

Table of Contents

Preface and Committees

Chapter 1: Chemical Engineering and Technologies

The Study on Application of N-P Intumescent Flame Retardant Agent in Waterborne Polyurethane X.C. Wang and L. Wang	3
Antihypertensive Evaluation of Lignin Related High-Added-Value 4-Aryl-Hexahydroquinolines X.H. Yang, G.M. Xiao, Z.M. Wang, Y.H. Zhou and G.D. Feng	7
Application of the Enzymolysis and Membrane Technology in Glucan Extraction and Purification from <i>Grifola frondosa</i> C.B. Zhou, Z.P. Xu, W.J. Feng and X.Q. Zhang	11
Chemical Composition of the Essential Oil of Fresh Wild <i>Syringa pubescens</i> Flowers from China A.N. Yu and X.Z. Yang	15
Chemical Reaction and Fluid Flow in a Carbon Monoxide Boiler(II) Chemical Reaction Analysis C.L. Yeh	19
A Continuous Process for the Preparation of Pyridine from Tetrahydrofurfuryl Alcohol with (MoO₃-NiO) / Al₂O₃ as Catalyst L. Zhang, S.X. Meng, Y.Q. Feng, B. Zhang and Z. Xu	27
Adsorption of Methyl Orange from Solution by IOCZ in Batch Mode: Equilibrium Study S.H. Chen, Y.B. Jiao, X.N. Zhang, Y.Y. Su and R.P. Han	33
Advances Research on Identification Method of Fluidized Bed Flow Pattern T. Zeng, S.B. Liu and W. Yang	37
Analytical Heterogeneous Extended Langmuir Model: Effect of Unilan Parameters Q.L. Feng, Y. Jia, J.C. Yu, L. Yang and P. Ning	41
Analytical Method of Gliotoxin Content by HPLC X.Q. Zhang, Z.P. Xu, C.L. Yang, J.P. Wang and Z. Wei	46
Applicability of Emulsion Viscosity Models to Crude Oil Emulsion L.P. Guo, L. Wang and Y.M. Zhang	50
Concentration of DHA and EPA from Marine Fish Oil by Urea Complexation C.Z. Zhang, M. Chen, Z.G. Mao and G.R. Zu	54
Decolorization of Direct Yellow R Dye from Aqueous Solution by Aluminum Anode Electrochemical Q.P. Nguyen, Z.N. Sun and X.M. Hu	58
Degradation of Polyacrylamide in Oil Wastewater by Electrocatalytic Oxidation L.J. Yang, Y.Y. Li, M. Tian, J. Wang and H.H. Cui	64
Determination of Paeoniflorin and Paeonol in Houyinan Tablet by UPLC C.Q. Yu, H.Q. Lin, Y.H. Hou, Z.F. Shi and D.S. Lin	68
Dissolution Behaviour and the Solution Property of Cellulose in NaOH/Urea/Thiourea Aqueous Solvent H. Li, H.F. Li, X. Zhong, M.E. Gibril, X.D. Li, Y. Zhang, K.Q. Han and M.H. Yu	73
Effect of Carrier Surface Modification on the Resultant Antibody to Folic Acid Q.S. Tang, H.T. Lei, L.B. Huang, Y.M. Sun and J.Y. Yang	77
Evaluation of the Thermal Stabilization Effect of the Bis (Mercaptoethanol Oleate) Dimethyl Tin on Polyvinyl Chloride J.P. Liu, H.Z. Shang, X. Song, W. Yuan and S.M. Zhou	81
Evaluation of Thixotropic Models of Waxy Crude L.P. Guo, L. Wang and Y.M. Zhang	85
Experimentation and Mathematical Model Reseach on Air Gap Membrane Distillation Y. Guan and H.J. Cui	89

Extraction and the Chemical Composition Analysis of the Essential Oil Flowers of <i>Ficus hookeriana</i> Corner	
G.Q. Wei, R. Zheng and X.H. Yang	94
Green Synthesis of Poly(μ-Dioxanone)-Modified Cellulose by Lipase-Catalyzed Ring-Opening Polymerization in Ionic Liquid	
J. Zhu and X.L. Wang	100
Influence of Sulfide on Oxygen Reduction Reaction in 3.5% Sodium Chloride Solution	
S.Q. Chen, D. Zhang and J.J. Wu	104
Injectable Surfactant Included-Virgin Coconut Oil with and without Ibuprofen	
S. Anuchatkidjaroen and T. Phaechamud	108
Kinetics on the Isothermal Decomposition of Oil Shale	
H.Q. Xue, H.Y. Wang, G. Yan, W. Guo, X.B. Li and H.C. Wang	112
Mercury's Leaching Contamination in Soil Environment	
L.Z. Ma, J.M. Guo, Y.J. Zhang, Q.F. Cui, M.H. Liu, H.B. Wang and W. Bai	117
Novel Biobased Materials from Tung Oil-Based Monomer and Tung Oil-Modified Unsaturated Polyester	
C.G. Liu, Y.H. Zhou and L.H. Hu	121
Perspectives on Physicochemical Properties and Application of Biodiesel Blends	
Y.H. Zhao and J.X. Zhang	125
Preparation and Application of the Amino Silicone Oil / Acrylic Emulsion	
Y.J. Tan, C.N. Liu and X.N. Chen	129
Preparation of Biodiesel from Crude Rubber Seed Oil by Alkaline Transesterification	
H. Wang, Y.L. Sun and L. Zhang	133
Protein Hydrolysate from Brewer's Spent Grain and its Inhibitory Ability of α-Glucosidase	
H.J. Lin, L. Li, Y.J. Tian, X. Zhang and B. Li	138
Research on the Utilization and Industry Development Strategies of Fluorite Resources in China's Fluorine Chemical Industry	
S.Y. CHEN and S.T. Zhang	142
Role of Colloidal Silicon Dioxide in Eudragit <i>In-Situ</i> Forming Gel	
J. Mahadlek and T. Phaechamud	146
Simultaneous Determination of Hydrochlorothiazide and Propranolol Hydrochloride in Powder Mixture and Matrix Tablet Using First Derivative Ultraviolet Spectrophotometry	
C.E. Choncheewa and T. Phaechamud	150
Study on "Vacuum Migration" of the Desorption of Ethanol-Loaded Activated Carbon by Microwave Irradiation	
Q.L. Feng, L. Yang, Y. Jia, J.C. Yu and P. Ning	154
Study on Processing of Plantation Fir Scrap Liquefaction by Ionic Liquids	
H.L. Xie, Y.L. Wu, J.H. Huang and L.L. Zheng	160
Study on Synthesis of Cationic Water in Water Polyacrylamide Emulsion Strength Agent	
Y.S. Ma, L.T. Wang, X.H. Sun, N. Liu and G.L. Song	164
Study on the Gelation Properties of the Glucan from <i>Sclerotium rolfii</i>	
B.Q. Wang, Z.P. Xu and N.N. Liu	168
Study on Vanadium Solution Dissolved Sediment in Wastewater from Vanadium Precipitation	
Z.X. Wu	172
Supramolecular Assembly of Functional Cholesteryl Substituted Luminol Derivative in Organized Molecular Films	
J.X. Zhou, T.F. Jiao, A. Li and Y.Y. Xing	176
Synthesis and Adsorption Properties for Ag(I) of Pyridinedicanbnyl Thiourea Resin	
Z.N. Wang, H. Zhong and S. Wang	180
Synthesis and Characterization of Hyaluronic Acid for Biomedical Application	
D. Lee, M. Nurunnabi, J. Hwang, E.S. Chung, M. Rahmatullah, K.M. Huh, K.S. Kwak and Y.K. Lee	185
Synthesis and Crystal Structure of 2-Hydroxyl-4-Methyl-Thioxanthone	
Y.Z. Jiang, K. Xiong, Y. Zou and X.L. Gao	189
Synthesis and Crystal Structure of a New Cu²⁺ Complex	
H.Y. Xu, Y.Z. Jiang, Y. Zou and L.Q. Zhang	193

