

Table of Contents

Preface and Conference Organization

Chapter 1: Chemical Materials and Technologies

Strategy in Optimization of Silicone Oil Emulsion by D-Optimal Mixture Design H.X. Shi, S.S. Jiang, H.M. Shen and H.K. Wu	3
Wood Smoke Impact on Particulate Matter (PM) P. Ge	9
Quantitative Analysis of Sn-2 Palmitic Acid Content in the Triacylglycerols from Algae Oil Using Enzymatic Hydrolysis X. Liu, X.Y. Zhao, X.D. Wang, N. Pang, M. Wang and J. Wang	13
Rapid Analysis of the Bisphenol a in Slips of Store Receipts and ATM Machine with Head-Space Liquid-Phase Micro-Extraction Coupled to Gas Chromatography and Mass Spectrometry Y. Yu	17
Chemical Constituents and Antibacterial Activity of <i>Euphorbia altotibetica</i> A.M. Yang, X.L. Shi, J.L. Liu, L. Yang and Y. Men	21
Screening of Formulation for 5% Hexaflumuron Suspension Concentrates B.H. Zhang	25
Optimization of Furfural Production from Xylose by RSM Using Chromium Sulfate as Catalyst Y. Zhang, M.Q. Chen and J. Wang	29
Lipase-Catalyzed Synthesis of Sucrose Fatty Acid Ester and the Mechanism of Ultrasonic Promoting Esterification Reaction in Non-Aqueous Media J.C. Zhang, C. Zhang, L. Zhao and C.T. Wang	35
Analysis on the Main Problems of Industrial Application of the Regenerated Amine Desulphurization Technology D.F. Zhou, Y.J. Wu, J.B. Guo and F.H. Lu	42
Effects of Strong-Acid on Performances of Copper Solvent Extraction Y.J. Liu, X.R. Liu, H. Li, Q. Li, Y.S. Li, C. Su, J. Tian and Y.C. Wang	48
Visual Study on the Effect of Osmotic Pressure on the Morphology of Emulsion Liquid Membrane S.J. Li and H.J. Liu	52
Stereo-Controlled Total Synthesis of Iedomycins A and B C.L. Zhu, J.T. Zhang, S.P. Chen, J.M. Feng, G.P. Wang, Y.P. Li, S.P. Huang and X.J. Wang	57
Optimization of HS-SPME for GC-MS Analysis of Volatiles Compounds in Roasted Sesame Oil Z.X. Fang, G.Q. Liu, X.D. Wang, L.J. Han and B.G. Liu	61
The Resonance Rayleigh Scattering Spectrum Characteristic of Tb³⁺-GMFX-AR and the Determination of Gemifloxacin H.P. Xi and X.W. Fang	65
Preparation and Research Advance of Electronic Grade Phosphoric Acid B. Wang and K.B. Luo	70
Study on Synthesis of Complexes of Maleamic Acid and Lanthanum Ion C.Q. Chen, K.S. Li, J. Kang and J. Li	74
Study on Liquor Wastewater Treated Process by Domesticated Activated Sludge to Produce Polyhydroxyalkanoates M.H. Bian, G.B. Ye, H.B. Luo, J. Deng and Y. Chen	78
Formation the Polypyrrole / Chitosan / Polylactic Acid Microencapsules H. Ye, Y. Liu, X.H. Peng, K. Wan and F. Chen	83
Growth Characteristics of Hydride for Aging Treated U-5.5wt.%Nb Alloy H.F. Ji, J.R. Yang, G.C. Hu and C.L. Jiang	87

Determination of 17β-Estradiol Based on Electropolymerized-Molecularly Imprinted Polymer on Gold Nanoparticles-Graphene Modified Electrode T.H. Li, D. Wang, H.Z. Lan and N. Gan	93
Preparation of Iron Carbide from High Phosphorus Oolitic Hematite G.Q. Li, H.H. Wang, J. Yang and J.H. Ma	98
The Study of Composite Substituting Mercury Corrosion Inhibitors for Zinc in Zinc-Manganese Battery Y. Cui, D.S. Zhao, H. Qu, G.W. Qu, J. Liu and P.B. Ren	102
Thermodynamic and Experimental Studies of Chlorination Reaction of FeO-Cu₂O System P.G. Jiang, K.C. Chou and X.J. Hu	108
Enhancement of Carbon Dioxide Mass Transfer Rate by (Ionic Liquid)-in-Water Emulsion H.J. Liu, Y. Pan, H. Yao and Y. Zhang	113
Effect of Hydrogen Bonds to Form Complexes for N Active Structures which Contained in Coal and the Ca-Based Inhibitor C.Y. Hao, Q.B. Zhao, J.R. Wang and G.L. Chi	118
Dyeing Technology of Real Silk with the Natural Curcumine Y.L. Luo	122
Preparation and Property of a Bio-Char from De-Watered Sludge and Beer Lees Y.X. Zhang, H. Liu, Y. Ma and J.S. Zhang	125
A New Type of Fluid Loss Additive P1301 for Oil Field Cementing Q. Xiao, W.F. Xiao, X.X. Liu and L.T. Dong	131
Epoxidation of Soybean Oil under Acid-Free Condition Y.X. Miao and J.P. Liu	140
Preparation of Manganese Dioxide Loaded Active Carbon and its Adsorption Dynamic J.J. Zhang, L. Wang, H. Song, H.L. Song and D.Y. Chen	144
Progress on Synthesis and Application of Betaine Surfactants H.Y. Cai, H.Z. Wang, D.S. Ma, Q. Zhang, Z.H. Zhou and J. Cheng	148
Enantioselective Reformatsky Reaction between Cinnamaldehyde and Difluorinated Organozinc Reagent: Synthesis of Chiral γ,γ-difluoro-β-hydroxy Esters as Precursors of Statin Analogues C. Fang, Y. Yin, H. Zhang and F.H. Wu	154
Electrocatalytic Sensing of Nitrate at Cu Nanosheets Electrodeposited on WO₃/Polyaniline Modified Electrode B. Liu and B.X. Zou	159
Synthesis and Properties of Poly (N-arylenebenzimidazole ketone)s X.W. Cui and L. Zhang	165
Electrochemiluminescence Detection of Diphenhydramine Based on Tris(2,2-bipyridyl) Ruthenium(II) Immobilized on PEDOT-PSS Modified Electrode by Electrostatic Attraction Strategy Q. Xiang, X.D. Yang, Y. Gao, L.Y. Tian, J. Tang and K.Q. Wang	169
The Quantum Research on the Nucleophilic Reaction Activity of Polycyclic Aromatic Hydrocarbons J.L. Zhao, Q.Z. Han, Z.T. Jiang and H. Wen	173
Hydrothermal Synthesis and Photocatalytic Activities of La-Doped BiVO₄ Microcakes G.C. Liu, S.H. Xu and Y.J. Liang	177
Synthesis, Crystal Structure and Fluorescence Study of 8-Dimethylaminomethyl-7-hydroxy-chromen-2-one S. Li, J. Huang, Y. Wang and P. Liu	181
Density Functional (B3LYP) and the Second-Order Møller-Plesset (MP2) Theoretical Method Investigate the Geometric Configurations of the D...CO (D=He, Ne, Ar, Kr and Xe) Complexes K. Yuan, Y.C. Zhu and L. Liu	187
X\cdotF (X=C, N, O and S) Noncovalent Weak Intermolecular Interactions Y.Z. Liu and H. Tang	192
The Research for Introducing Gem-Difluoromethylene Group into the Organic Molecules C. Fang and F.H. Wu	196
Synthesis, Characterization and Photophysical Properties of Cu^I Complexes with 7,10-Dimethyl Pyrazino [2,3-<i>f</i>][1,10]phenanthroline Q. Li, W.Q. Liu and F. Zhao	201

Synthesis and Crystal Structure of Tridodecylammonium 3,5-Dinitro-1, 2, 4-<i>H</i>-triazolate (TDADNT)	
T. Zhang, L. Liu, Y.Q. Zhang and Z.X. Li	205
Hydrothermal Time Effecting on the Morphology of Hydroxyapatite Templated by L-DOPA	
X.H. Li, X.L. Cheng, F.Y. Xie, X.Q. Wu and Y.Z. Yu	211
The Stability of Potassium Ferrate in Water	
K. Luo, G. Cao, M.Y. Li and G. Ren	215
Determination of Phoxim in Water Sample by Hollow Fiber Supported Ionic Liquid Coupled with High Performance Liquid Chromatography	
S.J. Xu, B. Zhou, H.P. Yan, N. Wu and W. Liu	219
Overloading Behavior of Anthracyclines on Silica Column with Aqueous-Organic Mobile Phases: Effect of Organic Modifier	
Q. Yuan, L.L. Xia and R.P. Li	223
Investigation of Sulfur Transformation during Coking Process	
H. Sun, H.B. Xia, Q. Yang, S. Du, D.D. Song and H.Z. Chang	228
Research on Production and Pyrophorosity of Iron Sulfur Compounds in Liquid Phase	
L.Y. Shang, S.L. Zhao, Y.W. Tian, Z.H. Zhang, S.W. Xie and P. Li	234

