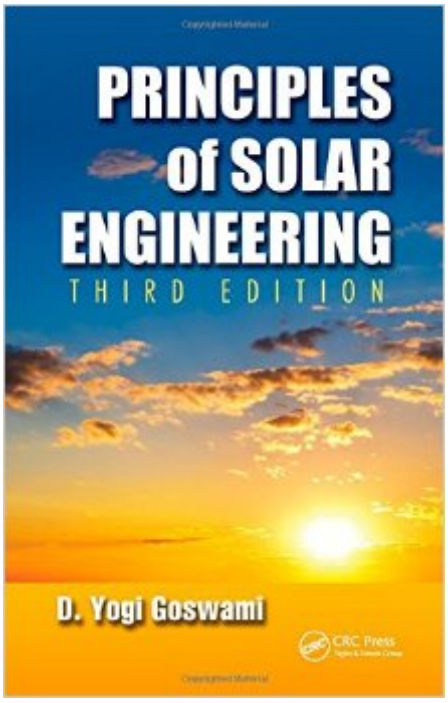
Principles Of Solar Engineering, Third Edition



Synopsis

An Engineering-Based Survey of Modern Solar Energy Concepts and Practical Applications Reflecting major developments in solar energy since the publication of the last edition, Principles of Solar Engineering, Third Edition follows the changes in energy policies that have led to the rapid growth of solar energy systems. This latest edition focuses on the fundamentals and the design of systems for various applications including building, heating and cooling, industrial process heat, electric power plants (including PV and CSP), and environmental systems. Whatâ ™s New in the Third Edition: TheÂ third edition introduces new topics that include organic and dye sensitized solar cells in the photovoltaics chapter, advanced thermodynamic power cycles such as supercritical CO2 cycle and information on design software packages. The chapters on solar radiation and solar thermal collectors have been completely changed. Because of its increased importance, solar thermal power is covered in much more depth than in the previous edition. The book contains increased coverage of high temperature thermal storage for CSP in the chapter for energy storage and transport. It changes many end-of-chapter problems, provides examples and problems for both northern and southern hemispheres and countries around the world, includes a solutions manual, andÂ revises the retained material. A significant change in the new edition is the addition of economic analysis in the first chapter, which includes a number of solved examples, and allows the students to analyze the applications in the later chapters from an economic stand point. Designed to be both a textbook and a reference, this work: Introduces the global energy situation and addresses changes taking place in the distribution of available energy resources Covers concentrating and nonconcentrating solar thermal collectors in much more depth than before Highlights the latest developments in collector materials as well as new correlations for heat transfer and thermal performance analysis Explores thermal energy storage, new developments, including materials, analysis, and design Examines CSP and PV power, and outlines what students need to learn for future upcoming developments in these areas Provides in detail solar central receiver systems, commonly known as power towers, including the design of a solar heliostat field, receiver/absorber, and higher temperature thermodynamic power cycles Details the latest developments in thin film solar cells Presents environmental applications of solar energy Principles of Solar Engineering, Third Edition addresses the need for solar resource assessment, and highlights improvements and advancements involving photovoltaics and solar thermal technologies, grid power, and energy storage.

Book Information

Hardcover: 822 pages

Publisher: CRC Press; 3 edition (February 20, 2015)

Language: English

ISBN-10: 1466563788

ISBN-13: 978-1466563780

Product Dimensions: 6.2 x 1.7 x 9.3 inches

Shipping Weight: 2.6 pounds (View shipping rates and policies)

Average Customer Review: 3.0 out of 5 starsÂ Â See all reviewsÂ (1 customer review)

Best Sellers Rank: #510,960 in Books (See Top 100 in Books) #59 inÂ Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Alternative & Renewable > Solar #218 inÂ Books > Science & Math > Physics > Dynamics > Thermodynamics #456 inÂ Books > Textbooks > Science & Mathematics > Mechanics

Customer Reviews

There are lot of error in this book

Solar Electricity Handbook: 2016 Edition: A simple, practical guide to solar energy - designing and installing solar PV systems Solar Electricity Handbook - 2014 Edition: A Simple Practical Guide to Solar Energy - Designing and Installing Photovoltaic Solar Electric Systems Principles of Solar Engineering, Third Edition Large-Scale Solar Power System Design (GreenSource Books): An Engineering Guide for Grid-Connected Solar Power Generation (McGraw-Hill's Greensource) Solar Water Heating--Revised & Expanded Edition: A Comprehensive Guide to Solar Water and Space Heating Systems (Mother Earth News Wiser Living Series) Solar Cooking for Home & Camp: How to Make and Use a Solar Cooker The Passive Solar House: Using Solar Design to Heat and Cool Your Home (Real Goods Independent Living Book) Solar II: How to Design, Build and Set Up Photovoltaic Components and Solar Electric Systems The Passive Solar Energy Book: A Complete Guide to Passive Solar Home, Greenhouse and Building Design The Renewable Energy Home Handbook: Insulation & energy saving, Living off-grid, Bio-mass heating, Wind turbines, Solar electric PV generation, Solar water heating, Heat pumps, & more Solar Wind Nine: Proceedings of the Ninth International Solar Wind Conference: Nantucket, Massachusetts, 5-9 October 1998 (AIP Conference Proceedings / Astronomy and Astrophysics) Orbital Mechanics for Engineering Students, Third Edition (Aerospace Engineering) Principles of Financial Engineering, Third Edition (Academic Press Advanced Finance) Aircraft Engineering Principles, 2nd ed (Taylor & Francis

Aerospace and Aviation Engineering) Principles And Practice of Mechanical Ventilation, Third Edition (Tobin, Principles and Practice of Mechanical Ventilation) Principles of Bone Biology, Third Edition (Bilezikian, Principles of Bone Biology 2 Vol Set) Solar Cells : Operating Principles, Technology and System Applications Energy Audit of Building Systems: An Engineering Approach, Second Edition (Mechanical and Aerospace Engineering Series) A Primer For The Mathematics Of Financial Engineering, Second Edition (Financial Engineering Advanced Background Series) Crazy Horse, Third Edition: The Strange Man of the Oglalas, Third Edition