Synthesis of Biodiesel by Different Carriers Supported KOH Catalyst L.M. Yang, P.M. Lv, Z.H. Yuan, W. Luo, H.W. Li, Z.M. Wang and C.L. Miao	197
Synthesis of n-Amyl Chloroacetate Catalyzed by Activated Carbon Supported Phosphotungstic Acid S.P. Wang, Y.F. Wang, H.N. Wang and J.J. Li	202
Synthesis Study of the Antioxidant of Tetrakis(2,4-di-tert-butyl phenyl)-4,4'-Biphenylenediphosphonite Esters Y. Li, J. Zhao, Q. Yu and Z.W. Wang	206
Synthesis, Characterization and Antitumor Activities of Cis-Ammine Gallic Acid(cyclohexylamine)Platinum(II) Q.K. Wang, S.P. Pu, Y.N. Li, J. He, L.M. Zhou, Z.B. Zhu, X.J. Li and Q. Jin	210
Study on Decolorization for Dye Wastewater by Adsorption - Microwave Degradation Activated Carbon from Bean Dregs Y.H. Shui, H.Y. Song, X.L. Feng, Q.Q. Li and Y. Jiang	214
Study of Microwave Synthesis of 2 - Hydroxy Phosphono Acetic Acid Process Q.Y. Zhang, J.S. Mo and G.X. Zhang	219
Preparation and Application Study on the Coalmine Wastewater Flocculant - PAM/OMMT S.F. Shi, L. Zheng, Y.Q. Wang, J.Y. Wang, R.Q. Yao, J.J. Jiang and L.J. Li	223
Kinetic Study of the Esterification Reaction of Ethylene Glycol with Phenyl Phosphonic Acid and Benzene Phosphinic Acid Y. Li, X.S. Kong, Z.W. Wang and Q. Yu	228
The Study on Moisture Adsorption of Oxidized Activated Carbon K. Wang, W.L. Wang, J.F. Lu and J. Ding	233
Phenolic Foam from Oxidatively Degradated Lignosulphonate L.H. Hu, Y.H. Zhou, R.J. Liu and M. Zhang	238
Study on Influence Factors in Flocculation Conditions of Bioflocculant L.X. Li, Y.J. Liu, G. Ren, Z.W. Song, X.M. Yang and Y. Liu	242
Preparation of Polycarboxylate Terpolymer High Performance Water Reducer of MA-AA-F108 J.L. Song, H.P. Wen, C.L. Lv, Z.M. Zhou and W.G. Li	246
Reusable and Efficient PS-Supported Acidic Ionic Liquid Catalyst for Mononitration of Toluene L.X. Li, Q.L. Ling, X.D. Xing, Y. Zhang and Z.L. Liu	252
Preparation and Properties of Cross-Linked Enzyme Aggregates of Cellulase B. Li, S.L. Dong, X.L. Xie, Z.B. Xu and L. Li	257
Toxic Gas Continuity Diffusion Algorithm of Multi-Tanks Based on Meshing Technique H.D. Wang and T.J. Cui	261
Study on Application as Paper Strengthening Agent of Homemade CPAM Emulsion with other Cationic Strengthening Agent Y.S. Ma, L.T. Wang, X.H. Sun, J.Q. Zhang and S.R. Zhang	265
Rapid Analysis of the Main Components of Glycyrrhizae Uralensis Fisch by UPLC/Q-TOF-MS Z.F. Shi, Y.F. Feng, W. Rui, L. Wang, X.M. Zhang and L. Han	269
Adsorption Kinetics and Thermodynamics of Methyl Orange on Ethylenediamine-Modified Chitosan Magnetic Nano-Adsorbent Y.H. Chen and S.Q. Hu	273
Adsorption Properties of Formaldehyde by Organic Modified Zeolite Y.X. Zheng, H. Ding, H.N. Luo and M.M. Wang	277
Characterization of Lanthanum Nitrate Modified CaMgZn Mixed Oxide Catalysts for Synthesis of Biodiesel X. Li, Z.Y. Zhou, L.W. Zhu and J.X. Jiang	283
Study on the Chemical Modification of Cellulose in Ionic Liquid with Maleic Anhydride H.F. Li, H. Li, X. Zhong, X.D. Li, M.E. Gibril, Y. Zhang, K.Q. Han and M.H. Yu	287
Synthesis and Catalytic Performance of Al-Pillared Clays Supported Fe₃O₄ Nanoparticles G.H. Wang, Y.Z. Lu, W.B. Li, X.Q. Liu and M.D. Sun	292
Synthesis of 1,4-Bis(3-amino-5-trifluoromethylphenoxy)Benzene and Properties of the Polyimide Film Therefrom Y.H. Lu, B. Wang, G.Y. Xiao and Z.Z. Hu	297

