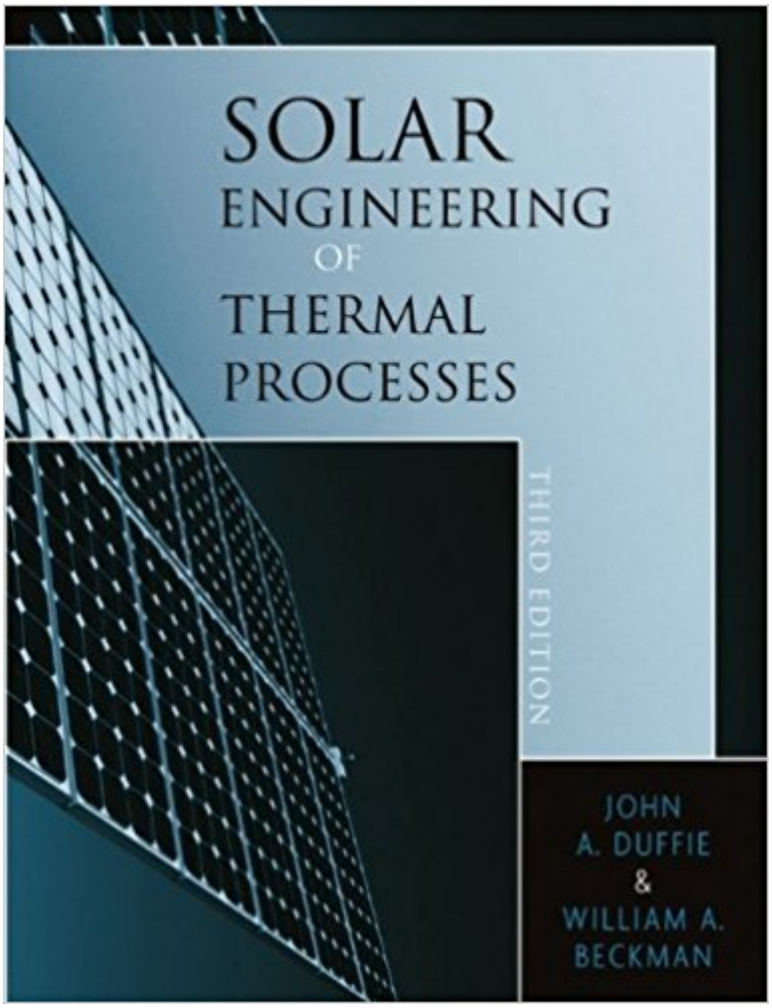
Solar Engineering Of Thermal Processes



Synopsis

The updated, cornerstone engineering resource of solar energy theory and applications. Solar technologies already provide energy for heat, light, hot water, electricity, and cooling for homes, businesses, and industry. Because solar energy only accounts for one-tenth of a percent of primary energy demand, relatively small increases in market penetration can lead to very rapid growth rates in the industryÃƒÂ¢??which is exactly what has been projected for coming years as the world moves away from carbon-based energy production. Solar Engineering of Thermal Processes, Third Edition provides the latest thinking and practices for engineering solar technologies and using them in various markets. This Third Edition of the acknowledged leading book on solar engineering features: Complete coverage of basic theory, systems design, and applications Updated material on such cutting-edge topics as photovoltaics and wind power systems New homework problems and exercises

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Customer Reviews

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John A. Duffie (deceased) was Professor Emeritus of Chemical Engineering and past Director of the Solar Energy Laboratory at the University of WisconsinÃ¢â ¬â œMadison. William A. Beckman is the Ouweneel-Bascom Professor Emeritus of Mechanical Engineering and Director of the Solar Energy Laboratory at the University of WisconsinÃ¢â ¬â œMadison.

Purchased this as required materials for a class, and I am now obsessed with solar engineering.Firstly, I want to say how hilarious I found it that the back says it is the "Bible of Solar Engineering". But upon having read 75% of it thus far, I think that is the best way to describe it. Anything you need is in there, and then some.As for the reading level, the portions with equations are obviously a bit more of a technical read, and you won’t get the most out of this book that you can unless you plug some of these equations in MATLAB, or some other form of computing software, but the material itself is very attainable.Highly recommend.

