1. Record Nr. UNISALENTO991000506499707536

Autore	Steeb, Willi-Hans
Titolo	Problems and solutions in theoretical and mathematical physics / Willi-Hans Steeb
Pubbl/distr/stampa	Singapore : World Scientific, c2003
ISBN	9812389903 (Vol. 1) 9812389881 (Vol. 2)
Edizione	[2nd ed]
Descrizione fisica	2 v. : ill. ; 23 cm
Classificazione	53(076) 530.15 QC20.82
Soggetti	Mathematical physics - Problems, exercises, etc
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes bibliographical references and indexes
Nota di contenuto	V. 1 : Introductory level V. 2 : Advanced level

2. Record Nr. UNINA9910298594703321

Titolo	Light Metals 2018 / / edited by Olivier Martin
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-72284-0
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (1,637 pages) : illustrations (some color)
Collana	The Minerals, Metals & Materials Series, , 2367-1696
Disciplina	669.72
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
Note generali	"TMS 2018 Annual Meeting and Exhibition in Phoenix and to present to you the proceedingns of Light Metals 2018."
Nota di bibliografia	Includes bibliographical references at the end of each chapters and indexes.
Nota di contenuto	Part 1. Alumina & Bauxite -- Roasting Pretreatment- low Temperature Digestion Method for Comprehensive Utilization of High-sulfur Bauxite -- Industrial Experience of Sinter Hydro-chemical Processing at Bogoslovsk Alumina Refinery -- Effect of Sintering Conditions on the Stability of 946-2CaO·SiO2 in High Sodium Carbonate Solution -- Research on Impurity Removal of Low Grade Bauxite -- Study on the Structure and Generation Mechanism of Intermediate (6AlO-OH) in Decomposition Process of Sodium Aluminate Solutions -- The Properties of Superfine ATH Precipitated by Carbonation Method -- Effect of Organic Impurity on Seed Precipitation in Sodium Aluminate Solution -- Fitness-for-service Assessment and Re-rating of Flawed Alumina Feeding Vessels -- Miniplant Tests of HCl Technology of Alumina Production -- Development and Usage of Detailed Models of Technology at RUSAL Alumina Refineries -- Features of Pseudoboehmite from Alumina Production -- Digital Transformation in Alumina Refining -- Thermodynamics Analysis on Process of Pelletizing Chlorination of Fly Ash -- Research on Alumina Preparation from