The Effects of the Reaction Conditions on the Grafting Degree of SiO₂-g-PMAA Particle K.H. Zhang, H. Xiao and J.J. Du	301
Determination of Organochlorine and Pyrethroid Pesticides Using Membrane-Protected Multiwalled Carbon Nanotubes Solid Phase Membrane Tip Extraction W.H. Gao, F.F. Li, S. Xiao, T.F. Chen, X.S. Zhang, W.Q. Zhang and Y.W. Chen	305
Electroreduction Behavior of Acrylonitrile in BmimBF₄ L. Chen, X.B. Mao, Y.Q. Chu, S. Chen and C.A. Ma	309
Pd-Only Catalyst Modified by BaO with Co- Precipitation and Impregnation Methods towards the Methanol Fuel Emission Control X.Q. Zhang, Z.X. Ye, C.H. Xu, M. Zhao and Y.Q. Chen	313
Studies on Sonogashira Coupling Reaction of Dibenzoporphyrin J.Y. Yan, Y.Q. Feng, F.Q. Zhou, Y.W. Chang and B. Zhang	317
Synthesis and Characterization of a Novel Alkaline Earth Metal Complex H.F. Yang, S.X. Ren, H. Li and J.J. Shen	322
Synthesis of Functional Ionic Liquids by Thermal Heating and Ultrasonic-Assisted Methods Z. Zhang, Y.H. Li, H. Xiao, C.Z. Tu and C.H. Wang	326
Synthesis of Starch Graft Copolymer Dispersant and its Application Performance in Coal-Water Slurry G.H. Zhang, F. Zhao and J.G. Li	330
Synthesis and Evaluation of Sulfonated Humic Acid-Acrylic Acid Graft Copolymer Applied as Dispersant in Coal-Water Slurry J.G. Li, G.H. Zhang, L. Liu and F. Zhao	334

Chapter 2: Materials and Alloys

Analysis on Crack Propagation Mechanism of Nano-Single Crystal Copper about Temperature Influence G. Li, Q.L. Zhang, M. Chen and L.Y. Zhou	341
"HaiYangShiYou 115" Anchor Chain Broken Wire Cable Material Test and Breakage Analysis X. Cao, H. Pan and H. Wang	345
DFT Study on Structures, Stabilities and Electronic Properties of Bromo Silsesquioxanes Si_{2n}O_{3n}Br_{2n} (n=1-5) S.Y. Yu, C.G. Zhang and X. Yang	349
Effect of Citric Acid on Electrochemical Properties of Spinel LiMn₂O₄ Prepared by Solid-State Combustion Synthesis X.Y. Zhou, M.M. Chen, C.W. Su, Y. Xia, X.Z. Huang, Y.J. Zhang and J.M. Guo	353
Effect of Contact Characteristics on the Friction and Wear Behaviors of Stainless Steel/Copper-Impregnated Metalized Carbon under Electric Current T. Ding, G.X. Chen, Q.D. He and W.J. Xuan	359
Effects of Annealing on Mechanical Properties in Ultrafine-Grained Cu–Al Alloy Y. Long, Y.L. Gong, S.Y. Ren, X.X. Wu and X.K. Zhu	363
Effects of Nano-SiO₂ in Electrolytes on Surface Properties of Micro-Arc Oxidation Ceramic Coatings Formed on New Casting Aluminum Alloy X.S. Zhou, X.Y. Zhang and D.F. Wu	368
Effects of SiO₂ and Al₂O₃ Contents of Converter Slag on Metallurgical Properties L. Li	373
Electrical Discharge Machining of Nickel-Based Super Alloy L. Li, R.G. Hou and Z.W. Sima	378
Electrochemical and Gaseous Hydrogen Storage Capacities of As-Spun Nanocrystalline and Amorphous Mg₂Ni_{0.6}M_{0.4} (M=Cu, Co) Alloys Z.H. Hou, Y. Zhang, Y. Cai, F. Hu, G.F. Zhang and X. Li	382
Experimental Study on Rutile TiO₂ Surface Coated with Al₂O₃ and ZrO₂ Z.Q. Luo, X.H. Chen and L. Li	387
Fabrication of TiO₂ Nanotubes by Anodic Oxidation for the Dye Sensitized Solar Cell Application W. Cong, E.X. Han and J. Li	391

