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Part II: Techniques for Retrofitting and RevampingChapter 4: Mathematical Modeling, Simulation and Optimization for Process Design; 4.1 Introduction; 4.2 Process Modeling and Model Solution; 4.3 Process Simulators and Aspen Custom Modeler; 4.4 Optimization Methods and Programs; 4.5 Interfacing a Process Simulator with Excel; 4.6 Application to Membrane Separation Process; 4.7 Conclusions; Acronyms; Appendix 4A: Implementation of Membrane Model in ACM; Appendix 4B: Interfacing of Aspen Plus v8.4 with Excel 2013; Appendix 4C: Interfacing of Aspen HYSYS v8.4 with Excel 2013; Exercises ReferencesChapter 5: Process Intensification in Process Retrofitting and Revamping; 5.1 Introduction; 5.2 Methods of Process Intensification; 5.3 Alternatives to Conventional Separators; 5.4 Alternatives to Stirred Tank Reactor (STR); 5.5 Process Integration; 5.6 Fundamental Issues of PI; 5.7 Future of PI; 5.8 Conclusions; Acknowledgement; Appendix 5A: Monographs, Reviews and Some Recent Papers; References; Chapter 6: Using Process Integration Technology to Retrofit Chemical Plants for Energy Conservation and Wastewater Minimization; 6.1 Introduction 6.2 Graphical Design Tools for Retrofitting Process for Energy Conservation by Designing Heat Exchange Networks6.3 Graphical Design Tools for Retrofitting Processes for Wastewater Reduction by Designing Water Recycle Networks; 6.4 Conclusions; Appendix 6A: Illustrating the Water Recycle Network Design Guidelines; Exercises; References; Chapter 7: Heat Exchanger Network Retrofitting: Alternative Solutions via Multi-objective Optimization for Industrial Implementation; 7.1 Introduction; 7.2 Heat Exchanger Networks; 7.3 HEN Improvements 7.4 MOO Method, HEN Model and Exchanger Reassignment Strategy
