

1. Record Nr.	UNINA9910827714303321
Titolo	Treatise on process metallurgy . Volume 3 Industrial processes // editor-in-chief, Seshadri Seetharaman, Royal Institute of Technology, Stockholm, Sweden ; co-editors-in-chief, Alexander McLean, Department of Materials Science and Engineering, University of Toronto, Toronto, Ontario, Canada, Roderick Guthrie, McGill Metals Processing Centre, Montreal, Quebec, H3A 2B2, Canada, Seetharaman Sridhar, Royal Academy of Engineering/Tata Steel Research Chair in Low Carbon Materials Technologies, University of Warwick, Coventry, UK
Pubbl/distr/stampa	Oxford : , : Elsevier, , 2014
ISBN	0-08-096989-5
Descrizione fisica	1 online resource (xxxi, 1745 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	1810
Soggetti	Metallurgy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	e9780080969893_pa; Front Cover; Treatise on Process Metallurgy: Industrial Processes, Part A; Copyright; Dedication; Contents; Preface; Editor in Chief; Co-Editors-in-Chief; Contributors to Volume 3; Acknowledgement; The Review Committee; Chapter 1: Iron and Steel Technology; Contents; Chapter 1.1: Ironmaking; 1.1.1. Introduction; 1.1.1.1. Early History of Ironmaking; 1.1.1.2. Beginning of Blast Furnace Era; 1.1.1.3. Development to Present Days; 1.1.1.3.1. From Charcoal to Coke; 1.1.1.3.2. Ore Preparation; 1.1.1.4. Blast Furnace Process in Brief 1.1.1.4.1. Blast Furnace Process for Integrated Steelmaking 1.1.1.4.2. Blast Furnace Process Overview; 1.1.1.4.2.1. Charging; 1.1.1.4.2.2. Burden and Gas Movement; 1.1.1.4.2.3. Blast Furnace Zones and Principal Reactions; 1.1.1.4.2.4. Casting and Hot Metal Treatment; 1.1.2. The Ironmaking Blast Furnace; 1.1.2.1. Construction and Profile; 1.1.2.1.1. Throat; 1.1.2.1.2. Shaft; 1.1.2.1.3. Belly; 1.1.2.1.4. Bosh; 1.1.2.1.5. Tuyere Zone; 1.1.2.1.6. Hearth and Tap Hole; 1.1.2.2. Charging Equipment; 1.1.2.3. Lining and Cooling; 1.1.2.4. Evolution of Blast Furnace Dimension; 1.1.2.5. Auxiliary Units 1.1.3. Iron-Bearing Materials and Additives 1.1.3.1. Types of Iron Ores;

1.1.3.2. Agglomerates and Additives; 1.1.3.2.1. Sinter; 1.1.3.2.1.1. Sintering Process; 1.1.3.2.1.2. Iron-Bearing Materials; 1.1.3.2.1.3. Additives; 1.1.3.2.1.4. Fuel; 1.1.3.2.1.5. Return Fines; 1.1.3.2.1.6. Moisture; 1.1.3.2.1.7. Sinter Handling; 1.1.3.2.1.8. Sinter Quality; 1.1.3.2.2. Pellets; 1.1.3.2.2.1. Pelletizing Process; 1.1.3.2.2.2. Green Pellets; 1.1.3.2.2.3. Induration; 1.1.3.2.2.4. Pellet Quality; 1.1.3.2.3. Briquettes; 1.1.3.2.4. Slag Formers in Agglomerates; 1.1.3.2.4.1. Limestone; 1.1.3.2.4.2. Burnt Lime
1.1.3.2.4.3. BOF Slag
1.1.3.2.4.4. Olivine and Dolomite; 1.1.3.2.4.5. Other Additives; 1.1.3.2.5. Additives in Blast Furnace; 1.1.3.2.6. DRI and Scrap; 1.1.4. Reducing Agents; 1.1.4.1. Coke; 1.1.4.1.1. Coking; 1.1.4.1.1.1. Raw Materials and Blending; 1.1.4.1.1.2. Coke-Oven Batteries; 1.1.4.1.1.3. Heat-Recovery Cokemaking; 1.1.4.1.1.4. Byproduct Cokemaking; 1.1.4.1.2. Coke Characterization; 1.1.4.1.2.1. Composition; 1.1.4.1.2.2. Cold Strength; 1.1.4.1.2.3. Size; 1.1.4.1.2.4. Metallurgical Properties; 1.1.4.2. Injectants; 1.1.4.2.1. Pulverized Coal; 1.1.4.2.2. Plastic, Fluff, and Other Solids
1.1.4.2.3. Oil and Tar
1.1.4.2.4. Natural Gas; 1.1.4.2.5. Coke Oven Gas; 1.1.5. Counter-Current Movements of Burden and Gas; 1.1.5.1. Burden Descending; 1.1.5.1.1. Different Zones in Blast Furnace; 1.1.5.1.2. Charging; 1.1.5.1.2.1. Bell Top Charging; 1.1.5.1.2.2. Bell-Less Top Charging; 1.1.5.1.3. Burden Descending and Physical-Chemical Changes; 1.1.5.1.3.1. Throat and Shaft; 1.1.5.1.3.2. Cohesive Zone; 1.1.5.1.3.3. Dripping Zone; 1.1.5.1.3.4. Active Coke Zone; 1.1.5.1.3.5. Raceway; 1.1.5.1.3.6. Hearth Coke and Deadman; 1.1.5.1.3.7. Hot Metal and Slag; 1.1.5.2. Movement of Gas
1.1.5.2.1. Combustion

Sommario/riassunto

Process metallurgy provides academics with the fundamentals of the manufacturing of metallic materials, from raw materials into finished parts or products. Coverage is divided into three volumes, entitled Process Fundamentals, encompassing process fundamentals, extractive and refining processes, and metallurgical process phenomena; Processing Phenomena, encompassing ferrous processing; non-ferrous processing; and refractory, reactive and aqueous processing of metals; and Industrial Processes, encompassing process modeling and computational tools, energy optimizat