Hydrothermal Synthesis of Mesoporous Al₂O₃: Influences of pH Values and Aluminum Precursors	396
H.P. Liu	
Impact of H₃BO₃ on Foaming Action of CaCO₃ in Borosilicate Foam Glasses	401
S.J. Liu, G.Z. Fu, J.X. Shen and J. Zhang	
Impact of Melt Spinning on Electrochemical Hydrogen Storage Characteristics of Mg₂₀Ni₉M₁ (M=Cu, Co) Alloys	405
Y.H. Zhang, H.W. Shang, G.F. Zhang, T. Yang, Z.H. Hou and D.L. Zhao	
Improving Corrosion Resistance of the Hot-Dip Aluminum Coating on 22MnB5 Steel Surface	410
C.Y. Wang, P. Zhang, H.Y. Zhao, F. Han and L. Li	
Influence of Heating Temperature on Microstructure Characteristics of Directionally Solidified Ni-45Ti-5Al Alloy	414
X.L. Zhang, R.L. Li, C.Y. Yang, X.F. Chen and H. Zhang	
Influences of Physicochemical Properties of ZnO on the Adsorptive Desulfurization Performance of Ni/ZnO Adsorbent	418
Z.Y. Liu	
Microemulsion Method Preparation Zn_(1-x)S:Cu_x(0.001	422
Z.L. Wang, Y. Liang, S.Q. Wang and Y.L. She	
Microstructure and Corrosion Resistance of Black Microarc Oxidation Ceramic Coatings on Magnesium Alloy	427
S.X. Yu, R.J. Zhang and Q.Y. Lv	
Microstructure Evolution of Nd in Spray Deposited Magnesium Alloy	431
Z.L. Li, H.P. Ren, Z.L. Jin, T.L. Wang, W. Chen, H.Y. Xin and J. Zhai	
Microstructure of Casting and Solid Solution of Cu-7.5Ni-5.0Sn Alloy	436
R.Q. Liu, S.L. Yang, L. Chen, W.B. Xie, Y.S. Yu, H.R. Wang and Y.S. Deng	
Microstructures and Damping Properties in Ni-Al-Based Alloys	440
Z.C. Zhou, Q.Z. Wang, J. Du, Y.J. Yan, S.Y. Gu and H. Yang	
Molecular Dynamics Simulation of Thermoelastic Coupling Characteristic for Low-Dimensional Nano-Rod under Thermal Shock	444
R.H. Xia, X.G. Tian, Y.P. Shen and W.Q. Li	
Multiple Adiabatic Shear Bands in Ti-6Al-4V Targets under Ballistic Impact	448
K. Sun, X.D. Yu, S.H. Li, C.W. Tan and F.C. Wang	
Photoisomerization of some Functional Azobenzene-Containing Metal Complexes with Different Substituted Groups	453
J.X. Zhou, T.F. Jiao, F.Y. Wang and X.H. Li	
Preparation and Characterization of Sro-Na₂O-Fe₂O₃-P₂O₅-SiO₂ Ferrimagnetic Glass-Ceramics for Hyperthermia Application	457
J.A. Liu, X.N. Yang, M.M. Zhang and W. He	
Preparation and Microanalysis Study of Nano-Hap/Cs-Chs Composites Materials	463
M.D. Qiu, X.Y. Wang, Y.Q. Zhai and Z.H. Yao	
Preparation and Properties of Cu-Cr Alloy Coating on Cu Matrix by Laser Surface Alloying	467
B.H. Tian, Y. Zhang and Y. Liu	
Preparation and Property Study of CuCr Alloy Based on SHS	471
H. Yang, G.D. Zhang and S.W. Guo	
Preparation of TiO₂ Nanotubes by Ionic Liquid Assisted Anodic Oxidation Method	475
M. Tian, J.Y. Liu, Y.L. Jiang, L.J. Yang and R.H. Cui	
Research of Cu-15Ni-10Mn Alloy As-Cast	479
W. Cai, Y. Wu, S.L. Yang, D. Xu, Z.B. Chen, Y.S. Deng and P. Luo	
Research on Effects of Annealing and Al Gettering on Electrical Properties of Upgraded Metallurgical Grade Multicrystalline Silicon	483
J.F. Zhang, W.H. Ma, X.H. Chen, C. Zhang and K.X. Wei	
Research on Tribological Properties of Nano-SiO₂/Cu Composites	487
J.H. Du, Y. Xu and Y.Y. Li	
Study of Hydrophilic Films on Copper Tube	491
Q.Y. Zhang, Z.M. Chen and M.L. Qi	
Study on Composite Coating of α-PbO₂-Co₃O₄-CeO₂ on Stainless Steel	495
F.G. Yuan, B.M. Chen, F.B. Shi, Z.C. Guo and R.D. Xu	

Study on Conductivity of Plain Woven Fabric of Embedded Silver-Plated Fibers of Different Twists M.M. Lin, Y. Xie, L. Du and F.Y. Zou	500
Study on Microstructure of Several Nb-Ti-Cr-Al as-Cast Alloys Y.Q. Wang, Z.G. Liu, B.S. Sun and D.X. Wang	504
Synthesis and Its Exchange Capacity for Li⁺ of Mg_{0.75}Ti_{1.125}O₃ J.H. Jiang	510
Synthesis and Properties of Highly Oriented Lead Barium Titanate Thin Film on MgO(100) by a Nonaqueous Sol-Gel Process H. Zhu, Z.J. Guo, W.D. Yang and W.F. Chang	514
The Effect of Sintering Temperature on the Mechanism of Metal Composite and Self Toughening and Toughening Si₃N₄ Ceramics Coupling R.M. Yin, F.B. Ji, Q.L. Hou, L. Jing and L.Z. Chen	519
The Preparation and Characterization of LiFe_{0.98}Mn_{0.02}PO₄/C by Spray-Drying and Low Temperature Reduction Route J.F. Zhang, B. Zhang, X.Y. Guo, H.Z. Chen, J.L. Wang, C. Shen and J.C. Zheng	525
The Preparation Research for IT-SOFC Anode Material LSCM R. Li, X.H. Chen, W.H. Ma, J. Xing, J.J. Yang and J. Yu	529
The Study of Edge Crack on Hot Strip Steel for CSP Q.C. Peng, Z.B. Tong, L. Yang, B.Y. Liu, L. Qian and J.P. He	533
Synthesis and Characterization of Quaternary Ti-Si-C-N Film Deposited by Middle Frequency Magnetron Sputtering J.L. Jiang, D. Chen and W.J. Zhu	540
Morphology-Controlled Fabrication of CuO Architectures L.X. Yang, B. Liu and G.H. Li	544
Microstructure and Mechanical Properties of Al₂O₃/NiAl <i>In Situ</i> Composites by Hot-Press-Aided Reaction Synthesis G.Q. Qi, F.S. Shangguan, L.N. Yang, Q. Bai and G. Wu	548
Effect of the Short Fiber on the NR Composite and the NR-SBR Composite C.J. Liu	552
Effect of Elements on Characteristics and Structure of Cu-22.7Zn Brass As-Cast Y. Liu, L. Chen, Y.L. Liu, Z.B. Chen and Y.S. Deng	556
Nano-MgO Templated Mesoporous Carbon as Anode Material for Li-Ion Batteries L. Shi, C.L. Miao, B. Xu and S. Chen	561
Study on Carbon-coating Li₃V₂(PO₄)₃ Cathode Materials Prepared with Different Carbon Sources Y.J. Li, L. Hong, J.Q. Sun and F. Wu	565
The Preparation and Characterization of LiFe_{0.98}Ni_{0.01}Nb_{0.01}PO₄/C by Carbon Reduction Route J.F. Zhang, B. Zhang, X.Y. Guo, J.L. Wang, H.Z. Chen, C. Shen and J.C. Zheng	570
Photochemical Events during the Photosensitization of Hypocrellin A on ZnS Quantum Dots W. Liu, X.L. Chen, L.S. Yang, J.C. Zhang, P. Yi, A.P. Fan and H.P. Yan	574
Preparation and Properties of ZnO by Ionic Liquid Assisted Sol-Gel Method Y.L. Jiang, J.Y. Liu, M. Tian, L.J. Yang and R.H. Cui	578
Welding of Fe-Al Intermetallic Compound and Steel by SPS Technology G.D. Zhang, Y.D. Xiao, N. Liu and M. Hong	582
Study on Microstructure and Oxidation-Resistance of Superalloy Coating with Ni-Base Substituting for Co-Base C.L. Hu and S.L. Hou	586
Fabrication Lead Dioxide Coating by Pulse Current Method X.D. Lv, X.T. Yuan, Z.Q. Hua, L. Wang, T. Li, Y.G. Zhou and Z.W. Wei	590
Effects of Sputtering Conditions on Microstructure and Ferroelectric Properties of RF-Sputtered Bi_{3.25}La_{0.75}Ti₃O₁₂ Thin Films Y.Y. Wu, X.T. Yuan, Z.Q. Hua, T. Li and L. Wang	595
Using Ring Stiffness to Calculate the Elastic Modulus of Steel-Plastic Composite Pre-Insulated Pipe C. Yang, F. Wang and G.W. Wang	602