Chapter 2: Catalyst and Catalytic Reaction

The Catalyzed Synthesis of Prenyl Alcohol in Anhydrous System	
F.X. Ruan, Z.P. He, H.L. Song, K. Huang, J. Hu, X.Y. Peng, H.Q. Yu, D.K. Liao, G.S. Sun, S.Y. Huang and Z.M. Wei	241
Preparation of TiO₂-Al₂O₃ Support and Hydrodenitrogenation over Ni₂P/TiO₂-Al₂O₃ Catalyst	
J.S. Yan, H.Y. Wang and F.W. He	245
Study of the Performance of the Cobalt Based Catalyst on Different Supports for Fischer-Tropsch Synthesis	
W.L. Ye	251
Photocatalytic Performance of ZnO Prepared by Sol-Gel Method with the Assistance of CTAB	
H. Fang, W. Wu and Z. Huang	256
Design and Synthesis a Novel Supported Pd-Pt Mesoporous Composite as Catalysts for the Polyaromatic Hydrogenation	
W.Q. Wang, H.J. Zhang and M. Wu	260
Effective Hydrogenation of p-Chloronitrobenzene over Iridium Nanoparticles Entrapped in Aluminum Oxy-Hydroxide under Mild Conditions	
G.Y. Fan and C. Zhang	267
Reactivity of Olefins and Thiophenes in Hydrodesulfurization of FCC Gasoline	
B. Liu, A.J. Wang and C.G. Liu	271
The Bimetallic Synergistic Effect in Heterogeneous UV/Fenton System for the Treatment of Refractory 6-Nitryl Wastewater	
W. Xiong, D.R. Liu, G.Y. Yuan, Q. Wei, Q.S. Dang, J. Feng and B. Xu	279
The Influence of Preparation Procedures on Hydrogenation CO₂ to Formic Acid over Supported Ru Catalysts	
N. Liu, J. Lei, M.Y. Li and P. Wang	283
Ammonoximation of Cyclohexanone over Shaped TS-1 Zeolite Catalysts	
G.Q. Liu, J. Xia, X. Yuan and J. Wu	287
Synthesis and Characterization of Metal Salen Complexes Immobilized MCM-41 and their Catalytic Activity for Benzyl Alcohol Oxidation	
D.X. Huang, Y.B. Song, Y.W. Fang and C.Y. Sun	292
The Preparation and Characterization of the Solid Acid Catalyst for the Esterification of the Gutter Oil	
Y.Z. Liu, S.P. Wang, K. Yuan and H. Tang	297
Efficient Catalytic Hydrodechlorination of 4-chlorophenol in Water over Rh/AlO(OH) Catalyst	
G.Y. Fan	302

The Recovery of Sulfur Resource during Regeneration Process for the Hot Gas Desulfurization Sorbent Y.H. Hu, S.G. Ju, L. Yang, Y.K. Gao and H.L. Fan	306
Research on the Phenol Degradation in Microbial Fuel Cells with Fe₃O₄-Reduced Graphene Oxide Cathodic Catalyst G.H. Qi, X.Q. Li and J. Cao	310
Efficient Hydrogen Production by Catalytic Dehydrogenation of Methylcyclohexane over Ni-Pt/ Nano-Film Alumina Catalyst F. Wang, Y.Q. Yang and W.Y. Wang	315
Simulation of Sulfolane Extraction Distillation Process D.X. Liu	324

Chapter 3: Pharmaceutical Engineering, Biological Chemical and Biomedical

Recombinant Expression of Bioactive Peptides: A Review R. Liang, M.S. Zhang and S.Y. Lin	331
Application of a Bioinformatics Method on Detecting of <i>Acinetobacter baumannii</i> Carrying Metallo-β-Lactamases Isolated from Inpatients L.L. Ma, A. Huang, W. Chu, X.H. Li and M.C. Li	335
Saponins from <i>Panax japonicas</i> Reduces Myocardial Infarction Induced Reactive Oxygen Species Production and Cardiomyocyte Apoptosis via Activation of the Nrf-2 Pathway N. Wei, D. Yuan, H.B. He, Y.Q. Xu, C.C. Zhang, T. Wang, C.Q. Liu and G.Y. Liu	339
Extraction Process Optimization of Endo-Polysaccharides from <i>Phellinus igniarius</i> Y. Xu, H. Cao, S.S. Gu, S.S. Wang, J. Wang and F.A. Wu	347
Synthesis of Esomeprazole through Asymmetric Oxidation Z.C. Li, X.B. Kong, W.P. Mai, G.C. Sun and S.Z. Zhao	351
Dihydro Flavonols Maybe an Effective and Specific Novel Treatment for Alcoholism by Affecting the Express of Aminobutyric Acid L. Zheng	356
Radiation Threshold Damageability of Cells Depending on the Availability of the Cell Nucleus V.V. Dyachkov, Y.A. Zaripova, N.G. Riger, A.L. Shakirov and A.V. Yushkov	360
Development of Dencichine Plus Yunnan Baiyao Band-Aid Z. Wang, J.Y. Yang and Q. Chen	364
Desirability Approach for the Optimization of Black Pepper Extract and Chitosan Fresh-Keeping Solution Proportion Coating on Tilapia Y.Y. Hu, D. Wang and W.X. Chen	368
Research on Preparation Process of 5% Hexaflumuron Suspension Concentrates B.H. Zhang and Q.M. Zhang	374
Study on Antioxidant Activity of Pigment in Black Soybean Peel Q.J. Li and C.L. Xiao	378
Synthesis and Characterization of S-Tenatoprazole F. Yan, Y. Li and Z.H. Li	384
Three-Dimensional Protein Structure Prediction for CD36 W.Y. Tao, L.Y. Wang, G.Q. Huang and M. Luo	390
The Use of PEI in the Targeted Gene Delivery of VEGF165 and Ang-1 C.L. Ma, L.L. Lv, W.C. Yang, X.F. Li, Y. Liu, J.C. Yang and M.Z. Li	394
Synthesis Podophyllotoxin Derivatives via “Click Chemistry” R.C. Yang, H.X. Ding, Y.L. Wu and Q. Xiao	400
Synthesis of Bicyclic Furo[2,3-d]pyrimidine Deoxynucleosides Conjugated with N-Diisopropylphosphoryl Amino Acids R.C. Yang, H. Zhu, X.Y. Jin, Q. Xiao and Y. Ju	405
A Trial on the Overexpression of Epidermal Growth Factor Receptor and Proliferating Cell Nuclear Antigen in NSCLC of Similar Differentiation F.W. Lin, C. Zhang, K.P. Cheng, Q. Zhang and Y. Zhao	410
Glycoconjugation of 4-Methylumbelliferone via “Click Chemistry” R.C. Yang, T. Hu, B.P. Cao, X. Chen and Q. Xiao	414

