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New Issues and Regulations; 2.3.2 Sustainability as an Opportunity; 2.3.3 Recent Industry Trends; 2.4 Conclusions: the Sustainability Drivers; References; Chapter 3 From Industrial to Sustainable Chemistry, a Policy Perspective; 3.1 Introduction; 3.2 Integrated Pollution Prevention and Control; 3.2.1 Environmental Policy for Industrial Emissions; 3.2.2 Best Available Techniques and BREFs 3.2.3 Integrated Pollution Prevention and Control in the Chemical Sector 3.3 From IED to Voluntary Systems; 3.4 Sustainability Challenges for Industry; 3.4.1 Introduction; 3.4.2 Policy Drivers for Sustainable Chemistry; 3.4.3 Transition Concept; 3.5 Conclusion; References; Chapter 4 Sustainable Industrial Chemistry from a Nontechnological Viewpoint; 4.1 Introduction; 4.2 Intraorganizational Management for Enhancing Sustainability; 4.3 Horizontal Interorganizational Management for Enhancing Sustainability; 4.4 Vertical Interorganizational Management for Enhancing Sustainability 4.5 Sustainable Chemistry in a Societal Context 4.6 Conclusions; References; Part II Managing Intra-Organizational Sustainability; Chapter 5 Building Corporate Social Responsibility - Developing a Sustainability Management System Framework; 5.1 Introduction; 5.2 Development of a CSR Management System Framework; 5.2.1 Management Knowledge and Commitment (Soft Factor); 5.2.2 Stakeholder Knowledge and Commitment (Soft Factor); 5.2.3 Strategic Planning - the Choice of Sustainable Strategic Pillars (Hard Factor); 5.2.4 Knowledge and Commitment from the Workforce (Soft Factor) 5.2.5 Operational Planning, Execution, and Monitoring (Hard Factor) 5.3 Conclusions; References; Chapter 6 Sustainability Assessment Methods and Tools; 6.1 Introduction; 6.2 Sustainability Assessment Framework; 6.3 Impact Indicators and Assessment Methodologies; 6.3.1 Environmental Impact Assessment; 6.3.1.1 Emission Impact Indicators; 6.3.1.2 Resource Impact Indicators; 6.3.1.3 Technology Indicators; 6.3.1.4 Assessment Methodologies; 6.3.2 Economic Impact Assessment; 6.3.2.1 Economic Impact Indicators; 6.3.2.2 Assessment Methodologies; 6.3.3 Social Impact Assessment 6.3.3.1 Social Impact Indicators

Sommario/riassunto

Approaching sustainability from the perspectives of engineering and multiple scientific disciplines, this book incorporates the concepts of intergenerational equity and ecological capabilities, while promoting scientific rigor for the analysis of sustainability and the use of appropriate metrics to determine the comparative merits of alternatives. The chapters are organized around the key non-technological themes of sustainable industrial chemistry and provide an overview of the managerial principles to enhance sustainability in the chemicals sector. The book strives to provide an intellec
