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	Titolo	Saga di Gautrekr / Postfazione e cur. Massimiliano Bampi
	Pubbl/distr/stampa	Milano, : Iperborea, 2004
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	Titolo	Catalysis by ceria and related materials [[electronic resource] /] / edited by Alessandro Trovarelli
	Pubbl/distr/stampa	London, : Imperial College Press, c2002
	ISBN	1-86094-965-7
	Descrizione fisica	1 online resource (527 p.)
	Collana	Catalytic science series ; ; v. 2
	Altri autori (Persone)	TrovarelliAlessandro
	Disciplina	541.3/95
	Soggetti	Cerium oxides Catalysis Electronic books.
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	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	CONTENTS ; Preface ; 1. Mining, Production, Application and Safety Issues of Cerium-based Materials; 1.1. Mining ; 1.2. Production and Application ; 1.3. Safety Issues ; 1.4. References ; 2. Structural Properties and Nonstoichiometric Behavior of CeO ₂ ; 2.1. Structural Properties ; 2.2. Defect Structure Analysis ; 2.3. Transport Properties ; 2.4. References 3. Synthesis and Modification of Ceria-based Materials ; 3.1.

Introduction ; 3.2. Solid to Solid Synthesis
 ; 3.3. Liquid to Solid Synthesis ; 3.4. Gas to Solid
 Synthesis ; 3.5. Modification of Bulk and Surface
 ; 3.6. References
 4. Chemical and Nanostructural Aspects of the Preparation and
 Characterisation of Ceria and Ceria-Based Mixed Oxide-Supported
 Metal Catalysts 4.1. Introduction ; 4.2. Preparation of
 M/CeO₂ and Closely Related Catalysts; 4.3. Characterisation of M/CeO₂
 and Closely Related Catalysts; 4.4. References ; 5. Studies
 of Ceria-containing Catalysts Using Magnetic Resonance and X-ray
 Spectroscopies; 5.1. Introduction ; 5.2. EPR ;
 5.3. NMR ; 5.4. XPS ; 5.5. XAFS
 5.6. References 6. Structural Properties and Thermal
 Stability of Ceria-Zirconia and Related Materials
 ; 6.1. The CeO₂-ZrO₂ Phase Diagram; 6.2. Effects of High Temperature
 Reducing and Oxidising Treatments
 ; 6.3. Effects of Aliovalent Doping on Thermal and Phase Stability
 ; 6.4. Effects of Addition of Al₂O₃ to CeO₂-ZrO₂ Mixed Oxides
 6.5. References 7. Oxygen Storage/Redox Capacity and
 Related Phenomena on Ceria-Based Catalysts
 ; 7.1. Introduction ; 7.2. Oxygen Storage Capacity
 Measurements ; 7.3. Elementary Steps
 Involved in OSC Processes ; 7.4. OSC
 and Catalysis ; 7.5. References
 8. Computer Simulation Studies of Ceria-based Oxides

Sommario/riassunto

The use of CeO₂-based materials in catalysis has attracted considerable attention in recent years, particularly in applications like environmental catalysis, where ceria has shown great potential. This book critically reviews the most recent advances in the field, with the focus on both fundamental and applied issues. The first few chapters cover structural and chemical properties of ceria and related materials, i.e. phase stability, reduction behaviour, synthesis, interaction with probe molecules (CO, O₂, NO), and metal-support interaction - all presented from the viewpoint of catalytic appl