Chemical Constituents from <i>Gentiana algida</i> Pall	419
A.M. Yang, Y. Men, H. Han, L. Yang, X.L. Shi, R. Wu and W.J. Guo	
Synthetic Study towards (±)leodomycin A	423
J.T. Zhang, S.P. Chen, C.L. Zhu, J.M. Feng, X.J. Wang and S.P. Huang	
Anti-Fatigue Effects of Polysaccharides from <i>Gynostemma pentaphyllum</i> Makino by Forced Swimming Test	426
B. Qi and H. Huang	
The Synthesis of (1-oxaspiro[2.5]octan-2-ylmethoxy)(tert-Butyl) Dimethylsilane	430
D.W. Liu, L.J. Tang, F.F. Huang, L.P. Wang, X.J. Wang and S.P. Huang	
Synthesis of (R)-3-((4-methoxybenzyl)oxy)butanal	434
L.J. Tang, D.W. Liu, L.P. Wang, F.F. Huang, S.P. Huang and X.J. Wang	
Study on Synthesis of (R)-tert-butyl (1-hydroxybut-3-yn-2-yl)carbamate	438
L.J. Tang, C.S. Lv, D.W. Liu, S.L. Qin, L.P. Wang, Y.P. Li, X.J. Wang and S.P. Huang	
Alkaloids from <i>Penicillium oxalicum</i>, a Fungus Residing in <i>Acrida cinerea</i>	442
B. Xu, K. Zou and F. Cheng	
Facile Synthesis, Characterization and Anti-Inflammatory Effect of 3-Aminoindolizine Derivatives	446
Y. Wei, C.Q. Cao, X.F. Lu, Z. Yang, K. Zou and N.Y. Huang	
Study on the Making of Amphiphilic Triblock Copolymer as Blood Substitutes	450
Y.C. Ma, L.Y. Cai, W.B. Cui, Y. Gao and Y.H. Li	
Comparative Analysis of Compositions between Calcium Phosphate Calculi and Urinary Crystallites in the Stone-Formers	457
W.Y. Zhu, M. Xu, F.X. Wang and J.M. Ouyang	
A Prophase Study on the Concise Synthesis of Aculeatin A	461
S.P. Chen, J.T. Zhang, G.P. Wang, C.L. Zhu, J.M. Feng, X.J. Wang and S.P. Huang	
Synthesis of (R)-2-(1-hydroxycyclohexyl)-2-(4-methoxyphenyl)ethyl 4-Methylbenzenesulfonate	465
D.W. Liu, L.J. Tang, L.P. Wang, F.F. Huang, S.P. Huang and X.J. Wang	
Clinicopathological Significance of HO-1 and HO-2 Expression in Medulloblastoma	469
L. Tang and L. Yu	
Production of Personalized Thyroid Cartilage Scaffold and Histological Analysis	473
W. Xia, G.X. Cao, L.C. Zhang, J. Liao and J.M. Zeng	
Spectrophotometric Determination of 6-Mercaptopurine in Pharmaceutical Sample Using Fe(III)-Potassium Ferricyanide System	479
C.Q. Tu and X.R. Wen	
Evaluation of <i>In Vitro</i> Antibacterial Activity of Endophytic Fungus from <i>Anemone tomentosa</i>	484
L. Yang, J. Long, W.J. Li, A.M. Yang, Z.D. Yang, X.F. Liu and R.X. Zou	
Isolation of Endophytic Fungi from <i>Ephedra intermedia</i> and Research Antibacterial Activity of Secondary Metabolite Produced by the Fungi	488
L. Yang, W.J. Li, J. Long, A.M. Yang, Z.D. Yang, X.F. Liu, D. Hua, W.J. Wang and J.H. Ma	
Determination of Vitamin and Aminophylline by a Method of PLS	493
Y.H. Lei	
Well-Established Biodegradation Tests Used Biogenously Evolved Carbon Dioxide as an Analytical Parameter to Determine the Ultimate Biodegradability of Metalworking Fluids Measured by the Change of Absorption Solution Conductivity	497
K. Gerulova	
Fabrication of Paper-Based Microfluidics by Single-Step Wax Printing for Portable Multianalyte Bioassays	503
C.B. Zhou, Y. Zhang, S.W. Le, J.F. Nie, T. Zhang, F. Liu and J.P. Li	
Research on Simulation of Complex Distillation System for Biomass Fuel Ethanol Based on Virtual Assembly	509
Y.B. Wang, Y.F. Su, W.S. Deng and X.D. Zhang	

Chapter 4: Waste Disposal and Environmental Chemicals

The Removal of Strontium(II) and Neodymium(III) from their Aqueous Solutions on Chrysotile Nanotubes L.L. Cheng, X.D. Wei, X.L. Hao, D. Ruan and S.M. Yu	519
Study on Reactive Dye Wastewater Treatment with Quaternary Chitosan J. Lin, Y.M. Wu and Y.H. Lu	525
Using Lix984 to Recover Cu²⁺ from Plating Wastewater Containing Chloride L.Q. Li, Y.P. Tan and L.Q. Yang	529
Study on Photocatalytic Properties of Graphene/TiO₂ Composite Prepared by Impregnation Method Z.F. Wang, Y.H. Zhang, H. Fang, J.Z. Wang and B.S. Sun	533
Effect and Circulating of IC Reactor Treating Straw-Washing Wastewater K. Zeng, S.H. Liu, H.C. Zhang and Y.P. Cui	540
Source of SO₂ in Exhaust Gas from Carbon Production and Baking Process W.L. Ye	546
Study on the Recovery of Waste Wool by Combining Reduction and Metallic Salt Methods C.H. Zeng and Q. Lu	551
Investigation on the Purification Efficiency of Rainwater by Green Land Z.Y. Liu, X.J. Xu, X. Zheng and W.J. Dai	556
Research on MSW (Municipal Solid Waste) Gasification by CFB (Circulating Flue Bed) H.B. Liu and J. Gu	560
Study on Treatment of Smelting Contaminated Acid by Evaporation Condensing Process D.C. Zhang, X.L. Liu, D.M. Guan, X.Y. Xu and S.Y. Wu	564
Adsorption of Heavy Metal Ions from Aqueous Solution by Chitosan W.S. Linghu and C. Wang	570
Thermodynamics of the Vitrified Bottom Ash Slag from Municipal Solid Waste Incinerators-Phase Relations of CaO-SiO₂-Na₂O Oxide System Z. Zhang, G.Q. Li, Y.X. Yang and Y.P. Xiao	574
Preparation and Characterization of Activated Carbon from Reedy Grass Leaves by Chemical Activation with KOH L.Z. Chen, D.X. Miao, X.J. Feng and J.Z. Xu	579
The Effects of Different Adsorbents from Orange Peel on the Pesticide Furadan G.F. Xu, F.Z. Zheng and R.X. Guo	584
Thermal Debromination of Waste Printed Circuit Boards by Iron-Based Catalyst S.Y. Li, S.Y. Sun, J.Y. Liu, J.Q. Wu and J.J. Zeng	589
Determination of Parathion in Water Sample Using Ionic Liquid Head Space Microextraction Followed by HPLC L. Shi, B. Zhou, S.J. Xu, D.S. Huang, Q.S. Pan, N. Wu and W. Liu	594
Study on Advanced Pretreatment of Seawater by Electrolysis J. Nie, S.Z. Yi and D. Miao	598
Preparation and Performance Research of the Environment-Friendly Corrosion and Scale Inhibitor Y.M. Chen, C.X. Sun, H.W. Xu, J.Y. Wu and C.S. Huang	604
Carbon Balance in Nanjing's Ecological Economic System L. Yang, J.H. Zhang, Z.H. Liu and J.K. Sun	610
A Water-Soluble Iron Porphyrin as a Highly Efficient and Recyclable Catalyst for Peroxynitrite Decomposition Y.J. Luo, S.X. Ye, Y.B. She, Z.G. Han and R.G. Zhong	617

Chapter 4: Waste Disposal and Environmental Chemicals

Determination of Acrylates in Wastewater by Dispersive Liquid-Liquid Microextraction Coupled to Capillary Gas Chromatography J.Q. Sun, F. Zeng and X.F. Liu	627
Determination of Aromatic Amines in Wastewater by Dispersive Liquid-Liquid Microextraction Coupled to Capillary Gas Chromatography J.Q. Sun, M. Tang and J. Dai	631
Study on Cold Flow Properties of Waste Cooking Methyl Ester G. Wu, J.H. Shong, S.T. Xu, Y.B. Lai, X. Chen and J.F. Shu	635

Simultaneous Desulfurization and Denitrification from Flue Gas Using Urea/Piperazine Solution	
F. Wang, T. Chen, M. Jin and P. Lu	641
CO₂ Capturing by MDEA-PZ-TETA in a Rotating Packed Bed	
M. Jin, L.Y. Zhou, P. Lu, J.H. Wang and G.X. Yu	645
The Calculation Methods of the Heat Balance for Recovering the Vaporous Water from Exhaust Gas in Ammonium Phosphate Production	
D. Zhu and P.Y. Song	649
Simulation and Analysis of Cryogenic Air Separation Process with LNG Cold Energy Utilization	
Y.Q. Xiong and B. Hua	653
Review of Treatment Methods for Fracturing Flowback Fluid	
F.B. Li, J.J. Yang, Q. Li and H. Wu	659
Comprehensive Utilization of Red Mud Remaining in Alumina Production	
A.P. He, Z.L. Hu, D.G. Cao, J.M. Zeng, B.L. Wu and L.J. Wang	663
Extraction of Valuable Metals from Red Mud	
A.P. He, Z.L. Hu, D.G. Cao, J.M. Zeng, B.L. Wu and L.J. Wang	667
Study on Extraction of Mg from Boron Mud	
W. Wang, H.M. Gu and Y.C. Zhai	671

