

| | |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Record Nr. | UNINA9910164158803321 |
| Titolo | Light Metals 2017 // edited by Arne P. Ratvik |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017 |
| ISBN | 9783319515410 |
| Edizione | [1st ed. 2017.] |
| Descrizione fisica | 1 online resource (XXIX, 1492 p. 1429 illus.) |
| Collana | The Minerals, Metals & Materials Series, , 2367-1696 |
| Disciplina | 620.11011 |
| Soggetti | Metals Materials - Analysis Materials Metals and Alloys Characterization and Analytical Technique Materials Engineering |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and indexes. |
| Nota di contenuto | Part 1: Alumina & Bauxite: Digestion and Calcination -- CFB Alumina Calciners - New and Future Generation Opportunities for Green Field Refineries -- Evolutional Development of Alkaline Aluminosilicates Processing Technology -- Characterization and Ore Dressing of Bauxite from Brazil -- Process Optimization for Diaspore Digestion Equilibrium using Response Surface Methodology -- Thermodynamic analysis and formation law of Q phase of calcium aluminate clinker -- Leaching Behavior of Alumina from Smelting Reduction Calcium Aluminate Slag with Sodium Carbonate Solution -- Part 2: Alumina & Bauxite: Bauxite Residues Technology -- Security Disposal and Comprehensive Utilization of Bauxite Residues -- Bauxite Residue Amendment Through the Addition of Ca and OR Mg Followed By Carbonation -- Application of Tricalcium Aluminate Instead of Lime for the recovery of aluminum in Middle-low Grade Bauxite in Calcification-Carbonization Process -- Low Temperature Reduction of Hematite in Red-Mud to Magnetite -- Recovery of Iron-, Titanium-bearing Constituents from Bauxite Ore Residue via Magnetic Separation Followed by Sulfuric Acid Leaching -- Processing diasporic red mud by the calcification-carbonation method |

-- Research of Flocculants and Dewatering Additives for Filtration of Red Mud -- Characterization of activated alumina production via spray pyrolysis -- Part 3: Alumina & Bauxite: Non-traditional Resources -- New process research on aluminium production from non-traditional aluminum resource by microwave chlorination -- Opportunities of pseudoboehmite processing from aluminum content raw material at sintering method -- Chemical Alumina Preparation by Using High Alumina Content Fly Ash -- A Novel Process of Alumina Production from Low-grade Bauxite Containing Sulfur -- Iron separation from bauxite through smelting-reduction process -- Thermodynamic behavior of lime desulfurization in sodium aluminate solution -- Part 4: Alumina & Bauxite: Poster Session -- A study on optimization of processing parameters for synthesis of calcium hydroaluminosulfate using response surface methodology -- Part 5: Aluminum Alloys, Processing and Characterization: Alloy Development and Applications -- Design of New 6xxx Series Al Alloy Using the CALPHAD Thermodynamic Database -- Study of an Al-Ca Alloy with Low Young's Modulus -- Production Of 3004 Aluminum Alloy Sheet For Structural Applications From Twin Roll Casting -- Aluminum alloys with tailored TiB₂ particles for composite applications -- Development of low expansion and high strength aluminium hybrid composite -- Part 6: Aluminum Alloys, Processing and Characterization: Solidification and Casting -- A model for a-Al(Mn,Fe)Si crystals -- Casting Characteristics of High Cerium Content Aluminum Alloys -- In-situ observation of fragmentation of primary crystals by ultrasonic cavitation in water -- The enhancement of mechanical properties of A356 alloy solidified at lower cooling rate via effectively grain refinement -- Secondary Aluminum Alloys Processed by Semisolid Process for Automotive Application -- Integrated casting-extrusion of an AA6082 aluminum alloy -- On Porosity Formation in Al-Si-Cu Cast Alloys -- Part 7: Aluminum Alloys, Processing and Characterization: Characterization -- Algorithm for Finding the Correlation between the Properties of Wrought Aluminum Alloys, the Chemical Composition and the Processing Parameters -- Analysis of an aluminium alloy containing trace elements -- Determination of aluminum oxide thickness on the annealed surface of 8000 series aluminum Foil by Fourier Transform Infrared Spectroscopy -- Test Uncertainty in Chemical Composition Analysis -- Real Time 3D Imaging and Laser Marking System for Industrial Traceability -- Production and Certification of Arconic Certified Reference Materials -- Characterization of Large Strain Extrusion Machining (LSEM) of AA7050 -- Interaction between fatigue micro-cracks and inclusion/matrix interface in high-strength Al alloy -- Influence of trace element additionson Fe bearing intermetallic solidification of a 6063 Al alloy -- Part 8: Aluminum Alloys, Processing and Characterization: Heat Treatment -- THE OPTIMIZATION OF THE HOMOGENIZATION TREATMENT OF AA7075 -- Precipitation modeling and validation of Al-5%Cu-0.4%Mn alloy using quench factor analysis -- Young's modulus of Al-Si-Mg-Cu based alloys under different heat treatment processes -- Intergranular Corrosion Investigation on EN-AW 6082 Redraw Rod -- The influence of process parameters and thermomechanical history on streaking defects in AA6060 extrusions -- Effect of Heat-treatment on Microstructure and Mechanical Properties of Sonicated Multicomponent AlMgSiCuZn Alloy -- Effect of Interrupted Quenching on Al-Zn-Mg-Cu alloys -- Part 9: Aluminum Alloys, Processing and Characterization: Plasticity and Mechanical Behavior -- New Yield Criterion for Description of Plastic Deformation of Face-Centered Cubic Single Crystals -- Quantifying As-cast and Homogenized AA7050 Mechanical Properties through Compression

