

## BOOK REVIEW

Jan F. Kreider (Editor), **Medium and High Temperature Solar Processes**. Academic Press (1976). 346 pp.

THIS book is concerned with solar-thermal processes operating above 100°C considering broad division between medium- and high-temperature processes of 300–400°C which corresponds to operating temperatures achieved by solar concentrators.

The author has divided the text of his book into seven chapters: Chapter 1 is a prologue just reviewing briefly energy use patterns and solar-thermal systems; their economics and environmental impacts. Chapters 2 and 3 deal with principles of solar radiation, thermodynamic and heat-transfer, one can find these subjects in most text books. However, Chapter 2 emphasizes, in particular, direct radiation which has highest thermodynamic availability used by solar collectors. Chapter 3 presents selected topics for elevated temperature solar processes and usable surfaces properties.

Medium-temperature processes are covered by the following two chapters; about one-third of the book: Chapter 4 illustrating systems components and analysing various types of concentrators, thermal storage and heat exchangers, and

Chapter 5 treating solar power production and industrial process-heat systems with some illustrative schematic diagrams and simple solved examples which may assist studying this topic.

High-temperature processes are dealt with in Chapter 6, which presents some analysis and design data of solar furnaces, thermal power plants and thermoionics.

The last chapter in the book treats in the conventional way the economic analysis of solar-thermal systems with some solved examples for various components. Also the book contains at the end some useful tables and a list of 138 references to other works dealing with basic concepts of solar engineering.

The reviewer has found this book a sort of a handbook describing methods and tools currently by examples or analytical methods useful for solar engineering design, mainly in smaller and intermediate scale of medium and high temperature solar processes that may be viable until the end of this century.

Finally, it is hoped that the editor shall concurrently make future revised editions of the text of his book as to cope with the vast state of development of the topics, as well as correction of a few errors, e.g. page numbers in the index and conversion factor units.