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Nota di contenuto	Flash Reduction of Magnetite and Hematite Concentrates with Hydrogen in a Lab-Scale Reactor for a Novel Ironmaking Process -- Investigation of Coal Tar Pitch Binder for the Production of Formed Coal Briquettes for COREX from High Volatile Coal Powder -- Upgrading of Iron-Rich Titanium Minerals Using a Molten Salt Process -- Direct Electrolytic Production of Mo-Si-Ti-C Composites from Their Oxides/Sulfide/Carbon Mixture Precursor in Molten Salt -- Reduction Kinetics of Magnetite Concentrate Particles with H2 + CO at 1200 to 1600 °C Relevant to a Novel Ironmaking Process -- Advanced Oxygen Lances for Safer Furnace Tapping Operations -- Utilization of Pine Nut Shell for Preparation of High Surface Area Activated Carbon by Microwave Heating and KOH Activation -- Research on High Temperature Mechanical Properties of 50Cr5MoV Roll Steel -- Separation of Rhenium and Molybdenum from Molybdenite Concentrate

by Microwave-Assisted Roasting -- Active Oxidation and Fume Formation from Liquid SiMn -- Research on Enrichment of MFe and RO Phase from Converter Steel Slag by Super Gravity -- Volatilization of Rhenium from Molybdenite Concentrate by Oxidative Roasting -- Kinetic Investigation of the Electric Furnace Copper Slag Treatment -- The Extraction of Zinc from Willemite by Calcified-Roasting and Ammonia-Leaching Process Based on Phase Reconstruction -- An Investigation on Antimony Production by Using Niederschlag Process -- Oxygen-Rich Side Blow Bath Smelting Technology — New Developments in China -- Carbon Refractories in an Oxidizing Process? Copper Smelting in an Outotec® Ausmelt TSL Furnace with a UCAR® ChillKote™ Refractory System -- Enrichment of Gold in Low Grade Copper Matte from Arsenical Refractory Gold Concentrate via Matte Smelting Method -- Zinc and Refractories — A Nasty Relation -- Preliminary Study on Preparation of Al-Sc Master Alloy in Na3AlF6-K3AlF6-AlF3 Melt -- Effect of the Reductants on the Production of Iron Based Alloys from Mill Scale by Metallothermic Process -- Experimental Study on Iron-Based Alloy as Cladding Layer—Improving High Temperature Oxidation Resistance of Furnace Alloy -- Production of FeMn Alloys with Heat Treated Mn-Nodules -- Thermodynamic Analysis and Experiments on Vacuum Separation of Sn-Sb Alloy -- Simulation of Solidification Microstructure of 30Cr2Ni4MoV Steel Ingot under Different Intensities of Mechanical Oscillation -- Production of ZrB2-B4C Composite Materials via SHS Process -- Research on Microwave Roasting of ZnO and Application in Photocatalysis -- Reduction Kinetics of Hematite Concentrate Particles by CO+H2 Mixture Relevant to a Novel Flash Ironmaking Process -- SO3 Formation in Copper Smelting Process: Thermodynamic Consideration -- Effect of Oxidation on Wetting Behavior between Silicon and Silicon Carbide -- Effect of CaO/SiO2 and P2O5 on the Viscosity of FeO-SiO2-V2O3-CaO-P2O5 Slags -- Heat Losses to Furnace Coolers as a Function of Process Intensity -- Viscosity of Partially Crystallized BOF Slag -- Origin and Evolution of Non-Metallic Inclusions for Al-Killed Steel during EAF-LF-VD-CC Process -- The Dynamic Dissolution of Coke with Slag in Melting and Dropping Zone -- Research on Oxidation Kinetics of SPHC Steel at 500~900°C -- Experiment Research on Direct Reduction of Celestine by Rotary Hearth Furnace Process -- Influence of Slag Basicity on the Silicon Within the Stainless Steel Master Alloy Prepared by Smelting Reduction of Fe-Ni-Cr Sinters -- Reduction Behavior of Chromic Oxide in Ti-Bearing BF Slag -- Effects of Mineral Oxides on the Precipitation Micro-Morphology of Metallic Iron in the Reduction of Iron Oxides Under CO Atmosphere -- Influence of Operation Parameters on Mass Fraction of Sulfur in the Hot Metal in COREX Process -- Influence of Operation Parameters on Sticking Behavior of Pellets in COREX Shaft Furnace -- Relationship between Coking Properties of Lump Coal and its Pulverization in COREX Process -- Thermogravimetric Analysis of Coal Used in Rotary Kiln of Iron Ore Oxide Pellet -- Enhancing the Removal of Sodium and Potassium of Sinter by CO-Containing Flue Gas Circulation Sintering Process.

Sommario/riassunto

The technology, operation, energy, environmental, analysis, and future development of the metallurgical industries utilizing high temperature processes are covered in the book. The innovations on the extraction and production of ferrous and nonferrous metals, alloys, and refractory and ceramic materials, the heating approaches and energy management, and the treatment and utilizations of the wastes and by-products are the topics of special interests. This book focuses on the following issues: •High Efficiency New Metallurgical Process and Technology Fundamental Research of Metallurgical Process •Alloys and

Materials Preparation •Direct Reduction and Smelting Reduction •Coking, New Energy and Environment •Utilization of Solid Slag/Wastes and Complex Ores •Characterization of High Temperature Metallurgical Process.