

Supercritical Fluids as Solvents and Reaction Media

By Gerd H. Brunner, Editor, Elsevier, Amsterdam, 2004, 641 pp., \$140.00.

In the introduction to *Supercritical Fluids as Solvents and Reaction Media*, Brunner states, "The content of this book provides an overview on the research activities in this field in Germany." The material in each chapter emanates from a research program sponsored by the German National Council for Science. The research goals from this program were to investigate scientific and engineering fundamentals for new supercritical fluid (SCF) processes. The chapters in this book present a synopsis of these fundamentals and processes. As specifically stated, the contents of the book come strictly from German researchers. The book contains 13 chapters on phase equilibrium and solubility, two chapters on properties, three chapters on formulation, three chapters on extraction, and five chapters on reactions. As such, the book offers a broad overview of many of the specifics of SCF technology,

although, with a few exceptions, these specifics are by no means new or novel.

I suspect that researchers active in the area of SCF technology will find most of the information in the book dated and just as easy to find by online topic or author searches. On the other hand, the book does cover a wide range of topics, thus making it valuable for a researcher or research manager interested in a short overview of a given topic along with pertinent references. For example, my own research focuses on the experimental determination of high-pressure, polymer-SCF solution behavior and light and neutron scattering from these solutions. Thus, I was intimately familiar with the research reported in the first section of this book on phase equilibrium and solubility. I was also very familiar with many of the research topics in the reactions section of the book. I can say with some confidence that SCF researchers in the United States will also be very familiar with the information reported in these two sections of the book. However, it is worth reiterating that there is value in having the information in these chapters in a single book for someone just beginning research in SCF technology. The more applied technology reported in the section of the book on properties, formulation, and extraction met the goal mentioned earlier of applying SCF processing to new areas. The ap-

plied technology information on interfacial phenomena in spray processing (Chapter 2.2) and the separation efficiency and mixing in extraction columns (Chapter 4.1) will be of interest to engineers who are applying SCF technology in a given industry. My hesitation in recommending the book outright is that only a few of the chapters report relatively new information.

Given the cost of the book and the ease of online topic and author searches, I do not recommend this book to experienced researchers in the area of SCF technology. However, this book does have value for an industrial engineer or scientist wishing to obtain a broad overview of many topics concerning SCF technology. I caution the purchaser of this book that more than a few figure captions are mislabeled or are out of order; pp. 423, 424, 426, and 428 are out of order; many paragraphs are not indented throughout the book; and in several places Greek letters are missing.

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