Aluminium Chloride Solution by Electrolysis Process -- How Digitalization Can Further Improve Plant Performance and Product Quality - Outotec Pretium Advisory Tool for Alumina Calcination -- Expertimental Investigation on Reduction of Cast Iron from Bayer Red Mud and Laterite Nickel -- Analyzing the Bauxite Residue Amendment through the Addition of Ca and Mg Hydroxides Followed by Carbonation -- Comprehensive Utilization of Red Mud: Current Research Status and a Possible Way Forward for Non-hazardous Treatment -- Alumina, Iron and Titanium Extracting from Bauxite Residue with Low Lime Sinter Method -- Developing New Process for Selective Extraction of Rare Earth Elements from Bauxite Residue Based on Functionalized Ionic Liquids -- Effects of Reductive Roasting with Sodium Salts on Leaching Behavior of Non-ferrous Elements in Bauxite Ore Residue -- Specific Features of Scandium Behavior during Sodium Bicarbonate Leaching of Red Mud -- Flotation Separation of Pyrite from Refractory High-sulfur Bauxite -- Research on the Desulfurization of High Sulfur Bauxite -- Research on the Interaction between 1-butyl-2-mercaptobenzimidazole and Pyrite -- Flotation of Low-grade Bauxite Using Modified Humics as Depressant -- Research on the Adsorption of Humic Acid on Pyrite Surface -- Experimental Investigation on Desiliconization of Low-grade Bauxite by Flotation Process -- The Impact of Backwater Iron Ions on Bauxite Flotation -- Part 2. Aluminum Alloys, Processing and Characterization -- Grain Boundary Precipitation and Fracture Behavior of Al-Cu-Li Alloys -- Comparison of Texture and Surface Finish Evolution during Single Point Incremental Forming and Formability Testing of AA 7075 -- Understanding the Co-precipitation Mechanisms of Al3(Sc, Zr) with Strengthening Phases in Extruded Al-Cu-Li Model Alloys -- Determining a Retrogression Heat Treatment to Apply during Warm Forming of a High Strength AA7075 Sheet Material -- Development of High-strength and High-electrical-conductivity Aluminum Alloys for Power Transmission Conductors -- The Combined Effects of Sr Additions and Heat Treatment on the Microstructure and Mechanical Properties of High Pressure Die Cast A383 Alloy -- Influence of Additional Elements (Si Ti and B) on the Castability, Corrosion and Mechanical Properties of A201 Alloys -- Effect of Ni Addition on the Solidification Process and Microstructure of Al-12%Si-4%Cu-1.2%Mn-x%Ni Heat-resistant Alloys -- Phase Formation of Monotectic Al-In and Al-Ga-In Alloys and Implications Thereof -- Investigations on Pb-free 6000 Series Aluminum Alloy for Machining Applications -- Optimization in Novel Partial-solid High Pressure Aluminum Die Casting by Taguchi Method -- Application of the Hot Stamping Process to Aluminum Alloy Structural Components -- Failure of 5000 and 6000 Series Aluminum Alloys in Modular Wastewater Treatment Aeration Tanks -- Grain Refinement of Al–Si–Mg Cast Alloys by Al3Ti3B Master Alloy -- Improving Bendability of Al-Mg-Si Alloy Sheet by Minor Alloying Element Addition -- Deep Drawing and Anodizing Quality Improvement in AA3003-O Alloy by Optimization of Homogenization, Rolling and Annealing -- Understanding Large-strain Softening of Aluminum in Shear at Elevated Temperature -- Assessments of Sc-containing Ternary Systems Al-Sc-Ti and Al-Sc-Zr within the Thermodynamic Database for Aluminium Alloys, TCAL5 -- Multiscale Model for Al-Li Material Processing Simulation under Forging Conditions -- Investigation of Effect of Aging Treatment on Deformation Behavior of Al-Mg-Si Alloy Using Quasi-2D Polycrystalline Sample -- Development of Innovative Aluminum Alloys with High Mechanical Properties -- A General Formulation of Eutectic Silicon Morphology and Processing History -- Evaluation of Hot Tearing Susceptibility of 6000 Series Aluminum Alloys Using Constrained

