

CONTENTS

Preface	iii
Contributors	v
Contents of Part A	ix
unit 7 Applications of Solar Technology	
27 Domestic Water Heating <i>Subrato Chandra</i>	3
28 Swimming Pool Heating <i>Raj Talwar</i>	15
29 Building Space Heating: Active Systems <i>Bruce D. Hunn and George O. G. Löf</i>	33
30 Solar Cooling <i>John A. Duffie, William A. Beckman, and John W. Mitchell</i>	103
31 Passive Solar Design <i>Bruce N. Anderson and Charles J. Michal</i>	119
32 Total Energy Systems Design <i>Raymond W. Harrigan</i>	161
33 Distillation of Sea Water <i>Everett D. Howe</i>	205
34 Irrigation Pumping <i>Peter L. Hofmann, Robert D. Fischer, and Sherwood G. Talbert</i>	239
35 Food Dehydration <i>Edward J. Carnegie and J. G. Pohl</i>	277
36 Industrial Process Heat <i>William C. Dickinson and Alan B. Casamajor</i>	297
37 Electric Power Generation: Photovoltaics <i>Aaron Kirpich, G. O'Brien, and N. Shepard</i>	313
38 Electric Power Generation: Thermal Conversion <i>Lorin L. Vant-Hull</i>	353
39 Electric Power Generation: Ocean Thermal Energy Conversion <i>Robert Cohen</i>	379
40 Electric Power Generation: Wind, Waves, and Tides <i>Marshal F. Merriam</i>	439
41 Data Acquisition Systems <i>Robert J. Schlesinger and Joseph L. Imholte</i>	463
42 Solar Simulation Computer Programs <i>C. Byron Winn</i>	481

43	Calculation Procedures for Determining the Thermal Performance of Active Solar Space Heating and Domestic Hot Water Systems (the f-chart method). Reproduced from HUD, "Intermediate Minimum Property Standards Supplement." 1977 Edition.	517
44	A Simplified Method for Sizing Active Solar Space Heating Systems <i>Bruce D. Hunn</i>	639
unit 8 Nontechnical Issues		
	Glossary of Some Economic Terms Used in Chapters 45 and 46	667
45	An Economic Methodology for Solar Hot Water and Space Heating Systems <i>William C. Dickinson</i>	669
46	An Economic Methodology for Solar Industrial Process Heat Systems <i>William C. Dickinson</i>	685
47	Barriers and Incentives in the Commercialization of Solar Energy <i>Stephen L. Feldman and Michael P. Berz</i>	705
48	Environmental, Health, and Safety Issues <i>Philip E. Mihlmester, John B. Thomasian, and Michael R. Riches</i>	731
Appendix A	Conversion of Units	763
Appendix B	Solar Altitude, Solar Azimuth, and Solar Incidence Angle for Horizontal and South-facing Inclined Surfaces for Latitudes of 24°, 32°, 40°, and 48°	771
Appendix C	R Values and U Values for Materials, Air Films, and Air Spaces	781
	Selected Tabular and Graphical Data Included in Handbook	786
	Index	789