

Energy Saving and Carbon Reduction

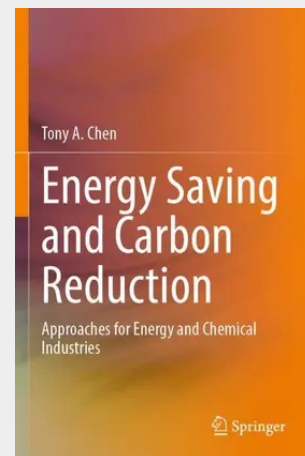
Approaches for Energy and Chemical Industries

The book provides an integrated energy/exergy analysis method to identify the energy utilization issues and systematically propose the cost-effective energy-saving and CO mitigation/capture solution. There is a strong market needs on energy-saving and greenhouse gas (GHG) reduction. CO mitigation/capture will achieve economic benefit of fuel, power, and carbon tax saving as well as environmental GHG reduction.

The book is a professional book for energy-saving and GHG gas mitigation technology in oil & gas, oil refining, and chemical industry. It is an integrated technical book that combines energy utilization theory and practical method, including: thermodynamic analysis for unit operation and process units; energy and exergy calculation for various process streams and utilities; three-link energy/exergy analysis model; energy/exergy balance of equipment, process units, and entire plant; approach and technology of energy saving; optimization of pipeline and equipment; pinch energy-saving technology and its application; CO capture and utilization with 8 case studies incorporated for all different scenarios; key energy-saving technologies such gas turbine, FCCU regeneration CO combustion and energy recovery, flue gas turbine system optimization, low-grade heat recovery and utilization.

The book is intended for engineers and professional personnel who are working in process engineering, EPC companies, chemical and petrochemical plants, refineries, oil & gas production facilities, power generation plant. It can also be a professional reference or textbook for undergraduate or graduate-level university students and teaching personnel of chemical, energy, and process engineering faculties of universities.

Thermodynamics Fundamentals.- Calculation of Thermophysical Energy and Exergy.- Calculation of Mechanical Energy and Chemical Exergy.- Thermodynamic Analysis of Energy Consumption in Process.- Energy Utilization Three-link Analysis Method.- Equipment Energy Balance and Exergy Balance.- Energy Balance and Exergy Balance of Petrochemical Plants.



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