Solidification Test -- In-situ Fitness-for-Service Assessment of Aluminum Alloys Developed for Automotive Powertrain Lightweighting -- Research on the Effect of the Processing Parameters on Susceptibility of Liquation Cracking of Al Alloys during Refilled Friction Stir Spot Welding -- Factors Influencing the Cast Duration of Horizontal Continuous Ingot Casters -- On Si Redistribution during Friction Stir Processing of Cast Al-7%Si-0.4%Mg Alloys -- Equal Channel Angular Pressing of a Newly Developed Precipitation Hardenable Scandium Containing Aluminum Alloy -- Stiffness Improvement Through Alloying Elements in Al Alloys -- Formation Mechanism of Surface Segregation in Heated Mold Continuous Casting Al–Cu Alloy -- Effects of Extrusion and Heat Treatment Conditions on Microstructure and Mechanical Properties of an Al-Zn-Mg-Cu-Er Alloy -- Effects of Rare Earth Er Additions on Microstructure and Mechanical Properties of an Al-Zn-Mg-Cu Alloy -- Part 3. Aluminum Reduction Technology -- Maximizing Previous Pot Design to Have Higher Capacity -- On the Use of Multivariate Statistical Methods to Detect, Diagnose and Mitigate Abnormal Events in Aluminium Smelters -- Spike Detection Using Advanced Analytics and Data Analysis -- Speed, Agility and Simplicity (SAS) Recovery of Reduction Line-5 in Alba -- Partial Repair and Restart of a Damaged Aluminium Reduction Cell -- Discussion on Alumina Dissolution and Diffusion in Commercial Aluminum Reduction Cell -- Investigation of Alumina Concentration Gradients within Hall-Héroult Electrolytic Bath -- Study of Alumina Dissolution in Cryolitic Bath to the Vertical Soderberg (VSS) Aluminum Production Process -- Impacts of Sodium on Alumina Quality and Consequences for Current Efficiency -- Alucell: A Unique Suite of Models to Optimize Pot Performances and Design -- Anode Bottom Burnout Shape and Velocity Field Investigation in a High Amperage Electrolysis Cell -- CFD Modelling of Alumina Feeding -- Effect of Steel Multi-collector Bars on Current Density and Magnetohydrodynamic Stability in an Aluminum Reduction Cell -- Numerical Simulation Study on Gas Collecting System of 400kA Grade Aluminum Electrolytic Cell -- Study on 3D Full Cell Ledge Shape Calculation and Optimal Design Criteria by Coupled Thermo-flow Model -- The Successful Implementation of Energy Saving Technology Based on Steady Flow and Heat Preservation -- Current Efficiency in Hall-Héroult Cells: The Role of Mass Transfer at the Cathode -- Effects of Current Density on Current Efficiency in Low Temperature Electrolysis with Vertical Electrode Structure -- Relationship between Aluminium Electrolysis Current Efficiency and Operating Condition in Electrolyte Containing High Concentration of Li and K -- Evaluating Effects of Future Shared Mobility and Electrification Trends on Key Intermediate Indicator of Aluminum Transportation Demand: US Vehicle Fleet Size -- Improvement in Smelter Process Analysis through EGA Lab Modernization -- Two-stage Pot Gas Treatment Technology Allowing the Production of Sodium Sulfate -- Improved Abart Gas Treatment and Alumina Handling at the Karmøy Technology Pilot (KTP) -- Alternative Roof-vent Emission Monitoring Method -- SPL: An Update -- Bubble Dispersion States in the Zinc Oxide Desulfurization Injection Blow Tank -- Decision Matrix for Pneumatic Conveying and Distribution of Material -- Very Low Energy Consumption Cell Designs: The Cell Heat Balance Challenge -- APXe Cell Technology: 7 Years of Low Energy Operation -- Development and Industrial Application of NEUI600 High Efficiency Aluminum Reduction Cell -- RA-550 Cell Technology: UC RUSAL’s New Stage of Technology Development -- DX+ Ultra Industrial Version: Preheat Start up and Early Operation -- Selecting Technology for Achieving 300,000 T/Year - Why Do We Need to Compete Pot Technology? -- AP44 Development at Alma -- EGA New D20+

Technology with Reduced Energy Consumption -- Potline Start up without Anode Effect Frequency -- Thermo-electrical Modeling of an Aluminum Reduction Cell -- Restarting Electrochemical Cell with a Cold Metal (D18 Cell) -- Part 4. Cast Shop Technology -- Root Cause Analysis Findings of a Force 3 Explosion -- Condensation Warning System for Dry Material Storage -- A New Aluminium Crucible Skimmer (ACS) for Smelter Plants – Main Benefits Further to Two Years of Experimentation in Industrial Environment -- Drive-in Feeding of Crucibles for Casting Machine -- In-line Salt Fluxing Process with an FFDTM Industrial Experience with a Box-Type Degasser -- The "Alcoa Filter System": A Cost Effective Solution for Enhanced CFF Performance -- Continuous Centrifugal Casting: A Revolutionary Process for Casting Aluminium Tubes -- Development of a Prototype Unit for Continuous Centrifugal Casting of Aluminium Tubes -- Constellium’s R&D on the Use of Power Ultrasound in Liquid Aluminum: An Overview -- Molten Metal Cleanliness: Recent Developments to Improve Measurement Reliability -- On-site Benchmark of LiMCA II vs. LiMCA III for Monitor.

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 2018 collection includes papers from the following symposia: 1.Alumina and Bauxite 2. Aluminum Alloys, Processing, and Characterization 3.Aluminum Reduction Technology 4.Cast Shop Technology 5. Cast Shop Technology: Energy Joint Session 6. Cast Shop Technology: Fundamentals of Aluminum Alloy Solidification Joint Session 7. Cast Shop Technology: Recycling and Sustainability Joint Session 8. Electrode Technology for Aluminum Production 9. Perfluorocarbon Generation and Emissions from Industrial Processes 10. Scandium Extraction and Use in Aluminum Alloys .