

1. Record Nr.	UNINA9910337932003321
Titolo	10th International Symposium on High-Temperature Metallurgical Processing [[electronic resource] /] / edited by Tao Jiang, Jiann-Yang Hwang, Dean Gregurek, Zhiwei Peng, Jerome P. Downey, Baojun Zhao, Onuralp Yücel, Ender Keskinilic, Rafael Padilla
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-05955-3
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XXI, 817 p. 475 illus., 350 illus. in color.)
Collana	The Minerals, Metals & Materials Series, , 2367-1181
Disciplina	620.11
Soggetti	Materials science Metals Engineering—Materials Characterization and Evaluation of Materials Metallic Materials Materials Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part 1. Energy-efficient and Clean Metallurgical Technology -- Simplified Process for Making Anode Copper -- Techno-economic Analysis of Energy Recovery from Plastic Waste -- Development of Continuous Blast Furnace Slag Solidification Process for Coarse Aggregates -- An Innovative Oxygen-enriched Flash Smelting Technology for Lead Smelting and its Industrial Application -- Characteristics and Control Technology of Fine Particulate Matter (PM) of Iron Ore Sintering -- Sintering Bed Spraying Steam to Reduce NOx and Dioxin Emissions in Shougang -- Part 2. Simulation and Modeling of High Temperature Metallurgical Process -- Neural Prediction Model for Extraction of Germanium from Zinc Oxide Dust by Microwave Alkaline Roasting-Water Leaching -- Simulation of Velocity Field of Molten Steel in Electric Arc Furnace Steelmaking -- Thermodynamic Modelling of Magnesium, Calcium and Strontium-oxides Reduction Systems in Vacuum -- Metallization and Carburization Kinetics in DR

Shaft Furnaces. The Metcarb Model -- CFD Modeling of Flow and Chemical Reactions in a Submerged Lance Copper Smelting Furnace -- Numerical Simulation of Ultrasound-Induced Cavitation Bubbling in a Calcium Ferrite Melt -- Part 3. Alloys and Materials Preparation -- Synthesis of Nanocrystalline Carbide Ceramics via Reduction of Anion-loaded Activated Carbon Precursors -- Production of Lithium-Ion Cathode Material for Automotive Batteries Using Melting Casting Process -- Part 4. Fundamental Research on High Temperature Metallurgical Processing -- Degradation Mechanisms of Refractories in a Bottom Blown Copper Smelting Furnace -- Reaction Routes of CaO-Fe₂O₃-TiO₂ and Calcium Ferrite-TiO₂ System in Continuous Heating Process -- Thermodynamic Calculations on Electric Furnace Smelting Separation of Chromium-bearing Vanadium Titanium Magnetite -- Preparation for High Activity Lime and its Effect on Desulfurization of Hot Metal Pretreatment -- Part 5. Extraction and Recovery of Metals -- An Industry Overlook of Secondary Lead Pyrometallurgical Processing -- Recovery of Aluminium and its Compounds with Hydro and Pyrometallurgical Methods from Non-metallic Residue -- Purification of Molten Zinc Chloride-Alkali Chloride by Cementation Reaction -- Thermodynamic Analysis of Smelting of Spent Catalysts for Recovery of Platinum Group Metals -- Preparation of Titanium Foams through Direct Electrolysis of the Sintered CaO-TiO₂ in Molten Salt CaCl₂ -- Experimental Study on Oxidative Desulfurization and Selective Reduction of Molten Copper Slag -- Recycling SiO₂ and Al₂O₃ from the Metallurgical Slag of Nickel Laterite Ores in Molten Sodium Hydroxides -- Remove Sulfur in Copper Dross from Refining Lead by Converting Process -- Part 6. Treatment and Recycling of Metallurgical Slag/Solid Wastes -- Recovery of Fe-Cu Alloys from Copper Slags -- Physiochemical Properties of High Alumina Blast Furnace Slag -- Effect of Cooling Rate on the Acidolysis of Titania Slag -- Structural Analysis of Ge-containing Ferrous Calcium Silicate Magnesia Slag for Applications of Black Copper Smelting -- Selective Recovery of P and Mn from Steelmaking Slag by Carbothermic Reduction -- The Use of Zirconia-based Solid Electrolytes Oxygen Sensor in High Titanium Slag -- In-situ Observation of the Precipitation Behavior of Dy₂O₃ Containing Slag System -- Recovery of Zn and Mn from Spent Alkaline Batteries -- Part 7. Ironmaking, Steelmaking and Casting -- Optimization of Exothermic Riser Sleeve Design Parameters -- Assessment of Gas-Slag-Metal Interaction during a Converter Steelmaking Process -- On the Role of Nb on the Texture and Mechanical Properties of a Novel As-rolled Medium Carbon Wear Resistant Slurry Pipeline Steel -- A Statistical Analysis of Process Abnormalities in Slab Casting -- Effect of Density Difference on Particle Segregation Behaviors at Bell-less Top Blast Furnace with Parallel-type Hopper -- The Effect of Austenitizing Temperature on Hardenability, Precipitation and Mechanical Properties of Boron Bearing Cr-Mo Alloy Steel -- Part 8. Agglomeration and Direct Reduction of Complex Iron Ores -- Study on Direct Reduction Melting Separation-leaching Process of Disposal Rare Earth Composite Iron Ore -- Reduction Behavior of Garnierite Using Methane by Roasting-Magnetic Separation Method -- Effect of Calculation Method of CaO Addition on Liquid Phase Fluidity -- Effect of Carbon Coating on Magnetite Reduction -- Optimization Method for Iron Ore Blending Based on the Sintering Basic Characteristics of Blended Ore -- Study on Direct Reduction of Low-grade Iron Ore-coal Mini-pellets in Coal-based Rotary Kiln -- Part 9. Poster Session I -- Controlled Synthesis of TiC Nanoparticles Using Solid Oxide Membrane Technology in Molten CaCl₂ -- Effect of Chemical Components of Mould Flux on Dissolution Rate of Al₂O₃ into

