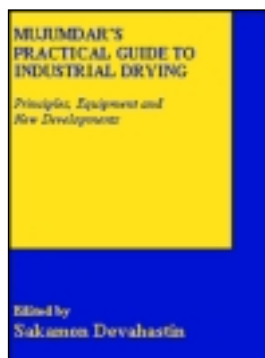


# Books

## Mujumdar's Practical Guide to Industrial Drying

Edited by Sakamon Devahastin, Exergex Corp., Brossard, Quebec, 187 pp., indexed, \$45, 2000



Prof. Arun S. Mujumdar is one of the most prolific researchers and writers on industrial drying technology. This rather slim book contains selected works of his that are deemed to be of general interest to a broad spectrum of engineers and technologists involved in this field. The objective of this book is to compile useful information on drying, which is often widely scattered and hard to access, and make it available inexpensively to engineers in industry and academia. The book is designed to bridge the gap between textbooks and handbooks.

The book has nine chapters, two appendices and a subject index. Chapter 1 is a concise treatment of the fundamental principles of drying, covering the thermodynamic properties of air-water mixtures and solids, and drying kinetics. In Chapter 2, the topics are classification and selection of dryers.

The next chapter succinctly reviews dryers for particulates and granular solids, slurries and suspensions, and sheet-formed materials. Chapter 4 is a short discussion of dryers for the production of particulate solids, and reviews those types for various feeds, such as pumpable liquids and pastes.

Chapter 5 is on fluid-bed drying, with sections on classification and selection criteria, the basics of drying kinetics and design considerations. A simple method is presented for calculating variables in batch drying in a fluidized-bed dryer.

Chapter 6 summarizes selected novel drying processes, as well as trends in technologies. Some examples of the topics covered include fluidized and spouted beds, and impinging-jet devices. The next chapter is on superheated steam drying, classification and selection of dryers for this medium, and the use of exhaust steam. Quality considerations are discussed, as is the drying of sludges, coal, beet pulp and paper. Chapter 8 is a short look at global research and development in this field. The final chapter presents Mujumdar's thoughts on R&D, creativity and the need for industry-university interaction.

The first appendix contains transport and thermodynamic properties of superheated steam, and the second offers a large listing of Mujumdar's published works.

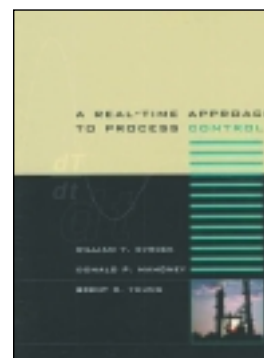
This book presents a practical amount of information in a short number of pages. Each chapter has concluding remarks summarizing what was discussed and a list of relevant references. This "Practical Guide" should be a useful source to all chemical engineers involved in the selection and design of drying equipment and systems.

*Stanley S. Grossel*

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## A Real-Time Approach to Process Control

William Y. Svrcek, Donald P. Mahoney and Brent R. Young, John Wiley, New York, 307 pp., \$39.95, 2000



This book covers the practice of process control as experienced by the undergraduate level engineer. The target audiences include students and practicing engineers entering into process control work in the operating plant or design office. The book concentrates on the nuts-and-bolts of the knowledge required for implementing basic control practices in the plant. The discussion chapters cover essential information for the vast majority of plant and design personnel. A series of workshop sections include exercises that would serve well in continuing education settings and for self-teaching.

No special knowledge of control is required to find the text useful. Key points are summarized along with examples of practical applications of control hardware and systems. The non-control specialist is not left to wander in impenetrable thickets of equations. Instead, practical advice and techniques useful to working engineers are emphasized.

After a preface and introduction, 10 chapters and appendices and eight workshop sections cover the fundamental elements of control for the chemical engineering industries. Chapter 1 covers a brief introduction to the history of control and simulation. Chapter 2 describes the basics of a control system and the fundamentals of process control hardware.

Chapter 3 introduces single-input/single-output control loops and their characteristics. Key concepts covered include feedback, dead time and dynamic response. A simple heat exchanger control loop example is analyzed to show major concepts in action. In Chapter 3, the emphasis is on the practical aspects of how control works and how to design control systems. This continues through the rest of the book.

Chapter 4 discusses basic control modes: on-off, proportional, integral, proportional-integral and the addition of derivative action. How to choose the correct control mode and controller hardware are included. Chapter 5 covers tuning methods and rules-of-thumb for various controllers. Chapter 6 introduces advanced topics in classical control including cascade, feedforward and ratio control.

Chapters 7 and 8 concentrate on specific control applications. Chapter 7 includes common flow, pressure, temperature, compression and level loops. Chapter 8 covers distillation control and distillation control structures. Chapter 9 rounds out the book with the selection of multiple-loop systems based on steady-state methods including simulation.

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