Chapter 5: Chemical Thermodynamics and Kinetics

Extraction Kinetics and Mechanism of La(III) by P204-Kerosine from Phosphoric Acid	
Y.S. Xiao, Y.G. Dang, D.J. Fei and Y. Zhang	677
Study on the Salt Precipitation Law of La Guocuo Salt Lake Brine with Pretreatment at 5°C	
Y.H. Cui and J.J. Yuan	683
Experiment and Numerical Simulation on Slugging Fluidization of Large Particles in Gas-Solid Fluidized Bed	
H. Yang, D.Y. Wan and C.Q. Cao	689
A New Modeling Approach to Estimate the Concentration of Tibolone in Acetone Solvent through Raman Spectra	
L.L. Xiang, Z.L. Sha and L. Zhu	698
Feasibility Analysis of Electrodeposited Cu-W-Co Alloys	
Y.H. Li, Z.C. Guo, B.F. Huang and H. Huang	702
Crystallization Kinetics of CaOx in Artificial Urine and in Saline System	
L.Q. Deng, J.F. Xue, L. Kuan and J.M. Ouyang	708
Solid-Liquid Equilibria for Binary Mixture of Dichlorophenols	
Y.F. Wang, Q.S. Huang, L.B. Yang and L. Zhu	712
Nonlinear Analysis of Bubble Formation Dynamics in Shear-Thinning Fluids	
W.Y. Fan and X.H. Yin	717
Transition of Bubbly to Slug Flow in a Short Vertical Channel of Gas-Liquid Two-Phase Flow	
M.Z. Zainon, M.A. Zubir and R. Ramli	721
Decomposition Kinetics of Switchgrass: Estimating Activation Energy	
G.Y. Xu, J.B. Wang, L.P. Guo and G.G. Sun	726
Spontaneous Formation of DTAB/SLS Vesicles	
J. Sun, H.Y. Li, D.H. Li, B. Shao and L.L. Cui	734

Chapter 6: Food Science and Food Chemistry

Ethanol Extract of Julu Honeysuckle May be a Potentially Promising Preservative Material	
L. Zheng and Y.P. Hu	741
Isolation and Screening of Salt-Tolerance Lactic Acid Bacteria Strain and Study on its Characteristic Producing Lactic Acid	
D. Huang, Y.Q. Liu, Y. Liang and X. Mao	746

Effect of Poly-ϵ-Lysine on Vacuum Packed Tilapia Stored at 4°C H.X. Ma, L.L. Cheng, L.H. Li and X.Q. Yang	751
Effect of Catfish Bone Paste on the Properties of Steamed Bread X.Q. Ren, L.Z. Ma and X.Y. He	757
The Change Rules of Physiochemical Indexes of Luzhou-Flavor Daqu Based on Continuous Flow Chemical Analyzer H.B. Luo, D.D. Wang, Y. Wang, Y. Wang and C.H. Wang	761
Functional Properties of the Protein Isolate and Major Fractions of Pine Nut Proteins Prepared from the Changbai Mountain in China D. Wu, W.H. Min, J.S. Liu, L. Fang, H.M. Li, S.L. Yang, J.L. Liu and L. Li	766
Extraction, Purification and Partial Characterizations of Polysaccharides from <i>Gracilaria lemaneiformis</i> X.Q. Yang, M.Q. Liu, B. Qi, L.H. Li, J.C. Deng, X. Hu, Y.Y. Wu and S.X. Hao	776
Study on Extraction and Detection of α-Androstenol in Truffle Z.G. Huang, C.H. Wei, H.B. Luo, Y.M. Liu and J. Deng	781
Effect of Packaging Films on Quality of Fresh-Cut Broccoli D. Wang, X. Li, Y. Ma and X.Y. Zhao	785
Optimization of Fermentation Conditions of Mead by Response Surface Methodology Y. Zhang, Y.Q. Ai, Q. Wu, C.F. Li and W.X. Chen	789
Optimization for Acid Hydrolysis Conditions of the Simulated Last Monosodium Glutamate Mother Liquor by Response Surface Methodology X.D. Feng, X. Pan and J. Lu	793
Effects of Soybean Pectin Gel on Flavor Compounds Variation of Cheddar Cheeses during Ripening H. Liu, J. Li, P. Geng, Y.T. He and T. Ma	797
Optimization of Culture Conditions, Separation and Purification of a Lipopeptide Biosurfactant from <i>Pseudomonas palleronii</i> S6X L.L. Zhai, G.L. Zhang, L.M. Sun and H.M. Hou	801
Study on Separation of 11S and 7S Fractions from Soy Protein by Different Techniques J. Xu, X.T. Zhang, Q.S. Zhao and X.S. Zhang	806
Isolation and Purification of Soybean Antioxidant Peptides R.W. Yang, J. Wang and S.Y. Lin	811
Effects of Pine Nut (<i>Pinus koraiensis</i>) Meal Protein Peptides on Memory Function of Mice Y.P. Jia, X.T. Liu, S.Y. Lin, K. Wang, S. Wang, H.R. Liu and Y. Jiang	815
Effects of Pine Nut (<i>Pinus koraiensis</i>) Meal Protein Peptides on Thymus Coefficient and Transformation of the Splenic Lymphocyte of Mice S. Wang, X.T. Liu, S.Y. Lin, J. Wang, Y.P. Jia, H.R. Liu and Y. Jiang	819
Study on Method of Extraction and Determination of Cucurbitin Y. Wang, Q.C. Ma, H.N. Xu, K. Feng and Y. Tang	823
ICP-AES Determination of Mineral Elements in Five Edible Seeds after Microwave Assisted Digestion Y. Wang, Q.C. Ma, H.N. Xu, K. Feng and Y. Tang	827
Study on Pit Mud Lixivium from Different Years Pits by Gas Chromatography Mass Spectrometry C.H. Wei, Z.G. Huang and H.B. Luo	831

Chapter 7: Composites and Polymers

The Application of a New Composite Elastomer Material in Rubber Tracks L. Zhang, Y. Chen and H. Ji	837
Polyurethane Foaming Process Modelling by Finite Point Method H. Abdessalam, B. Abbès, Y.M. Li, Y.Q. Guo, E. Kwassi and J.L. Romain	841
Preparation of an Amphiphilic Magnetic Copolymer Microspheres Z.M. Liu, Y. Liu and P. Zhang	846
Study on Thermal and Mechanical Properties of Polyurethane Systems for In-Mould Decoration Ink J. Lin, C. Zheng, S.X. Qian, X.F. Cai, Y.S. Lan, D.M. Zhang and J.W. Zhuang	850

Progress in the Synthesis of Ternary Carbide by Carbothermal Reduction from Natural Raw Material	
C. Yu, H.X. Zhu, W.J. Yuan, C.J. Deng and S.M. Zhou	854
Preparation of Waterbased Phenol-Formaldehyde Resin and its Application on Para-Aramid Paper	
Y.S. Qin, Y.J. Qiao, G.L. Xu, Y. Wang and J. Hu	858
Synergistic Effects of Nanoporous Nickel Phosphates VSB-1 on Intumescent Flame Retardant Polypropylene Composites	
C. Peng, S.B. Nie, L. Liu, Q.L. He, Y. Hu and F. Gao	863
Microstructure Characteristics and Mechanical Properties of <i>In Situ</i> TiB/Ti Composites Prepared by Arc-Melting Technique	
J.F. Lu, Z.H. Zhang and F.C. Wang	867
Alignment and Surface Modification of Multiwall Carbon Nanotubes Polymeric Composites	
M.W. Wang	872
Study on Interfacial Bonding Strength of SiO₂/PET Composite Packaging Film	
Z.L. Ding, W.T. Wang, M. Sun and Y.C. Dong	882
Effect of Thermal Finishing on the Mechanical Properties of Hollow Polyester Fiber	
W.M. Wang, B. Yu and Y. Feng	889
Facile Fabrication and Enhanced Photoluminescence Property of Zn(II) Coordination Polymers with 2,2'-biquinoline-4,4'-dicarboxylic Acid	
B. Deng, H.Y. Huang and Q.G. Li	893
Effects of MPBM on Crosslinking Density and Mechanical Properties of Tetrafluoroethylene-Propylene Copolymer	
J.R. Lu, Y.F. Wang, P.X. Yan and F.X. Han	897
Study on Photocatalytic Degradation Performance of Nano Carbon Load WO₃ Doping TiO₂ Composites	
J. Zhang, H.H. Zhu, K.C. Lei and H. Quan	901
Cure Monitoring of Epoxy Resin by Simultaneous DSC/FTIR	
L.W. Wang and G.F. Fernando	905
Fabrication of the ZnS-ZnO Composite Film by Sulfurizing the as-Electrodeposited ZnO Film	
Z.F. Wang, Y.Z. Liu, Y.S. Liu and J.M. Zhang	909
Investigate of Phase Compositions and Microstructure of MgO-C through <i>In Situ</i> Nitride	
X.J. Zhang, N. Peng, C.J. Deng, H.X. Zhu and W.J. Yuan	914
Determination of Free Polyethylene Glycol in Cross-Linked Sodium Hyaluronate Gel	
Y.L. Zhao, T.T. Meng, W.G. Wang and J.L. Wan	918
Effect of Spark Plasma Sintering Temperature on Mechanical Properties of <i>In Situ</i> TiB/Ti Composites	
X.B. Shen, Z.H. Zhang, M.S. Cao and F.C. Wang	923
The Research of Nafion/PTFE/Inorganic Composite Membrane Used in Direct Methanol Fuel Cell	
D.Y. Su, J. Ma and H.K. Pu	927

