

Advanced Analytic and Control Techniques for Thermal Systems with Heat

Thermal systems are essential to a wide range of applications, from power generation to manufacturing and transportation. The efficient operation of these systems is critical to ensuring their safety, reliability, and performance.



Advanced Analytic and Control Techniques for Thermal Systems with Heat Exchangers by Libor Pekar

★★★★☆ 4 out of 5

Language : English
File size : 91304 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Word Wise : Enabled
Print length : 1013 pages



In recent years, there has been a growing interest in the development of advanced analytic and control techniques for thermal systems. These techniques can help to improve the performance of thermal systems by optimizing their operation and reducing their energy consumption.

This book provides a comprehensive overview of the latest analytic and control techniques for thermal systems with heat. It covers a wide range of topics, including:

* Thermal system modeling * System identification * Control system design
* Optimization * Fault diagnosis

The book is written by a team of experts in the field of thermal systems. It is a valuable resource for researchers, engineers, and students who are interested in learning about the latest advances in this area.

Chapter 1: Thermal System Modeling

The first chapter of the book provides an overview of thermal system modeling. It covers a wide range of modeling techniques, including lumped parameter models, distributed parameter models, and CFD models. The chapter also discusses the validation of thermal system models.

Chapter 2: System Identification

The second chapter of the book covers system identification. System identification is the process of determining the parameters of a mathematical model from experimental data. The chapter discusses a wide range of system identification techniques, including time-domain techniques, frequency-domain techniques, and state-space techniques.

Chapter 3: Control System Design

The third chapter of the book covers control system design. Control system design is the process of designing a control system that will meet the desired performance specifications. The chapter discusses a wide range of control system design techniques, including classical control techniques, modern control techniques, and adaptive control techniques.

Chapter 4: Optimization

The fourth chapter of the book covers optimization. Optimization is the process of finding the best possible solution to a problem. The chapter discusses a wide range of optimization techniques, including linear programming, nonlinear programming, and dynamic programming.

Chapter 5: Fault Diagnosis

The fifth chapter of the book covers fault diagnosis. Fault diagnosis is the process of identifying and isolating faults in a system. The chapter discusses a wide range of fault diagnosis techniques, including model-based fault diagnosis, signal-based fault diagnosis, and knowledge-based fault diagnosis.

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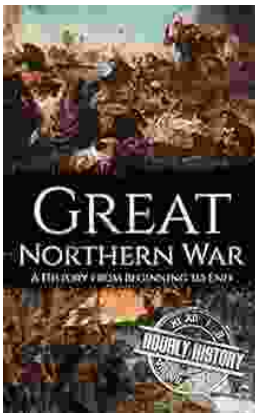
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