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5.10. Dynamical Models using the Stefan-Boltzmann Equation5.11. Towards the Hamilton-Jacobi-Bellman Approaches; 5.12. Final Remarks; Chapter 6: Hamilton-Jacobi-Bellman theory of energy systems; 6.1. Introduction; 6.2. Dynamic Optimization of Power in a Finite-resource Process; 6.3. Two Different Works and Finite-Rate Exergies; 6.4. Some Aspects of Classical Analytical HJB Theory for Continuous Systems; 6.5. HJB Equations for Non-Linear Power Generation Systems; 6.6. Analytical Solutions in Systems with Linear Kinetics
6.7. Extensions for Systems with Non-Linear Kinetics and Internal Dissipation

Sommario/riassunto

This book covers the optimization and integration of energy systems. The authors are world renowned specialists with extensive didactic experience. Their systematic approach uses thermodynamics, kinetics and economics to study the effect of equipment size, environmental parameters and economic factors on optimal power production and heat integration. They show that reduction of costs can be achieved, in particular costs of utilities common in chemical industry.Presents a unique synthesis of energy optimization and process integration that applies scientific information from thermodyna