Chapter 8: Micro / Nano Materials

Preparation of Nano t-ZrO₂ Particle by the Integrated Process of High-Gravity Field and Hydrothermal Crystallization	
S.W. Liu, J.C. Zhou and R.X. Liu	933
Effect of Polyvinylpyrrolidone on the Preparation of Silver Nanowires	
S.F. Li and H.Y. Zhang	940
Fabrication of Gold Nanoflowers and the Surface Enhanced Raman Scattering Performance	
C.R. Wang, X.Z. Yan, L. Yu and J.D. Li	944
Research Progress of Nanometer Titanium Dioxide Application	
C. Wu, W.X. Ma, Y.P. Chen, Y. Li, Y. Chen and L. Jing	948
Fabrication of Raspberry-Like Gold Nanoparticles and their Applications in Surface-Enhanced Raman Spectroscopy and Catalysis	
C.R. Wang, X.Z. Yan, L. Yu and J.D. Li	952

Comparative Study about Cytotoxicity with CuO Engineered Nanoparticles, TiO₂ Engineered Nanoparticles, CeO₂ Engineered Nanoparticles, Single-Walled Carbon Nanotubes	956
S.K. Men, X.S. Cao and Z.Y. Wang	
Preparation of Tungsten-Doped VO₂ (M) Nanoparticles through Sol-Gel Method and Hydrothermal Synthesis	960
J. Qi, B. Zhao, N. Yu, C. Niu and G.G. Sun	
Characterization and Synthesis of Additive Coated BaTiO₃ Nano-Powder	964
J.M. Lee, M.P. Chun, H.S. Shin, B.I. Kim and J.H. Lee	
Facile Preparation of Cu(OH)₂@TiO₂ Nanowire Arrays for Photoelectrochemical Water Splitting	968
D. Yan, W.D. Shi and W.Q. Fan	
Toxicity of Copper Oxide Engineered Nanoparticles to Maize (<i>Zea mays</i> L.) at Different Aging Times	972
H.J. Sui, J.Z. Zhang and Z.Y. Wang	
Toxicity of CuO Engineered Nanoparticles to <i>Eichhornia crassipes</i>	976
L.J. Liu, Y.N. Xu and Z.Y. Wang	
Microstructure and Properties of Fe-6.5wt%Si Alloys Cores with Core-Shell Structures Prepared by Mechanical Alloying and Spark Plasma Sintering Methods	980
Z.Y. Wu, G.Q. Li, X. Fan, Y.M. Xu, Z. Zhang and X.L. Wan	
The Study of nano-SiO₂/Polyacrylate Core-Shell Hybrid Emulsions	986
F.Q. Hou, N. Qing and Y.J. Chen	
Facile Preparation and Photocatalytic Activity of TiO₂ Microspheres with a Diameter of 1-8 μm	990
S.Z. Kang, L.Y. Bo, X.Q. Li, Q. Zhou and J. Mu	
Preparation of HgS Nanoparticles with Adjustable Dispersibility at Water/n-butyl Alcohol Interface	994
R.X. Zhou, Y.Y. Zhang, S.Z. Kang, X.Q. Li and J. Mu	
Research Progress on Preparation Technology of Calcium Sulfate	998
G.B. Li, M.M. Du, Y. Su, H.P. Li and L. Hu	
Spherical Nanometer Strontium Carbonate by Ultrasonic Method in the Water Phase	1003
Z.S. Yang, M.X. Qi and S.Y. Wang	
Synthesis and Photocathodic Protection Properties of MO/SnO₂ Core-Shell Nanocomposites	1007
M.J. Zhou and N. Zhang	
Adsorption of Cd(II) from Aqueous Solution by Magnetic Graphene	1011
J. Liu, S.W. Yuan, H.Y. Du and X.Y. Jiang	

Chapter 9: Ceramic

Synthesis of Al₂O₃ Ceramic Powder by a Carbothermal Reduction Process	1017
S.S. Ding, P. Cui, H.X. Zhu, C.J. Deng and C. Yu	
Study on the Oxidation Kinetics of <i>In Situ</i> β-Sialon Bonded Al₂O₃-C Refractories	1021
B. Xu, H.X. Zhu, N. Peng, C.J. Deng and W.J. Yuan	
The Preparation of Porous Andalusite Refractory by Foaming Method	1026
Q.Y. Zhu, W. Peng, C.J. Deng and H.X. Zhu	
The Influence of Donor-Doped Concentration on the PTCR Characteristics of the Ba_n-xSm_xTiO₃ Based Ceramics Sintered in Reducing Atmosphere	1031
X.X. Cheng, D.X. Zhou, Z.X. Zhao and Q.Y. Fu	
Fabrication of SiO₂ Porous Ceramics from Rice Husk Ash	1035
H. Chen, L. Zhao, X.T. Wang, S.J. Li, L. Feng and Z.X. Lei	
Influence of nanoAl₂O₃ Powder on the Properties of Microporous Corundum Aggregates	1040
L.P. Fu, H.Z. Gu, Z.K. Li and X.Y. Yan	
Reaction and Sintering Mechanism of Forsterite Lightweight Material in Sodium Carbonate Molten Salt	1045
D. Guo, J. Ding, C.J. Deng, H.X. Zhu, X.J. Zhang and W.J. Yuan	
Effect of Briquetting Pressure on the Performance of <i>In Situ</i> Formed Sialon in Al₂O₃-C Refractory Bricks	1049
N. Peng, C.J. Deng and H.X. Zhu	

Electroless Plating Copper on SiC Particles J. Zhang, X.G. Wang, L.Z. Zhao and M.J. Zhao	1053
--	------

Chapter 10: Functional Materials

Research on Electromagnetic Shielding Efficiency of Metal Rubber Material Y.M. Li and T. Yuan	1061
The Design and Preparation of X Band Absorbing Insulation Coatings D.W. Chen, F. Wu, X.H. Yu, C.J. Liao, W.J. Hao, M.M. Wang, Y.Y. Yi, H.C. Zhao and Y.F. Dong	1065
Modeling and Simulation of Underwater Acoustic Absorption Properties of Novel Macroporous Resins - Elastomer Thin Coatings W.H. Sun, B. Liu, X. Yan and Y.Q. Li	1070
Effects of Bias on Optical and Chemical Bonding Properties of Germanium Carbon Films X.S. Che and Z.T. Liu	1074
1,8-Naphthyridine Modified Rhodamine B Derivatives: Turn-On Colorimetric Sensor for Cu²⁺ G.Z. Gou, H.P. Yan, S.J. Xu, N. Wu, B. Zhou and W. Liu	1079
Preparation of Graphene Oxide Based on Expanded Graphite L.L. Liu, M.Z. An, S.C. Xing, X.J. Shen, C. Yang and X.L. Xu	1083
Research on the Properties and Making Method of Multi Alcohol Modification Particles ER Fluid S.K. Tan, X.P. Song, S. Ji, H. Zhao, Y.S. Yang, H.Y. Guo and M. Wu	1089
Experimental Investigation on Radiation Characteristic of Nanofluids for Direct Absorption Solar Collectors Q.B. He	1095
Synthesis and Photocatalytic Properties of Flower-Like ZnIn₂S₄ Microspheres by a Solvothermal Method M.J. Zhou and P. Cui	1101
Study on the Spectral Distribution Property of PDLC Films Color Display Y.H. Zhou, H.L. He, J. Qian, Q. Luo and T.L. Ma	1105
Microwave Permeability of FeCo-Based Magnetic Thin Films Y.H. Wu, M.L. Hadimani, X. Wen, Y.D. Zhou and M.G. Han	1109
Changes of Band Gap Structure of 1-D Quasi-Periodic Photonic Crystal at Angular Incidence Q. Zhang, W.S. Li and H.M. Huang	1113
Effects of the Sputtering Time of AlN Buffer Layer on the Quality of ZnO Thin Films X.M. Zhao	1117
PPy/Cotton Fabric Composite Electrode for Electrocardiogram Monitoring Y. Zhou, X. Ding, J.Y. Hu and Y.R. Duan	1122
Finite Element Analysis of Piezoelectric Pile Dynamic Characteristics A.G. Zhang, T.J. Yang, J.T. Du, P. Lv and X.G. Li	1126
Improving the Performance of Organic Light Emitting Diodes by Doping PEDOT:PSS T.C. Li, R.C. Chang and Y.J. Chen	1130

