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ISBN	3-030-61240-6
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XVI, 377 p. 268 illus., 145 illus. in color.)
Disciplina	620.143
Soggetti	Refractory materials Refractories industry - Equipment and supplies Chemical engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Refractory- Characterization -- Classification of Refractories -- Refractory- Manufacturing Processes and properties -- Design, Installation and Maintenance of Refractory Lining -- Refractories for lime Calcination -- Refractories for Syngas manufacturing -- Refractories for Coal gasification -- Refractories for Carbon Black manufacturing -- Refractories for Petroleum Refinery -- Refractories for Glass Manufacturing -- Refractories for Portland Cement Manufacturing -- Refractories for Boiler and Waste heat recovery -- Refractory – Performances and mechanism of damages.
Sommario/riassunto	The book provides process engineers, an insight into refractories focusing on its importance and requirements in chemical process industries such as refinery and petrochemicals, syngas manufacturing, coal gasification, limestone calcinations, carbon black, glass, and cement production. Additionally the book discusses the refractory requirements for the CFBC boiler, and waste heat utilization process to generate steam. The book describes characterization of refractory material and selection process of the refractory for lining different equipments pertaining to the chemical process industry. The book covers refractory installation techniques, and the precautions to be taken during installation are discussed in detail along with the theoretical background. It explains the physical and chemical factors

that influence the performances of refractory, mechanism of its degradation in service and emphasizes on the thermo-chemical and thermo-mechanical aspects and their role in that process . The content lays out different methods of monitoring Refractory lining conditions while the furnace is in operation and also elucidates few methods to repair the worn out lining without taking a shutdown. The scheme of investigation of a refractory failure is an added feature. Discusses operational conditions prevailing in different reactors, furnaces, and kilns and any other equipment subjected to high temperature exposure; Illustrates the decision making process on selection of refractories as protection lining; Presents in detail the different types of thermal insulation materials important for all process chemical industries; Elucidates particulars of the installation procedure of refractories and insulation materials focussing their bearing on the performance of the refractories; Analyzes the factors responsible for refractory performances and the various investigation procedures in case of refractory failure; Features case studies on the monitoring and failure of refractories in reactors or furnaces or in other equipment in various chemical process industries.

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