The Effect of Annealing on Nanostructured Copper Alloys Y.S. Ren, Y.L. Gong, X.X. Wu, Y. Long, L.P. Cheng and X.K. Zhu	606
Preparation and Characterization of $\text{LiMn}_{2-x}\text{Mg}_x\text{O}_4$ by Low-Temperature Flameless Solution Combustion Synthesis M.M. Chen, X.Y. Zhou, X.Z. Huang, M. Huang, C.W. Su, J.M. Guo and Y.J. Zhang	611
Thermodynamic Analysis of the Reduction of WO_3 by Al Powder L.P. Chen, Y.H. Gao and B.T. Su	616
Comparison with Performance of Bamboo Fiber Reinforced Starch-Based Foams with Different Foamer G.S. Zeng, R.Z. Lin, L.J. Zheng, G. Meng and L. Chen	620
Effect of Electron Beam Irradiation on the Polypropylene/Syndiotactic 1,2-Polybutadiene Blends: Radiation Stabilization of Polypropylene M. Li, L.G. Xiao and H.K. Zhao	627
Homogenization Analysis Model for Granule System by Introducing Shape Parameters Z.H. Wei, M.S. Wang and D.L. Zhang	632
Hypernormal Form at Cubic of a Rectangular Symmetric Cross-Ply Laminated Composite Plate W.Y. Jia, J. Li and B. He	641
Influences of Model's Shape on Molding Time in Glass Molding Press K.J. Zhu, S.H. Yin, Y.F. Fan, F.J. Chen, J.W. Yu and Y.J. Zhu	645
Interfacial Assembly and Coordination of a Series of Schiff Base Compounds with Aromatic Spacer J.X. Zhou, T.F. Jiao, A. Li, X.H. Li and X.D. Bai	649
Multi-Trait Associated Selection of the <i>Larix</i> Construction Timber Superior Families Y.X. Li, H.L. Weng, F.D. Wang, H.M. Wang and X.C. Zhou	653
Preparation and Characterization of CaSiO_3 /Natural Rubber Composite M. Zhao, P. Xu and Y. Chen	659
Reinforcement of NR with ENR Modified RHA Z.Q. Zeng, H.C. Liu and H.P. Yu	663
Research on LB Films of Two Schiff Base Compounds with Alkyl Chains and Different Azobenzene Substituted Groups J.X. Zhou, T.F. Jiao, X.H. Li and F.Y. Wang	668
Research on the Preparation of Slag Wool Fiberboard with Sodium Silicate H.W. Xing, X. Wang, W. Zhang and J.H. Wu	672
Stress Intensity Factor of Thermal Fatigue Crack in High Temperature M. Yan, H.C. Li and L. Li	677
Study of an Inorganic Ion Exchanger $\text{Mg}_{0.5}\text{Ti}_{1.25}\text{O}_3$ J.H. Jiang	681
Study on Cu^{2+} Absorption Characteristics of Bentonite - Acrylic Acid Resin K.S. Zuo, J.C. Liu and P. Shang	685
Study on Gas-Liquid Inclusions in Quartz Sand under Microwave Field Q.L. Hou, J. Li, R.M. Yin, L.Z. Chen, L. Li and F.B. Ji	689
Study on Kinetics of Reaction between ZrNi_5 and Water Vapor Y. Yao, D.L. Luo, Z.Y. Huang and J.F. Song	694
Study on Performances of Cyanethyl Chitosan Fiber Prepared from [Asp]Cl Ionic Liquid D.Z. Xu, T. Zhao, Z.C. Liu, L.N. Bai and J. Guo	698
Study on the Comfort Properties of Embedded Weaving for Photocatalyst Fiber Filament Fabric X.L. Ye, L. Du, Y. Xie and F.Y. Zou	702
Study on the Physical and Biological Properties of Corn Fiber Gum from Corn Kernel Pericarp Z.N. Li, Q. Mo, H.W. Lai and Y.J. Wang	706
The Effect of Polyester Structures on the Damping Property of Polyurethane Elastomers H. Chen, H.J. Zhou, D.J. Liu and Y.T. Li	710
The Effects of Hanging Microbe Coagulation Natural Rubber on Molecular Structures and Mechanical Properties J.F. Li, M.F. Huang, J.H. Liao, P.W. Li and T.M. Gao	715