Chapter 11: Environmental Friendly Materials

Synthesis of Calcium Peroxide Microparticles and its Application in Glyphosate Wastewater Pretreatment J. Zhai and C.H. Jiang	1139
Synthesis of Loaded Silver 4A Zeolite Molecular Sieve with Magnetic Cores of SiO₂/(γ-Fe₂O₃- SiO₂) for Demercuration Y.Q. Qiu and L. Jia	1144
Effect of Alkali Leaching on Properties of Chitosan Film Y.B. Zhang, J.W. Wang, X.Y. Liu, Y.X. Li and P.P. Jiang	1149

Physical and Mechanical Properties of Chitosan Films Incorporated with Florida Mandarin Oil	
Y.B. Zhang, J.W. Wang, P.P. Jiang, Y.X. Li and X.Y. Liu	1153
Cation and Anion Exchange Membranes Prepared by Radiation-Induced Graft Polymerization for Application in Electrodialysis	
J.H. Chen, A. Masaharu and Y. Maekawa	1157
The Research on the Physical and Chemical Properties of Eggplant Stalk Fiber for the Complex Utilization of Stalk	
L.X. Li and H.T. Chen	1161
Corrosion Behavior of Rare Earth Cerium Based Trivalent Chromium Conversion Coating on Zinc	
S.T. Miao, S. Han and L. Hao	1165
Study on Season Factor in the Preparation of PVA/RS Composite	
C.B. Wu	1171
Study on Adsorption of Methylene Blue by Sarch-g-Polyacrylamide	
X.M. Wang and C.N. Zhang	1175
Composite of Shortcut Grass and Poly(vinyl alcohol): Preparation and Performance	
C.B. Wu and Y.J. Zhou	1179

Chapter 12: Building Materials

Analysis on Unfrozen Water Content of Mohe Permafrost Based on NMR Method	
H.L. Yu, W. Wang, Y.S. Ma and X.Y. Xu	1185
About Research of Ramic Concrete Strength and Thermal Performance	
M. Chen, X.M. Ji and Y. Ma	1189
The Research on Producing Recycling Cement Using Waste Concrete	
S.W. Yao and C.R. Wang	1195
The Magnetic Performance of the Particles of Steel Slag Powder	
B. Zhang and J. Hu	1199
Study on Chloride Ion Penetrability of Recycled Aggregate Concrete	
S.W. Yao	1203
The Thinning Study of $\lambda/4$ Type Absorber Made of Carbon Fiber Membrane and Gypsum Board	
Y.F. Dong, W.J. Hao, Y.Y. Yi, H.C. Zhao, F. Wu, M.M. Wang and D.W. Chen	1207
Effect of Water-Binder Ratio and Mineral Admixture on Frost Scaling Resistance of Concrete	
Z.H. Li, H. Xu, C. Su, D. Zheng and J.L. Yang	1212
The Design and Preparation of Composite Gypsum Boards Absorber Based on Phase Modulation Membrane	
Y.Y. Yi, W.J. Hao, H.C. Zhao, Y.F. Dong, F. Wu, M.M. Wang and D.W. Chen	1216
Research on Compressive Properties of Sea Sand Concrete	
W. Zhang	1221
Well Pattern Optimization Design for CBM Development	
G. Zhao, S.H. Tang and X.F. Jian	1225

Chapter 12: Building Materials

Heat Transfer Analysis and Energy-Saving Methods of the Exterior Windows in the Northern Area	
Z.H. Wang	1233
The Influence of Pretreatment and Usage on the Humidity Control Property of a Novel Paperboard	
D.Y. Feng, K. Zhu Ge, S. Huang, Y.L. Hua, Z.W. Hu and Z.Q. Peng	1237
Quantitative Phase Analyses of a Slag Using X-Ray Powder Diffraction	
W.J. Zeng, C. Zeng and W. He	1241
The Impact of $\lambda/4$ Type Absorber Protective Layer 's Thickness on Absorbing Properties	
H.C. Zhao, W.J. Hao, Y.Y. Yi, Y.F. Dong, F. Wu, M.M. Wang and D.W. Chen	1245

Experiment on Decarburization of High Carbon Fly Ash and Preparation of Concrete Q. Zhang, S. Mao, M. Jiang, X.D. Chen and W. Cheng	1250
---	------

Chapter 13: Iron, Steel and Alloys

The Research of Hardox400 HSLA Steels Weldability J. Zhang	1257
Surface Modification of SS2205 Duplex Stainless Steel by Plasma Nitriding at Anodic Potential S. Zhao, L. Wang, J.J. Xu and Y. Shan	1263
On Wear Resistance of Laser-Treated Striated Non-Smooth Surface of Nodular Cast Iron Z. Ming	1268
Research on Impact Property of 40Cr Steel under Different Tempering Conditions Y.Q. Xiao, S.X. Liu, M.L. Kang, J.M. Zeng, G.A. Wang, Q.H. Meng and Y.Z. Deng	1271
Corrosion Behavior of ZnAlMg Coating of Dual Phase Steel Sheet X.D. Hao and Q.F. Zhang	1275
The Electrochemistry Behaviour of Carbon Steel in 55% LiBr Solution with A-Mo Inhibitor J.L. Li, C.H. Liang and N.B. Huang	1280
Study of Heat Treatment Technology on Medium-Carbon-Low-Alloy-Steel Large Hammer Formation of Gradient Performance M.C. Pan, X.L. Liu, R. Zou, J. Huang and J.C. Han	1288
Properties of P91 Steel Steam Conduit Pipe with Low Hardness in a 600 MW Power Plant Y.F. Zhao, H.S. Cai, L.W. Wang, J.F. Geng, D.F. Ma, Y.J. Niu and Y.C. Liu	1293
The Production and Utilization of Two Smelting Processes for V-Ti Magnetite Z.H. Zhang, W.M. Kong, F.C. Zhao and X.D. Xie	1297
Investigation on Mechanical Properties and Microstructure of SSM 356-T6 Aluminium Alloy by Diffusion Bonding C. Meengam, P. Muangjunburee and S. Chainarong	1301
Experimental Study on Corrosion Prevention of a Multilayer Coating System H. Yang, S. Qiu, Y.F. Lu, Z.X. Liu and F. Lu	1307
Cellular Automata Simulation of Grain Growth in Magnesium Alloy Heat Affected Zone of Laser Melt Injection M.J. Zhao, Z.C. Deng, L.Z. Zhao and J. Zhang	1312
Effect of Heat Treatment Hardness of Al-Cu-Mg-Li-Zr, Al-Mg-Si and Al-Mg-Zn Alloys-Experimental Correlation Using Factorial DOE and ANOVA Methods M.M. Tash and S. Alkahtani	1317
Influence of Microstructure and Stress Ratio on Fatigue Crack Propagation in TiAl Alloy Y.R. Zuo, Z.Y. Rui, R.C. Feng, D.C. Luo and C.F. Yan	1330
Calculations for Diffusion Probability and Diffusivity of Interstitial Atom in one Lattice for γ-TiAl Alloy G.T. Zhang, Z.Y. Rui, R.C. Feng and C.F. Yan	1334
Effects of Sm and Nd on Microstructure and Properties of AZ81 Magnesium Alloy Q.A. Li, W.J. Liu and Z. Chen	1338
Effect of Adding Y_2O_3 on Synthesis of Al_4SiC_4 Powders S.M. Zhou, C. Yu, C.J. Deng, H.X. Zhu and W.J. Yuan	1342
The Effects of Solid-Solution on Properties and Microstructure of 6063 Aluminum Alloy B. Chen, Y.J. Wu, T. Zhu and X.Y. Li	1346
The Effect of Cr Addition on the Microstructure of TiNi: First-Principles Calculations W.B. Zhang, K. Long and X. Cheng	1351
A Study on Thermal Fatigue Behavior of Al-Si-Mg Casting Alloys X.H. Zhang, C.W. Lai, M.F. Xian and G.C. Su	1355
The Purification of ZL114A Alloy by Means of Bubble Floatation H.R. Ge, W.K. Gan, J.B. Lu, Z.L. Hu, D.G. Cao, J.L. Yan, C.Y. He, H. He and J.M. Zeng	1361
Study of Damage Limit for Aluminum Alloy Plates with Surface Cracks under Cross-Thickness Bending H.Y. Yuan, Y.X. Wu, Z.H. Wu and Z.Q. Liao	1365
Creep Properties of Mg-12Gd-3Y-1Sm-0.5Zr Alloy Q.A. Li, Z. Chen, W.J. Liu and X.J. Song	1370