Testing -- Determining a Stable Texture Condition Under Complex Strain Path Deformations in Face Centered Cubic Metals -- Microstructural transition and elevated temperature tensile properties of modified Al-Si-Cu-Mg alloys -- Effects of alloying elements on anneal-hardening behavior of aluminum alloy foils -- Increasing strength and corrosion resistance of AlMgSi alloys by tailor-made thermomechanical processing -- Microstructural optimization of a High Mechanical Properties (HMP) aluminum alloy by using CobaPress™ process -- Cyclic Stress-strain Behavior and Low Cycle Fatigue Life of AA6061 Aluminum Alloy -- Part 10: Aluminum Alloys, Processing and Characterization: Poster Session -- Corrosion of Al-Mg Alloys in Ethanol -- Warm pressing of Al powders: an alternative consolidation approach -- Part 11: Aluminum Reduction Technology: Dry Scrubbing, Alumina Transport and Dissolution -- Spreading of Alumina and Raft Formation on the Surface of Molten Cryolite -- Fluoride Capture Capacity of SGA: The Interplay between Particle and Pore Size Distribution -- Predictive Formulae for the Competitive Adsorption of HF and SO₂ on Smeltergrade Alumina Used in Dry Scrubbing Applications -- Pot Gas Treatment at High Gas Temperatures -- Influence of Handling Parameter on Powder Properties -- Part 12: Aluminum Reduction Technology: Anode Effect and PFC Emissions -- Preventive Treatment of Anode Effects Using On-Line Individual Anode Current Monitoring -- Reduction in EGA Jebel Ali Potroom GHG Emissions -- Partial Anode Effect in a Two-Compartment Laboratory Alumina Reduction Cell -- Co-evolution of Carbon Oxides and Fluorides during the Electrowinning of Aluminium with Molten NaF-AlF₃-CaF₂-Al₂O₃ Electrolytes -- Part 13: Aluminum Reduction Technology: Cell Lining Materials -- Chemical stability of thermal insulating materials in sodium vapour environment -- AGING OF INSULATING LININGS IN ALUMINIUM ELECTROLYSIS CELLS -- Cathode Wear Based on Autopsy of a Shut down Aluminium Electrolysis Cell -- SPL Recycling and Re-Processing -- Alternative applications of SPL: Testing ideas through experiments and mathematical modeling -- Part 14: Aluminum Reduction Technology: Cell Voltage and Pot Control -- Clustering Aluminium Reduction Cells -- Application of Multivariate Statistical Process Control with STARprobeTM Measurements in Aluminium Electrolysis Cells -- Study Of Impact Of The Anode Slots On The Voltage Fluctuations Of Aluminium Electrolysis Cell Using Bubble Layer Simulator -- Detecting, Identifying and Managing Systematic Potline Issues with Generation 3 Process Control -- Predicting Instability and Current Efficiency of Industrial Cells -- Part 14: Aluminum Reduction Technology: Electrolyte and Fundamentals -- Sodium in Aluminium as a Cell Performance Indicator: A Quantitative Framework -- Bauxite processing via chloride route to produce chloride products and subsequent electrolysis of aluminium chloride to produce aluminium metal -- Stability of Chlorides in Cryolitic Electrolyte -- Role of Heat Transfer in the Formation of Carbon Oxides in Smelting Cells -- Part 15: Aluminum Reduction Technology: Modelling and Cell Design -- Improving The Understanding Of BUSBAR Design And Cell MHD Performance -- LES turbulence modeling approach for molten aluminium and electrolyte flow in aluminum electrolysis cell -- MHD of Large Scale Liquid Metal Batteries -- Low energy consumption cell designs involving copper inserts and an innovative busbar network layout -- Minimizing Cathode Voltage Drop by Optimizing Cathode Slot Design -- Part 16: Aluminum Reduction Technology: Potroom Operations -- Crane Electrical Isulation Monitoring in Potlines: New CANDI 4.0 Development -- Surviving an Extended Power Outage after a Break Down in the Sub Station -- Retrofit of Damaged Corner Risers by