Thermal Degradation Behavior of Polyaniline in Polyaniline/Tungsten Carbide Composite H. Huang, R.C. Fu and Z.C. Guo	719
The Flocculating Properties of Cationic-Starch-Graft-Polyacrylamide and its Nano Magnetic Modified Product G.H. Wang, M.D. Sun, W.B. Li, Y.Z. Lu, X.Q. Liu, J. Wang, H. Hu, Q. Liu and T.T. Huang	723
Thermodynamics of Potassium Dihydrogen Phosphate Growth: Baseline for Understanding Single-Crystal Formation X. Zhang, D.X. Jia and H. Xie	727
Removal of Iron in Hot Acid Leach Liquor by Hematite Process C. Liu, H.J. He, D.Q. Liang, P. Su, C.W. Luo, T. Li and Z. Liu	731
The Growth Mechanism of LSGM Thin Film Electrolyte by RF Magnetron Sputtering J. Xing, X.H. Chen, W.H. Ma, R. Li, J.J. Yang and J. Yu	735
The Study on the Mechanical Properties of Closed-Cell Foam Rubber Based on Microstructure Model H. Guo, W.J. Hu and J.L. Tao	739
Studies on the Desalination of NaCl Solution with Activated Carbon Coating Electrodes by Electrosorption and Kinetic Analysis Y. Zhao, X.M. Hu, W. Li and B.H. Jiang	743
Nonlinear Intelligent Constitutive Relation Of Piezoelectric Ceramic R. Qin, J. Qin and X.H. Zhu	747
Study on Corrosion Inhibition of Compound Corrosion Inhibitor of Molybdate in Seawater Y.L. Wei, Y.Q. Tian, Y.H. Wang and X.H. Yang	755
Simulation on Ballistic Performance of Ceramic/Metal Composite Armor Y. Jia, F.X. He, L.P. Shi and X.T. Wang	759
Validity of Several NDT Methods on Low Velocity Impact Damage Evaluation of 2-Dimensional Plain Woven C/SiC Composites S.S. Li, X.Y. Tong, L.J. Yao and B. Li	764
Characteristic Improvement of Carbon Coating by Furan Resin on Natural Graphite as Anode for Lithium Ion Batteries Y.S. Wu	768
Effect of Heat Treatment on Microstructure and Corrosion Resistance of Ni-Cr-Mo-Fe Alloys E.C. Ding, Z.Y. Man, X.X. Yang and J.T. Zhao	773
Effect of Hydrogen Content on Structure and Properties of Sintering Body Utilizing TC21 Hydrogenated Powder Y.Q. Tian, Y.L. Wei, H.L. Hou and X.P. Ren	777
Optimization of Factors Influencing the Aspect Ratio of Mullite Whiskers Based on Single Factor Analysis and Response Surface Methodology B. Meng and J.H. Peng	782
Research on the Electrical and Thermal Conductivity of Magnetorheological Fluid F. Zhou, Y.C. Wang, R.J. Wang and R. Wang	786
Study of Chelating Agents in Silicon Wafer Polishing Slurry X.H. Zhang and G.X. Wang	790
The Effect of Suspension Casting on the Properties of Fly-Ash Particle Reinforced Al Matrix Composites Z.W. Jiang, H.F. Luo and Z.J. Li	794
Calculation of Thermodynamic Properties for B2-YCu Intermetallics with Molecular Dynamics L.S. Xu and Y.R. Wu	798
Numerical Simulation on the Effects of Ceramic Particle Reinforcement Distribution on the Penetration of Functionally Graded Material Armor Y. Jia, X.T. Wang, L.P. Shi and F.X. He	803
Effect of Filler Alloy on Microstructure, Mechanical and Corrosion Behaviour of Dissimilar Weldment between Aisi 201 Stainless Steel and Low Carbon Steel Sheets Produced by a Gas Tungsten Arc Welding C. Wichan and S. Loeshpahn	808

Chapter 3: Metallurgical Technologies

Optimization on Influencing Factors of Fracture Toughness of Corundum-Mullite Toughened by <i>In Situ</i> Synthesized Mullite Whiskers by Response Surface Methodology B. Meng and J.H. Peng	819
Analysis of the Color Phosphating Process Influence Factors Z.M. Chen, Z.L. Wu and Q.Y. Zhang	823
Analysis on Crack Propagation Mechanism of Single Crystal Copper by FEAt Method G. Li, Q.L. Zhang, M. Chen and L.Y. Zhou	827
Comparative Study on Removal of Fe, Al and Ca From MG-Si by Acid Leaching Y. Mai, W.H. Ma, K.Q. Xie, T. Wang, H. Zhang and Q. Liu	831
Crystallization Behavior during Preparation of Glass-Ceramics from BF Slag of Baotou Iron and Steel Company Y.C. Wang, J.L. Zhang, Q. Jiang, G.P. Luo and W.W. Yu	836
Effect of Hot-Rolling Parameters on Microstructure and Mechanical Properties of 72LXA Steel Wire Rod J.H. Zeng, Y.C. Li, Z. Zhou and J. Chen	842
Effect of Sodium Carbonate Concentration on Leaching Property of Sintered Clinkers with Low A/S Ratio H.Y. Yu, S. Zhang, W.F. Wu, X.L. Pan and S.W. Bi	847
Experimental Study of Floatation on Non-Independent Copper Oxide Ore from Jilin Province in China R.D. Deng, Q.J. Liu, X.F. Yang, T. Hu and F.H. Ye	851
Experimental Study on Spraying Nozzle Arrangement of Slab Caster Z.G. Peng, D.Q. Cang, W.F. Gao, Z.Z. Yang and J.J. Zhang	856
Inclusion Control of Oil Drilling Steel SAE4137 L. Chen, T.M. Chen, Y. Chen, Y.X. Zeng and P.F. Li	861
Influence of the Mechanical Activation on the Reactivity of Germanium-Containing Zinc Neutral Leaching Residue C. Liu, H.J. He, D.Q. Liang, H. Huang, L.M. Man, Y. Song and S.Q. Luo	868
Microwave Digestion-ICP-MS Determination of Vanadium Oxide for 22 Impurity Elements Y. Cheng	873
New Groove Design and Three-Dimensional Numerical Simulation of Ultra-Fine Grain of Bar Rolling L. Cao, X.T. Li, S.J. Liu and M.T. Wang	879
Numerical Simulation on Temperature Drop of Molten steel in 210 t Ladle S.L. Tian and Z.L. Yang	883
Research of Lime-Mediated Sewage Sludge Use as Metallurgy Sintering Ingredients in the Sinter Industry Y. Xing, F. Zhao, C. Hong, G.W. Yu, C.S. Yue and Y.X. Si	888
Research on Extending the Lifetime of Combined Blowing Vanadium Recovering Converter A.L. Li, X.T. Liang, Y. Chen, J.H. Zeng, G.J. Li and S.X. Yang	895
Research on Technology of Smelting Low-Sulphur Steel L.K. Jiang	899
Situation and Technology Progress of Lead Smelting in China W. Gao, C.Y. Wang, F. Yin, Y.Q. Chen and W.J. Yang	904
Study on Deformation Behavior of Rolled Metal at Ultra High Rolling Speed in Wire Rod Mills X.Y. Shuai and C. Wu	912
Study on Low Temperature Co-Carbonization of Coal and Algae X.M. He, Y. Pan, W. Li, J.Q. Fang and X.J. Wang	919
Utilization of Steelmaking Dry-Dedusting Dust L. Chen	924
Effect of Spheroidizing Annealing Time on Microstructure and Hardness of GCr15 Bearing Steel X.D. Huo, L. Guo, K.N. He and R. Huang	928
Optimization of Secondary Cooling on Rectangular Bloom Based on Subproblem Approximation Method W. Chen, Y.P. Feng, N. Zheng and Y. Chen	932
Research on Reducing Tapping Temperature of BOF J. Chen, Y. Chen, X.T. Liang and J.H. Zeng	936

