DESCRIPTION

An excellent and unique generalized introduction to the fundamental principles of future solar energy systems, based on good and consistent physics. In describing the various conversions, the author makes use of endoreversible thermodynamics - a subset of irreversible thermodynamics. In this way, readers are supplied with the information to enable them to calculate the explicit values for a broad class of processes. Throughout, general principles are illustrated using idealized models, and end-of-chapter technological examples are merely presented so as to compare reality with theory. As such, no more than an undergraduate level of physics knowledge is assumed, together with a familiarity with SI units, and no differential equations are used.

ABOUT THE AUTHOR

Alexis de Vos received his Ph.D. degree in applied sciences from the University of Ghent, Belgium, in 1979. He currently holds posts as part-time systems engineer at the Flemish Interuniversity Microelectronics Research Centre, and as a part-time professor at the Department of Electronics and Information Systems of the University of Ghent. His research focuses on material science (polymers, semiconductors, metals, liquid crystals), microelectronics (thin films and chips), and energy sciences (thermodynamics, solar energy, endoreversible engines, reversible computing). He is the author and co-editor of several books and has authored numerous papers and articles. Since 1993, he has been acting as the coordinator of the pan-European Carnot Network on Thermodynamics and Thermoeconomics of Energy Conversion and Transport.
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