Means of Bolted Connections -- Theory and Practice of High Temperature Gas Baking Technology for Alumminium Electrolysis Cells -- Part 17: Aluminum Reduction Technology: Technology Development -- IMPLEMENTATION OF D18+ CELL TECHNOLOGY AT EGA JEBEL ALI SMELTER -- Integrating a New Smelter Supervision HMI in Existing Control Systems at ALBRAS -- DX+ ULTRA – EGA HIGH PRODUCTIVITY, LOW ENERGY CELL TECHNOLOGY -- Potroom HF Emission Reduction by Anode Inert Tray Technology Performances of ALRO Industrial 1st of Class -- Enabling efficient heat recovery from aluminium pot gas -- The Successful Implementation of AP40 Technology at Kitimat -- Part 18: Cast Shop Technology: Continuous Strip Casting -- Effect of grain refiners on aluminum twin roll casting process -- Influence of Process Conditions on Segregation Behavior in Twin-Roll Casting of an AlFeSi alloy -- Effect of Magnesium Content on Microstructure and Mechanical Properties of Twin-Roll Cast Aluminum Alloys -- Influence of sticking on the roll topography at twin-roll casting of aluminum alloys -- Material Surface Roughness Change in Twin Roll Casti.

Sommario/riassunto

The Light Metals symposia at the TMS Annual Meeting & Exhibition present the most recent developments, discoveries, and practices in primary aluminum science and technology. The annual Light Metals volume has become the definitive reference in the field of aluminum production and related light metal technologies. The 2017 collection includes papers from the following symposia: Alumina and Bauxite Aluminum Alloys, Processing, and Characterization Aluminum Reduction Technology Cast Shop Technology Cast Shop Technology: Recycling and Sustainability Joint Session Electrode Technology The Science of Melt Refining: An LMD Symposium in Honor of Christian Simensen and Thorvald Abel Engh.
