but also many new and surprising ones. The photographs include shock waves and natural convection, as well as creeping, laminar, turbulent, unstable, free-surface, near-sonic and supersonic flows. The author promises a second volume if this one is well received and solicits photographic contributions.

My overall assessment is best indicated by the fact that before receiving this book for review I had already purchased a copy and after perusing it immediately ordered a number of additional copies for gifts.

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