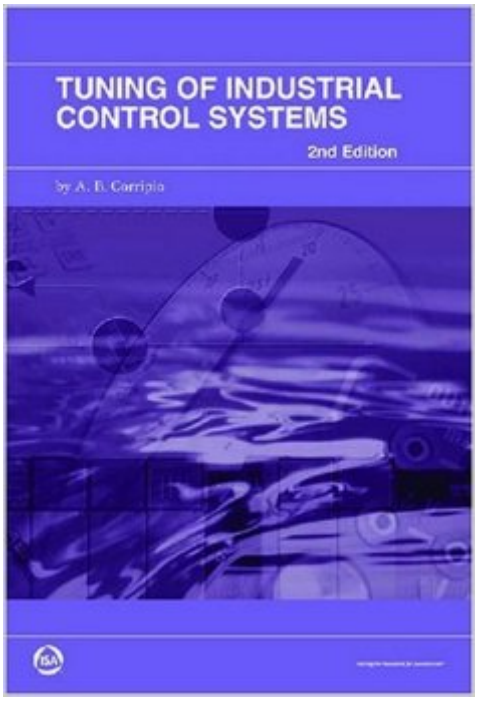
Tuning Of Industrial Control Systems



Synopsis

Suitable for beginners, this book takes a practical but systematic approach to tuning. The aim is to provide insight into tuning procedures rather than a series of formulas to be memorized. The author gives helpful rules of thumb to speed the learning process during field training. The text begins with a discussion of common techniques for measuring the dynamic response of a process and choosing appropriate performance criteria. Later chapters cover selection and tuning of feedback control modes, including computer- and microprocessor-based controllers, and advanced modes. The second edition includes numerous examples of tuning, including the effect of hysteresis in flow control loops, averaging and tight level control, cascade control of a jacketed chemical reactor, feedforward control of a heater, and loop interaction and ratio control in a blender. Also included is an introduction to a model reference control and a chemical reactor control example to illustrate it. Contents: Feedback Controllers Open-Loop Characterization of Process Dynamics How to Select Feedback Controller Modes How to Tune Feedback Controllers Computer Feedback Control Tuning Cascade Control Systems Feedforward, Ratio, Multivariable, Adaptive, and Self Tuning Control and more.

Book Information

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Customer Reviews

A practical, but systematic approach to tuning. This book is designed as a self-study guide for both beginners and experienced practitioner who want to learn more about the tuning of industrial control

systems.The book is organized as follows:- Introduction and overview.- Feedback controlers.- Open-loop characterization of process dynamics.- How to tune feedback controlers.- Mode selection and tuning common feedback loops.- Computer feedback control.- Feedforward and ratio control.- Multivariable control systems.- Adaptive and self-tuning control.- Suggested reading and study material.- Solutions to all exercises.I am an Industrial Practitioner of Process Control. I have been working for more than 16 years as an Instrumentation, Automation, and Process Safety and Control Engineer for the Oil & Gas Industry. I have found this book to be a very useful refresher on tuning methods.If you are looking for a more in-depth and broad treatment of process control topics, but still oriented towards practical industrial applications, you might want to consider Bela Liptak's Instruments Engineer's Handbook Volume 2 - Process Control and Optimization. I own both books and I have made extensive use of both of them, proving to be a very effective combination to solve day to day problems in my job.

Chemistry, Major Resins, Modern Industrial Processes