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Environment; 3.1 The Earth's crust
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5: Life-cycle Assessment: a Tool for Identification of More Sustainable Products and Processes1 Introduction; 2 The LCA Methodology; 2.1 Methodological framework; 3 The Applications of LCA; 3.1 Product-oriented LCA; 3.2 Process-oriented LCA; 4 Conclusions; 5 Appendix; 5.1 Definition of environmental impacts; References; 6: Industrial Processes using Solid Acid Catalysts; 1 Introduction; 2 Concepts in Acidity and Solid Acid Catalysts; 3 Industrial Applications of Solid Acid Catalysts; 3.1 Zeolite-based solid acid catalysts; 3.2 Heteropolyacid-based solid acid catalysts; 3.3 Sulfated zirconia
3.4 Ion-exchange resins3.5 Acidic and pillared clays; 4 Some Recent Developments in Catalytic Materials and Processes; 4.1 The 'Kvaerner Process' and esterification chemistry; 4.2 Nafion/silica nanocomposites; 4.3 Haldor-Topsoe alkylation process to high-octane fuels; 4.4 Mobil-Badger cumene process; 4.5 Isodewaxing process (Chevron); 5 Summary; Acknowledgements; References; 7: Micelle-templated Silicas as Catalysts in Green Chemistry; 1 Introduction; 2 Structured Mesoporous Materials; 2.1 Synthesis of micelle-templated materials; 2.2 Post-functionalisation of micelle-templated materials
2.3 Direct preparation of organically modified micelle-templated silicas

Sommario/riassunto

Sustainable development is now accepted as a necessary goal for achieving societal, economic and environmental objectives. Within this chemistry has a vital role to play. The chemical industry is successful but traditionally success has come at a heavy cost to the environment. The challenge for chemists and others is to develop new products, processes and services that achieve societal, economic and environmental benefits. This requires an approach that reduces the materials and energy intensity of chemical processes and products; minimises the dispersion of harmful chemic