Removal Phosphorous from High Phosphorous Converter Steel Making Slag by Hydrometallurgical Process	
W.T. Xia, X.J. Zhou, J.G. Yin, Y.F. Gao, W.Q. Yang and J. An	940
Research on Application of Vanadium Extraction Tailings for BOF Steelmaking	
L. Chen, J. Wang, W.S. Ge, S.C. Jiang and L.G. Yi	944
Experimental Research of Tin Ore from Kazakhstan	
T. Hu, Q.J. Liu, R.D. Deng and F.H. Ye	949
Effect of Heat Treatment on Microstructure and Properties of Cr15 Super Martensitic Stainless Steel	
W. Jiang, K.Y. Zhao, D. Ye, J. Li, Z.D. Li, S.H. Li, J. Su, Q.L. Yong and X.C. Han	954
Study on Inclusions of Low Carbon Steel Slabs Produced in Different Casting Stages	
Q.C. Peng, W. Xiong, X.S. Yu, J. Zou, S. Peng and X.S. Sheng	958
Decontamination of Drilling Fluid Waste from Coalbed Methane Well	
L.J. Guo, J. Li, H.Y. Hu, H.N. Liu and J. Lu	962
Flotation of a Refractory Copper Oxide Ore Using Ammonium Bicarbonate as Activator	
Y. Wen, J.J. Fang, Y.B. Mao, S. Wang, J. Liu and W.J. Zhao	969
Flotation of Copper Oxide Minerals Using Ethylene Phosphate as Activators	
X.F. Yang, Q.J. Liu and R.D. Deng	975
Study on Calcium Ions Affecting Mechanism to Collecting Quartz in the System of Dodecyl Sulphonate	
L.Z. Chen, Q.L. Hou, R.M. Yin, L. Jing and F.B. Ji	983
The Application of METSIM in Hydrometallurgy Process: A Case Study	
Y.Q. Lv, S.L. Zheng, H. Du, S.N. Wang and Y. Zhang	988
Research on the Mechanism of Producing Calcium Vanadate	
P. Cao, X.L. Yang, Y. Peng, Z.B. Fu and L. Chen	996
An Electrochemical Corrosion Study of SAE1045 Steel in Polyacrylamide Gel and Sodium Chloride Surroundings	
N. Lu, Y. Yao, H.P. Yang, X.L. Chen, K.M. Gu and J.N. Tang	1002
Corrosion-Resistance of Ni₃Al Intermetallic Compounds Containing Cr Synthesized via Spark Plasma Sintering Process	
N. Liu, G.D. Zhang, J.L. Wu, F.J. Zhang and J.Q. Zhang	1006
Effect of Cold-Rolling Reduction on Recrystallized Annealing Microstructure and Texture of Titanium Stabilized Interstitial Free Steel	
G.T. Zhang, Z.W. Zheng and M.L. Wang	1010
Effect of FeO on Sintering and Leaching of Calcium Aluminates in the CaO-Al₂O₃-SiO₂ System	
X.L. Pan, H.Y. Yu, K.W. Dong, B. Wang, W. Zhang and S.W. Bi	1014
Effect of Strain Rate on Mechanical Properties of Fe-30Mn-3Si-4Al TWIP Steel	
Z.P. Xiong, L.G. Gu, Y.K. Wang, J.C. Zhao, W.P. Bao and X.P. Ren	1018
Effect of Tempering Process on Structure and Properties of Super Martensitic Stainless Steel	
H.D. Sun, K.Y. Zhao, J.Q. Rui, W. Jiang, X.C. Han, Q.L. Yong and J. Su	1023
Effects of Particle Size of Coke on the Electrical Property and Hardness of Copper/Coke/Phenolic Resin Composites	
M.D. Li, H. Yang, H. Niu, C.M. Zhang and Y. Lu	1027
Extraction and 3-Dimension Morphology Characterization of Metastable Secondary Phase in Steel	
G.C. Wang and K.M. Fang	1031
Finite Element Simulation of Nickel-Plated Steel Sheet in Stamping Process	
Z.W. Tan, K.L. Xu and S.Y. Hu	1036
Flowing Liquid Metal Corrosion of Structural Steels in the Pb-Bi Eutectic	
Z.H. Wang and H. Chen	1040
Fluoride Evaporation during Thermal Treatment of Waste Slag from Mg Production Using Pidgeon Process	
F.L. Han, L.E. Wu, S.W. Guo, Q.X. Yang and C. Du	1044
Germanium Co-Precipitation with Ferric Hydroxide: A Lab-Scale Study	
K.Y. Chen, C. Liu, D.Q. Liang, H.J. He, Q. Huang, Y.M. Wu and J. Pan	1050