Effect of Pre-Treatment on the Precipitation Hardening of a Novel Al-Mg-Si Alloy L.W. Quan, R. Wu, D.R. Fang, Y.Y. Liu and C.C. Wang	1374
Effect of Ultrasonic/Electromagnetic Energy-Field on Structure Andproperties of Cast-Rolled 3003 Aluminum Alloy Strips J.P. Li, P. Yue and C. Shi	1378
Study on Preparation and the Characteristics of Environment-Friendly Ce-Ti-Mn Conversion Coating on Aluminum Alloy 6061 X.F. Yang, T.Q. Liang, W. Wei, D.H. Deng, G.Q. Xu and C.H. Zhao	1385
Effect of AlF_3 Addition on Electric Conductivity of $NiFe_2O_4$-Based Cermet Inert Anode F.X. Wei, G.X. Yu and Z.L. Wang	1391
Microstructure and Mechanical Properties of Magnesium Alloy AZ61with 1%Sn Addition C. Jun and Q.A. Li	1396
Microstructure and Mechanical Properties of Cobalt Alloy Coating Deposited by Electro-Spark Q.F. Jing, Y.F. Tan, J. Tang, H. Tan, X. Hong and W.G. Wang	1400

Chapter 14: Materials Processing Technology

Characterization of Ni-Based Alloy Submicron WS_2/CaF_2 Composite Coatings Deposited by High Velocity Oxy-Fuel (HVOF) Spray Process X.F. Zhang, L. Zhang and Z.Y. Huang	1407
J-Integral and Plastic Limit Load of Hole-Edge Crack in Plate under Biaxial Loadings Y.Q. Zhang, Z.X. Wang and W. Xu	1412
Experimental Study of Electron Beam Welded QCr0.8 Bronze Joint T. Wang, H.Q. Wang, B.G. Zhang, S.S. Zhong and J.C. Feng	1416
Finite Element Analysis of Rolling Process for Pilger Mill N. An and L. Hai	1420
Surface Modification of Magnesium Hydroxide by A-174 Silane N.Y. Wang, Z.Q. Liu, L.J. Li and L.X. Zhu	1424
The Impact of Sinter and Thermoprint on Film Formation of nanoTiO₂ Slurry J. Qian, M. Liu, Y.H. Zhou, T.L. Ma, Z.Q. Zhu and H.L. He	1431
Design of Lead-Free Solders and Pollution Control of Lead G.S. Gan, C.H. Du and C.T. Li	1435
Research on the Coating Surface Microstructure of Coated Paper Related to Binder Migration Y. Li, W.J. Gu and B.G. He	1439
Effects of Thermal Transfer Paper Performance on Transfer Quality D. Wan	1443
Finite Element Analysis of Temperature Filed and Stress Field of Reducer J. Zhang and F. Wang	1447
Describing the Influence of Ink Type on Ink Penetration and Distribution Y. Li, W.J. Gu and B.G. He	1451
Numerical Optimization of the Parison Thickness of Oil Drum in Extrusion Blow Molding J. Wang, J. Peng, J.N. Chen and J. Li	1455
Research on the Relationship between Drying Method and Binder Distribution by Tracing Technique Y. Li, W.J. Gu and B.G. He	1460
The Effect of Welding Materials on 1Cr18Ni9Ti and 2Cr13 Steel Welding Joints Fracture Microstructure Pattern S.H. Zhang, Y.T. Zhao and J.W. Zhou	1464
Light-Gas Eccentrically High Speed Laser Cutting of Silicon Steel on Cold Rolling Production Line L.J. Xin and Z.Y. Wang	1469
Interface Microstructure in Laser Welding-Brazing of AZ31B/TC4 Dissimilar Alloys	1475
Research of Milling Technique on V/Si by Mechanical Alloying B. Zhang	1479
Laser Glazed Color Surface on Whiteware J.W. Fan, M.J. Chao and Z.Q. Jiao	1483

Research on Mechanochemical of Silica and its Composite Powders J.J. Zhu, H.Z. Gu, T.X. Peng and B.H. Sun	1487
Energy Grade Analysis of Liquefied Natural Gas Cold Energy Utilization H.Y. Si, K. Sun, N. Mei, M. Xu, L. Chen and X.D. Zhang	1492
Study on the Oxidation Degumming of Ramie Fiber C.R. Meng and C.W. Yu	1497
Study on the Mechanical Property of Ramie Fiber in Different Temperature G.Y. Cao, X.F. Xiao and W.L. Xu	1501
A Novel Design of Heat Exchanger for Epsom Salt Cooling Crystallization A.Q. Zhang and Y.F. Wang	1505
Modification and Application of Sodium Bentonite in the Coating of Color Ink-Jet Paper Y.G. Yang and Q.Z. Gao	1509

Chapter 15: Metallurgical Science and Technology

Characteristics of the Sierra Leone High Alumina Iron Ore and Utilization in Sintering J.J. Dong, G. Wang, M.F. Zuo, H. Li and Q.G. Xue	1515
Determined the Activation Energy of the Decomposition of Calcium Carbonate by Nonlinear Isoconversional Method S. Zhang and D. Tang	1522
Study on the Coupling Behaviour of Microwave Absorption for Sulphide Concentrate Q.H. Mo, X.W. Zhou, X.J. Su and C.L. He	1526
Microwave Roasting Pyrite for Removal of the Sulfur and Arsenic C.L. He, S.J. Ma, X.J. Su and Q.H. Mo	1531
Effects of Fuel on Gasification Dephosphorization of High-Phosphorus Oolitic Hematite Ore F. Liu, W. Zhang and H.W. Xing	1536
Study of Optimizing Combined-Blowing in EAF Based on K-Medoids Clustering Algorithm L.Z. Yang, R. Zhu, K. Dong, W.J. Liu and G.H. Ma	1540
Kinetic Study on Sulfuric Acid Dissolution of $\text{Na}_x\text{H}_{2-x}\text{TiO}_3$ from Sodium Hydroxide Molten Method W.J. Wang, T.Y. Xue, D. Wang and T. Qi	1545
Kinetics of Fe^{2+} Oxidization at Different Initial Fe^{2+} and Fe^{3+} Concentration in the Presence of Moderate Thermophilic Bacteria H.Y. Xie, Q.J. Ye, X. Tong, L.K. Gao and J.X. Liu	1549
The Dissolution of Zinc Oxide Ore in Sulfamic Acid Solution D.D. Wu, S.M. Wen, J. Yang, Q.C. Feng and Y.B. Mao	1554
Optimization of Soft Reduction Process for Continuous Thick Slab Casting T. Han, C.G. Cheng, J.X. Mei, J.F. Zhu and Y. Jin	1558
Ca-Si Alloy Addition Followed by Acid Leaching as a Route to Solar-Grade Silicon P. Zou, K.X. Wei, W.H. Ma, K.Q. Xie, J.J. Wu and T. Luo	1562
Study on the Phase Composition and Particle Size of Boron Mud Z.Q. Ning and L.L. Zhang	1568
Study on Formation of Bottom Dross in Hot-Dip Zn-0.1%Ni Alloy G. Luo, Y.B. Wang, J.M. Zeng, H. He, J.L. Yan, C.Y. He, R. Zhang and S.N. Li	1572
Thermodynamics Study on the Disproportionation of AlCl in Vacuum Y.B. Feng, B. Yang and Y.N. Dai	1576
Microstructure and Property of Plasma Sprayed TiB_2 Wettable Coatings on Carbon Cathodes R.Z. Peng, G. Xie, Y.Q. Hou, L. Tian and X.H. Yu	1580
<i>In Situ</i> Observation of Inclusions Behavior in Molten State and Solidifying Interface of Tire Cord Steel Z.L. Zhu, G.J. Ma and C.F. Yu	1584
Effects of Solid Solution Temperature on the Structure and Properties of TC16 Titanium Alloy Bars Q.M. Liu, Z.H. Zhang, H.Y. Yang and S.F. Liu	1588
Effect of Semi-Solid Processing on Solidified Microstructure and Mechanical Properties of Rheo-Slurries A356 Sand Cast T. Chucheeep, J. Wannasin and S. Wisutmethangoon	1592