Molten Flux for High Manganese High Aluminum Steel -- Effect of Temperature on Oxidation Behavior of Cr-Mo-V Steel with Different Cr Contents for High-speed Train Brake Discs -- Electrochemical Preparation of Ti₅Si₃/TiC Composite from Titanium-rich Slag in Molten CaCl₂ -- Evolution of Al-Ti-Mg-O Inclusions during Refining and Casting Process of Interstitial Free Steel -- Experimental Study on Carburization of Higher Vanadium-bearing Hot Metal -- Hematite Precipitation from High Iron Solution in Hydrometallurgy Process -- Influence On The Crystallization Phase Of Mold Flux By Magnetic Fields -- Kinetics Study on Limestone Decomposition in Early Converter Slag -- Mathematical Modeling and Analysis of Converter Slagging and Steelmaking Process by Replacing Part of Lime With Limestone -- Research of Digital Platform and Process Guidance Model in EAF Steelmaking Process -- Research on Factors Affecting and Prediction Model of Silicon Content in Hot Metal of Corex -- Studied on the Cooling Effect of CO₂ on the Temperature of Vanadium in Converter -- Study on Grain Size and Porosity of the Produced Lime from Limestone in Early Converter Slag -- Study on Reducing Al₂O₃ Inclusions by Optimizing Refining Slag -- Study on the Volatilization of Sb₂S₃ in Vacuum -- The Effects of ZrO₂, Y₂O₃ and Sc₂O₃ on the Properties of Mould Fluxes for High Manganese High Aluminum Steels -- Thermogravimetric Analysis and Kinetic Study of the Calcification Roasting of Vanadium Slag -- Viscosity of Mould Flux under Electromagnetic Field -- Part 10. Poster Session II -- Analysis of Microwave Drying Behavior of Nickel Laterite -- Analysis of Operational Parameters Affecting Metallization Degree of DRI in Reduction Shaft of COREX Process and Improvement Measures -- Dechlorination of Zinc Oxide Dust by Microwave Roasting with RSM Optimization -- Effect of TiO₂ on the Viscous Behavior of High Alumina Blast Furnace Slag -- Fundamental Research on the Iron Nugget Process from Carbon Composite Pellet -- Influence of Coke Quality on Main Technical Indexes of Blast Furnace -- Kinetic Analysis of Blast Furnace Dust Recycling with Flash Reduction Process at High Temperature -- Preparation and Characterization of Iron-coke Briquette -- Preparation of Oxidized pellets with Chrome Ore -- Research and Application of Sintering Surface Steam Spraying Technology for Energy Saving and Quality Improvement -- Research on Bonding Mechanism of Sintering Grate -- Research on Optimizing Sinter Ore Matching Based on the High Temperature Characteristic Numbers -- Research on the Mineral Composition and Microstructure Changes of Iron Ore Sinter during the Gas-Solid Reduction -- Roasting Kinetics of Molybdenite Concentrates -- Study on Influences of Different Ti-bearing Materials on MgO-bearing Pellets Metallurgical Properties -- Supergravity Separation of Pb and Sn from Waste Printed Circuit Boards -- The Effect of Temperature and Additive on Transport and Transformation of P of High-phosphorus Iron Ore during Carbothermic Reduction -- Thermodynamic Calculations on Direct Reduction of Chromium-bearing Vanadium Titanium Magnetite.

Sommario/riassunto

In recent years, global metallurgical industries have experienced fast and prosperous growth. High-temperature metallurgical technology is the backbone to support the technical, environmental, and economical needs for this growth. This collection features contributions covering the advancements and developments of new high-temperature metallurgical technologies and their applications to the areas of processing of minerals; extraction of metals; preparation of refractory and ceramic materials; sintering and synthesis of fine particles; treatment and recycling of slag and wastes; and saving of energy and protection of environment. The volume will have a broad impact on the

academics and professionals serving the metallurgical industries
around the world.