High Temperature Deformation Behavior and Corrosion Resistance of 2205 Duplex Stainless Steel under Strain Rate of 0.5s⁻¹ Y.H. Yang and S.H. Li	1054
Influence of pH on the Electrochemical Behavior of 00Cr15Ni7Mo2Cu2 Supermartensitic Stainless Steel in 3.5% NaCl Solutions J.Q. Rui, J. Li, H.D. Sun, K.Y. Zhao, Z.D. Li, X.C. Han, Q.L. Yong and J. Su	1058
Non-Metallic Inclusions Control for High Strength Anti-HIC X65 Tube Steel J. Wang, Y. Chen, S.Q. Huang, J.H. Zeng, L.G. Yi, Y.J. Zhang, L. Chen and H.B. Yu	1062
Research on Hydrometallurgical Purification of Microimpurity in SiGe Alloy Tailings C. Li, X.H. Chen, W.H. Ma, L. Wu and K.Q. Xie	1068
Research on Technology of Reducing Iron and Steel Consumption in Whole Process of Steelmaking L.K. Jiang	1072
Study on Technology of KR Desulfurization for Hot Metal with Vanadium and Titanium J. Wang, W.S. Ge, L. Chen, S.Q. Huang, J.R. Fan and Z.H. Zhong	1077
Studying on Leaching Low Grade Copper Oxide Ore in the System of NH₄CO₃-H₂O Y.B. Mao, J.J. Fang, Y. Wen, S. Wang, W.J. Zhao and S.Q. Zeng	1083
The Study of Color Film Phosphating Process in Steel before Coating Z.M. Chen, Z.L. Wu and Q.Y. Zhang	1088
Ratio of Magnesium in Prepared High Titanium Ferroalloy with Titanium Concentrate and Titanium Slag by Thermite Reduction M.T. Ding	1092
Research on Separation of Copper-Lead Mixed Concentrate M.G. Jiang, Q.J. Liu, H. Xiao and J.L. Yang	1096
An Electrochemical Corrosion Study of SAE1045 Steel in SiO₂ Gel with 3 wt% Sodium Chloride N. Lu, Y. Yao, K.M. Gu, Z.L. Lu, H.P. Yang and J.N. Tang	1102
Biooxidation Pretreatment Cyanide Leaching of a Flotation Gold Concentrate C. Zhu, B.L. Ge, Z.Y. Lu and W. Zhu	1106
Research of Refractory Oxidized Lead-Zinc Ore in Lanping H. Xiao, Q.J. Liu, M.G. Jiang and J.L. Yang	1110
The Effects of Nd on Lead Anode for Zinc Electrowinning X.C. Zhong, B. Hong, Y.H. Li, L.X. Jiang and Y.Q. Lai	1115
Study on Preparation of High-Grade Titanium-Rich Material from Modified Titanium Material by Microwave Selective Leaching Y. Sun, S.L. Liu, S.L. Zhang and J.H. Zhang	1119
The Investigation of Coke Breeze Demineralization on Temperature Z. Ning, K.Q. Xie, W.H. Ma, K.X. Wei, Y. Zhou and Y. Yang	1123

Chapter 4: Related Themes

A Study on Advanced Treatment for Coking Wastewater with Biological Activated Carbon Based on Efficient Degrading Flora G.H. Wang, X.Q. Liu, W.B. Li, Y.Z. Lu and M.D. Sun	1129
A Study on the Relationship between the Abnormal Chemical Components of Underground Water and Endemic Fluorosis in Shuangliao Area, Jilin Province, China Y.H. Sun, S.H. Sun, L.J. Lu, G.Q. Chen and X. Wang	1133
Efficient Expression of Mussel Adhesive Protein in <i>Pichia pastoris</i> GS115 Promoted by Ectoine X. Zheng, W.W. Fan, L.J. Meng, S.S. Li, Y.Y. Liu and L.H. Zhang	1137
Influence of Disintegrant on Properties of Fast Disintegrating Tablet Containing Xylitol P. Katewongsa and T. Phaechamud	1141
The Changes of Fibrinolytic Activity of Nattokinase in Artificial Gastrointestinal Environment and Human Digestive Juice Y.L. Zhao, Y.N. Gu, W.G. Wang, L.G. Du, L.C. Tang and T.T. Meng	1145
Effect of Zn Stress on <i>Pteris vittata</i> Q.H. Zhu and H.X. Xia	1151

Spectrophotometric Determination of Kryptofix 2.2.2 Using TCNQ M.Y. He, L.Q. Sun and A.Q. Luo	1156
Cold Test of Circulating Fluidized Bed Decomposition Phosphogypsum L.Z. Ma, Q.F. Cui, J.M. Guo and Y.J. Zhang	1160
Analysis of Volatile Compounds in Flowers of <i>Fraxinax sieboldiana</i> by Headspace Solid-Phase Microextraction Coupled to Gas Chromatography-Mass Spectrometry R. Zheng, W.B. Hu and X.H. Yang	1164
Distributed Characteristics of Mining Rights of Key Minerals of China W.N. He, L.J. Lu, Y.Z. Wang, Y.L. Lu and Y.J. Tan	1168
Exploration of Exhaust Gas of Natural Gas Catalytic Combustion in the Aseptic Box L.F. Yan, M. Xiao and S.H. Zhang	1172
Material Performance Data Acquisition and Management System for Welded Pipe Used in the 2nd West-East Gas Pipeline B.L. Liu, W. Chen, L. Li and Q.R. Xiong	1176
Optimization of Steelmaking Process for 200t Converter J. Chen, A.L. Li, Y. Chen, X.T. Liang and J.H. Zeng	1180
Purification of Soybean Isoflavones from Soy Sauce Residue by Ultrafiltration B. Li, Z.Q. Wu, L.Y. Dong and L. Li	1184
Screening, Identification of a Marine Fungal Strain Producing Chitosanase G.R. Zu, M. Chen and C.Z. Zhang	1189
Study on Operating Conditions of Membrane-Aerated Bioreactor X.J. Liu, S.C. Xu, C.C. Qiang and B. Li	1193
Study on the Decontamination by Introducing Microorganism Action in the Process of Using Coal-Gangue Packed for Mine X.F. Jing, Y.L. Chen, H. Chen and Z.Y. Cai	1197
Study on Removing Dissolvable Mn²⁺ from Manganese Residue by Oxidation at High Temperature X.J. Zhou, W.T. Xia, J.G. Yin, Y.F. Gao, J. An and W.Q. Yang	1202
Process Optimization of Hemicelluloses Lye Extraction from Sugarcane Bagasse L.J. Wang, X.L. Liu, M.L. Weng, Z.J. Li, F.S. Wu and S.F. Wang	1206