Contents

Contributors vii
Preface ix

1 Design for Environment (DfE): Strategies, Practices, Guidelines, Methods, and Tools 1
Daniel P. Fitzgerald, Jeffrey W. Herrmann, Peter A. Sandborn, Linda C. Schmidt, and Thornton H. Gogoll

2 Product Design for Sustainability: A New Assessment Methodology and Case Studies 25

3 Life-cycle Design 67
Abigail Clarke and John K. Gershenson

4 Fundamentals and Applications of Reverse Engineering 127
Kemper E. Lewis, Michael Castellani, Timothy W. Simpson, Robert B. Stone, William, H. Wood, and William Regli

5 Design for Reliability 161
B.S. Dhillon

6 Design for Maintainability 185
O. Geoffrey Okogbaa, Professor Wilkistar Otieno

7 Reuse and Recycling Technologies 249
Hartmut Kaebernick, Sami Kara

8 Design for Remanufacturing Processes 283
Bert Bras

9 Materials Selection for Green Design 319
I. Sridhar

10 Employing Total Quality Management/Six Sigma Processes in Environmentally Conscious Design 351
Robert Alan Kemerling

Index 383