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22. Optimization by Systems Integration4. Innovative Advanced Cycles, including Low Environmental Impact; 23. External Class Development; 24. Advanced Gas Turbines Cycles; 25. Evaporation, Mechanical Vapor Compression, Desalination, Drying by Hot Gas; 26. Cryogenic Cycles; 27. Electrochemical Converters; 28. Global Warming and Capture and Sequestration of CO2; 29. Future Nuclear Reactors; 30. Solar Thermodynamic Cycles; 31. Other than Solar NRE cycles; 32. Heat and Compressed Air Storage; 33. Calculation of Thermodynamic Solar Installations; 5. Technological Design and Off-design Operation 34. Technological Design and Off-design Operation, Model Reduction35. Technological Design and Off-design Behavior of Heat Exchangers; 36. Modeling and Setting of Displacement Compressors; 37. Modeling and Setting of Dynamic Compressors and Turbines; 38. Case Studies

Sommario/riassunto

Considered as particularly difficult by generations of students and engineers, thermodynamics applied to energy systems can now be taught with an original instruction method. Energy Systems applies a completely different approach to the calculation, application and theory of multiple energy conversion technologies. It aims to create the reader’s foundation for understanding and applying the design principles to all kinds of energy cycles, including renewable energy. Proven to be simpler and more reflective than existing methods, it deals with energy system modeling, instead of the thermodynamic foundations, as the primary objective. Although its style is drastically different from other textbooks, no concession is done to coverage: with encouraging pace, the complete range from basic thermodynamics to the most advanced energy systems is addressed.