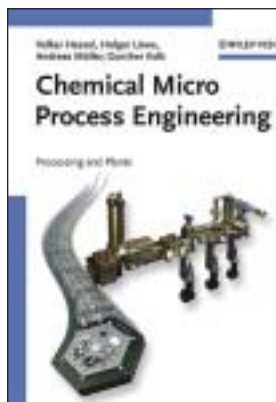


Chemical Micro Process Engineering — Processing and Plants

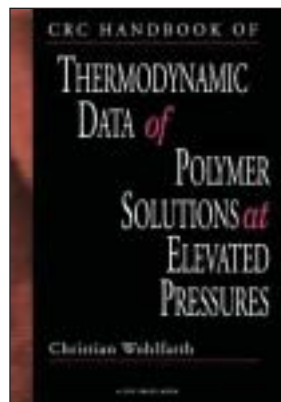
Volker Hessel, Holger Löwe, Andreas Müller and Gunther Kolb, Wiley-VCH, Hoboken, NJ, 651 pp., \$199.00, 2005

This text focuses on processes and their plants, rather than on devices. It gives a comprehensive and detailed overview on micro-reactor plants and three applications — mixing, fuel processing and catalyst screening. Mixing of miscible fluids is discussed in detail, with sections on 94 types of mixers, their protocols and simulation, and typical results. An exhaustive list of micro-structured fuel processors are described, with sections on methanol steam reforming, catalytic combustion of alcohol fuels, catalytic hydrocarbon combustion, and integrated systems fueled by methanol, among other types. Catalyst screen and micro-structured reactor plant concepts are the subject of the final chapters, with discussion of 25 types of reactors and 14 types of automation.



CRC Handbook of Thermodynamic Data of Polymer Solutions at Elevated Pressures

Christian Wohlfarth, Taylor & Francis, Boca Raton, FL, 641 pp., \$269.95, 2005



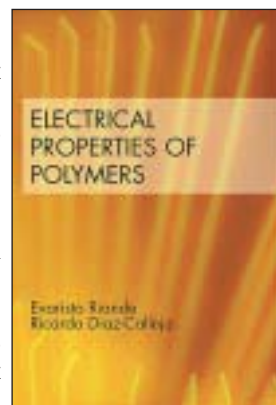
This handbook provides a complete collection of high-pressure thermodynamic data pertaining to polymer solutions at elevated pressures—all critical data for understanding the physical nature of these mixtures and applicable to a number of industrial and laboratory processes in polymer science, physical chemistry, chemical engineering, and biotechnology. It compiles information on experimental data from hundreds of primary journal articles, dissertations, and other papers into a single source entirely devoted to polymer solutions. The handbook contains reliable, easy-to-use entries, references, tables, examples, and appendices that provide users with a well-organized, quick route to the data they need. *The CRC Handbook of Thermodynamic Data of Polymer Solutions at Elevated Pressures* is written for researchers, academics, and engineers who handle polymer systems in

supercritical fluids, material science applications, such as computerized predictive packages, and chemical and biochemical processes, such as synthesis and characterization, fractionation, separation, purification, and finishing of polymers and related materials.

Electrical Properties of Polymers

Evaristo Riande and Ricardo Díaz-Calleja, Marcel Dekker, New York, NY, 630 pp., \$199.95, 2004

This book offers a systematic and cohesive study of the electrical properties of polymers. It is divided into three sections: Part I. Physical Fundamentals of Dielectrics (*i.e.*, static dipoles and quasi-static dipoles); Part II. Structure Dependence of Equilibrium and Dynamic Dielectric Properties of Polymers (*i.e.*, mean-square dipole moments of molecular chains); and Part III: Special Polymers (*i.e.*, liquid crystals, nonlinear optical polymers, conducting polymers, and piezoelectric and pyroelectric materials). The text features end-of-chapter problems and useful appendices to aid in the understanding of theoretical and computational notions.



Practical Process Control for Engineers and Technicians

Wolfgang Altmann, Newnes, Burlington, MA, 290 pp., \$49.95, 2005

This book is aimed at engineers and technicians who need to have a clear, practical understanding of the essentials of process control, loop tuning and how to optimize the operation of their particular plant or process. The reader would typically be involved in the design, implementation and upgrading of industrial control systems. Mathematical theory has been kept to a minimum with the emphasis throughout on practical applications and useful information. The book educates the reader on how to:

- specify and design the loop requirements for a plant using PID control
- identify and apply the essential building blocks in automatic control
- apply the procedures for open and closed loop tuning
- tune control loops with significant dead-times
- demonstrate a clear understanding of analog process control and how to tune analog loops
- explain concepts used by major manufacturers who use the most up-to-date technology in the process control field.