Bought this book as part of my reading for an introductory solar energy course. Being quite new to the physics behind solar energy, I was extremely satisfied with the explanations and worked examples that are included in the first few chapters of the book. It is actually referred to as the "bible" of solar energy engineering by my lecturer.Will update my rating next year when I use the book for an advanced solar energy course.

The second edition of "Solar Engineering..." is a much expanded and updated version of the original, which was already a decent textbook. It covers almost everything there is to know about engineering of solar energy systems, and the presentation is clear and well organized. The division into "basics" and "applications" sections is a very sensible way to get oriented before plunging into the depth of a specific technology, especially since solar thermal applications tend to cover a wide variety of technologies. The gradual and systematic approach makes this book a very good textbook for beginners. The wide scope makes it also a pretty good reference source for practitioners who are looking for a specific bit of information.The new chapter on photovoltaic cells is

a nice touch. While this is not a "thermal process," it is still important for any practitioner of solar thermal to know what's happening in the other corner of the field. A presentation of PV at the level that can be understood by non-physicists is a very welcome addition.My only complaint is that recent significant developments are not well represented (I guess much of this developed after the book was written, so this complaint is not really aimed at the authors). Topics such as non-imaging concentrators, high-temperature thermal receivers for Brayton cycle, and solar chemistry are either briefly mentioned or absent altogether. The more traditional applications such DHW are of course presented in detail, but their significance to the energy market remains negligible. I would prefer to see more on applications that have the potential to make a major impact. Hopefully this will be included in the next edition...

Great book. But not for the average reader. In need of editing and more/better illustrations to make it more reader-friendly. Recommended only for solar energy engineers.

I knew nothing about solar panels prior to this and this book helped me learn a great deal. However, one thing I disagree with a little in the book is how detailed it gets on some parts, mainly when it starts talking about the make up of the coatings on solar panels in such chemistry language. With that in mind though, you can easily just skip that chapter and no harm no foul

A classic in the field, so what can I say, it is fully recommended for learning/teaching as well as for direct reference when doing some calculation or even having to write an article on the topic.

As far as textbooks go the reading is dry as usual but there are several options presented for modeling solar radiation of varying difficulty. Info ranges from graphs to give intuition about changes in solar collector tilt to numerical models that would take 10 minutes just to punch in all the numbers. Quite information intensive as it should be.

Great book, very useful in every aspect!

Handbook: 2017 Edition: A simple, practical guide to solar energy ? designing and installing solar photovoltaic systems. Solar Electricity Handbook - 2015 Edition: A simple, practical guide to solar energy - designing and installing solar PV systems. Solar Electricity Handbook - 2013 Edition: A Simple Practical Guide to Solar Energy - Designing and Installing Photovoltaic Solar Electric Systems Solar Electricity Handbook - 2014 Edition: A Simple Practical Guide to Solar Energy - Designing and Installing Photovoltaic Solar Electric Systems DIY: How to make solar cell panels easily with no experience!: Master Making Solar Panels Faster! (Master Solar Faster Book 1) Solar Electricity Handbook - 2012 Edition: A Simple Practical Guide to Solar Energy - Designing and Installing Photovoltaic Solar Electric Systems Advances in Concentrating Solar Thermal Research and Technology (Woodhead Publishing Series in Energy) Planning and Installing Solar Thermal Systems: A Guide for Installers, Architects and Engineers Solar Energy Engineering, Second Edition: Processes and Systems Computational Fluid Mechanics and Heat Transfer, Third Edition (Series in Computational and Physical Processes in Mechanics and Thermal Sciences) Computational Fluid Mechanics and Heat Transfer, Second Edition (Series in Computional and Physical Processes in Mechanics and Thermal Sciences) Heat Conduction Using GreenÃ¢â ¬â„¢s Functions, 2nd Edition (Series in Computational Methods and Physical Processes in Mechanics and Thermal Sciences) Thermal Environmental Engineering (3rd Edition) Introduction to Thermal Systems Engineering: Thermodynamics, Fluid Mechanics, and Heat Transfer Introduction to Thermal and Fluids Engineering PE Mechanical Engineering: Thermal and Fluids Practice Exam Freezing Colloids: Observations, Principles, Control, and Use: Applications in Materials Science, Life Science, Earth Science, Food Science, and Engineering (Engineering Materials and Processes)