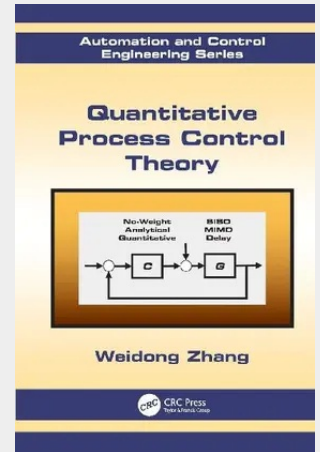


Quantitative Process Control Theory

Quantitative Process Control Theory explains how to solve industrial system problems using a novel control system design theory. This easy-to-use theory does not require designers to choose a weighting function and enables the controllers to be designed or tuned for quantitative engineering performance indices such as overshoot. In each chapter, a summary highlights the main problems and results and exercises improve and test your understanding of the material. Mathematical proofs are provided for almost all the results while examples are based on actual situations in industrial plants involving a paper-making machine, heat exchanger, hot strip mill, maglev, nuclear reactor, distillation column/heavy oil fractionator, jacket-cooled reactor, missile, helicopter/plane, and anesthesia. Developed from the author's many years of research, this book takes a unique, practical approach for efficiently solving single-input and single-output (SISO) and multiple-input and multiple-output (MIMO) control system design issues for quantitative performance indices. With much of the material classroom-tested, the text is suitable for advanced undergraduate and graduate students in engineering, beginning researchers in robust control, and more seasoned engineers wanting to learn new design techniques.

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