Elevated Temperature Tensile Behavior of Rheo-Cast 7075-T6 Al Alloy Produced by GISS Technique

N. Mahathaninwong, S. Wisutmethangoon, T. Plookphol, J. Wannasin and S. Chantaramanee 1597

Chapter 16: Exploration and Extraction of Mineral Resources, Mining Engineering

Process Mineralogy Study on a Sandstone Copper Ore

Y.X. Fu, B.L. Ge, Q. Li and J.L. Zhang 1603

Geologic Feature of Shilipo Copper Deposit in Xinjiang

Y.F. Liu, Y.S. Hou and X. Shan 1607

Experimental Study on Recovery of Nickel from Nickel-Bearing Laterite

X.H. Li, B.Y. Tuo, Q. Zhang and S.J. Zhang 1611

The Characters of Bairendaba - Huanggangliang Deposits, Inner Mongolia, China

S. Xu, Y.F. Liu, Y.Q. Yang and S.Y. Li 1616

Research on Bulk Flotation Discarding Tailing of Copper and Zinc Polymetallic Sulfide Ores

H.Y. Xie, Q.J. Ye, P. Zhou, L.K. Gao, X. Tong and J.X. Liu 1621

Geological Significance of the Volcanic Rocks in Weinan Area, Eastern Tianshan, China

D.W. Liu and G.H. Wang 1626

Effect of Feed Solids on High Gradient Magnetic Separation of Cylindrical Magnetic Matrix

D. Li, L.Z. Chen, J.X. Huang and J.W. Zeng 1634

Study on the Relationship of the Quantity of CO₂ Produced and the Wind Speed

X.L. Sun, E.X. Gao, H.F. Zhang, Q. Wang and L.J. Li 1638

Application of Reservoir Geological Modeling in the Wang Longzhuang Block

S.Y. Chen, J. Xie, J.B. Zhou, Y.S. Ding and X.H. Cui 1642

Synergic Surface Magnetization of Siderite on Hematite

X.Q. Wu, L. Dai, C. Dai, Z. Cheng, L.S. Yi and X.Q. Liu 1647

Arsenic Removal from Pyrite Cinders by Oxidizing Roasting with Sodium Hydroxide Addition

S.J. Bai, S.M. Wen, H.F. Zhao and C. Lv 1655

Recycle of Spent Potlining with Low Carbon Grade by Flotation

N. Li, G. Xie, Z.X. Wang, Y.Q. Hou and R.X. Li 1660

Floating Separation between Collophanite and Dolomite Affected by Inorganic Interaction

X.T. He, Q. Zhang and S.H. Qin 1665

The Effect of Ca²⁺, Mg²⁺, SO₄²⁻ and PO₄³⁻ on Phosphate Ore Flotation

X.B. Li, Z.H. Liu, Q. Zhang, S. Mao and L.J. Li 1670

The Solution Chemistry of the Effect of the Dissolved Ions on the Flotation Process in Collophane-Dolomite System

Z.H. Shen, X.T. He, Q. Zhang and X.F. Huang 1674

Theoretical Calculation of Dissolution Equilibrium for Cerussite in Pulp Solution

Q.C. Feng, S.M. Wen, Q.B. Cao, X. Bai and W.J. Zhao 1679

Theoretical Calculation of Dissolution Equilibrium for Galena in Pulp Solution

Q.C. Feng, S.M. Wen, D. Liu, Z. Ye and W.J. Zhao 1683

Effect of FeO Content in Ore on the Properties of Sinter

Y.Q. Sun, D.H. Liu, L.Y. Sun, Q. Lv and R. Liu 1687

The Experimental Research on Combining Binary Compound Flooding and Profile Control Technology to Improve Recovery Efficiency

S.N. Yuan, G.S. Cao and X.W. Duan 1691

Nonlinear Regression Analysis of Binary Flooding Recovery Influence Factors

Y. Zhang, C.R. Fu, Y.Y. Zhu, Q. Zhang and J. Wu 1696

Research and Implementation on Face-and-Body Detection of the Stray Current of Mine

L.J. Li, Q. Zhang, Y.Q. Qiu and X.Y. Zhao 1706

Application of Virtual Instrument Technology in Mine Hoist Control Based on the LabVIEW

J.C. Chen, P. Xie and L. Pang 1714

Study of Luming Molybdenum Mine West Zone EH4 Geophysical Prospecting and the Geological Structure Influence on Slope Stability	
Z.A. Huang, H.Y. E, Y.H. Zhang, Y.K. Gao and M.S. Gong	1719
Experiment Research of Luming Molybdenum Mine Rock Physical and Mechanical Properties	
Y.H. Zhang, B.C. Zhao, Z.J. Ye, Z.A. Huang and M.S. Gong	1726
The R&D of the Emergency Rescue Vehicles Based on Borehole-Type Refuge Chamber	
Z.A. Huang, X.T. Wang, Y.H. Zhang and Y.K. Gao	1732

Chapter 17: Measurements and Modeling in Material Science

The Revision of Paper Surface Efficiency and its Influences on Printing Qualities	
Y.G. Yang and Q.Z. Gao	1743
Projection Pursuit Regression Based on Hermite Polynomial for Atmospheric Corrosion Data Application	
W.D. Nie, X.M. Wang, Z.N. Li and X.G. Li	1747
An Electromagnetic Parameters Measuring System Based on a Concave Cylindrical Cavity	
X.Y. Chen, X. Liu, L.F. Ye, X.Y. Li, F. Xiao and Q.H. Liu	1754
Research on a Ultrasonic Detection Method about Disfigurements of Press Roll	
Z.R. Yan, J. Si, X.M. Luo and H.S. Hou	1758
Fuzzy Prediction of Molten Iron Silicon Content in BF Based on Hierarchical System	
Q.H. Li	1762
New Method of Distinguishing X-Ray Diffraction Curves about Laser Structure	
S.Y. Zhang, J.L. Tang, Z.P. Wei, D. Fang, X. Fang, X.Y. Chu, F. Fang, J.H. Li and X.H. Ma	1768
Non-Destructive Characterization of Welding Defects Using MMM and ACFM Methods	
Y.T. Gao, L.H. Wang, X.J. Miao and J.C. Leng	1773
Numerical Simulation and Die Optimization Design of Extrusion Process for a Complex Hollow Aluminum Alloy Multi-Hole Die	
W. Xia, C. Wang, L.H. Jiang and J.M. Zeng	1778
Activity Calculation Model for Oxygen Converter Final Slag	
T. Wang, W.D. Qiu, H.Z. Gu and W. Zhao	1784
Numerical Simulation of Air Gap Formation in Water-Cooled Mold Casting	
H.S. Zhang, D.P. Zhan, B.T. Deng, L.J. Wang and Z.H. Jiang	1790
Application of Electron Probe Microanalyzer (EPMA) to Depositional Environment Identification of Sedimentary Rock	
Q.K. He and C.Y. Shi	1795
Microseismic Monitoring and Numerical Simulation Research of Floor Failure Depth in Extra-Thick Coal Seam	
A.P. Cheng, Y.T. Gao, C. Liu and J.F. Chai	1799
Direct Current Heating Model for the Siemens Reactor	
Y.Q. Hou, G. Xie, Z.F. Nie and N. Li	1805
CFD Simulation Research on Flow Characteristics of Fluidized Beds	
L.N. Han and L.M. Wang	1809
Study on Kinetic Characteristics of Solid-Liquid Two-Phase in Transporting Pipeline of Natural Gas Hydrate	
L.Y. Shang, S.L. Zhao, Z. Pan and T.L. Huang	1814
Numerical Simulation of Flue Gas Flow and NH₃ Diffusion Properties in SCR System	
W.P. Hong and S.C. Jian	1819
Numerical Investigation on the Stirred Reactor with Rushton Turbine	
L. Dai, L.B. Yang and K. Liu	1823
Uncertainty Evaluation of Copper Reference Solution	
Y.L. Li, D.M. Liao and R. Rui	1827
A Coaxial Measurement System for Electromagnetic Parameters at Microwave Frequencies	
X. Liu, X.Y. Chen, Y. Lin, L.F. Ye, F. Xiao and Q.H. Liu	1832
Numerical Simulation of Projectile Material Phase Transformation during Penetration	
J.B. Wang, Q.M. Zhang, G.Y. Xu and C.L. Feng	1836

The Material Mechanical Properties Reverse Calculation Method Bases on Depth-Sensing Indentation

G.L. Xie, F. Qin and H.L. Yang

1842

The Use of Renka Cline Algorithm in X-Ray Diffraction Residual Stress Measurement

C.G. Li, Z.C. Dai, Z.H. Yun, D.F. Li and X.H. Cao

1846