

Table of Contents

Preface and Organizing Committee

Chapter 1: Chemical Engineering

| | |
|--|----|
| Synthesis and Properties of Cellulose Diacetate Graft Poly(p-dioxanone) Copolymers via the Couple-Grafting Copolymerization J. Zhu and X.L. Wang | 3 |
| Photocatalytic Performance of Co_3O_4 Prepared with the Assistance of Different Surfactants T. Wang, J.Z. Li, S.H. Wang, J.B. Zhong and J. Zeng | 8 |
| Phosphine-Free Synthesis and Photoluminescence Properties of $\text{ZnSe}:\text{Cu}/\text{ZnSe}/\text{ZnS}$ Core/Shell Nanocrystals J.Z. Niu, G.M. Tian, L.L. Zheng, Y.G. Cheng, S.M. Zhu and H.S. Hao | 12 |
| Preparation and Characterization of Aqueous Polyurethane Dispersions Derived from Anionic Polyester Diols X.D. Chen and Y.H. Yi | 17 |
| Study on High Temperature Corrosion of Alloy 600 in NaOH Solution Y.C. Li, R.F. Zhang, C.L. Yuan and F. Yu | 21 |
| Research Progress on Preparation and Modification of Polyvinylidene Fluoride Membrane Y.J. Zhang, M.Y. Yuan and R. Lin | 25 |
| Liquid-Liquid Equilibria for Acetone + Several Citrates Aqueous Two-Phase Systems at Different Temperatures S.P. Hu, J. Han, Y.S. Yan and Y.T. Hu | 30 |
| Sol-Gel Template Synthesis and Photocatalytic Property of Nano-TiO_2 Co-Doped with La and Fe Q. Li | 36 |
| An Improved TB Method for the $\text{AlGaIn}/\text{GaIn}$ Superlattice J.F. Chen and X.Z. Yu | 41 |
| Monomer Synthesis and Characterization of Novel Aromatic Polyamides W. Hu, G.X. Zhang, F.X. Zhang, H. Zheng and M. Lu | 45 |
| Use of CAS Colorimetric Assays to Evaluate the Effect of Copper Ion on Methanobactin Production by <i>Methylosinus trichosporium</i> 3011 J.Y. Xin, J.L. Jiang, S. Zhang, C.Z. Yan, Y.X. Zhang, J. Dong and C.G. Xia | 50 |
| Study on Property of Anti-Bacterial UV Ink with Zinc-Copper W.T. Huang, G.X. Chen, B.L. Tang and M.G. Yu | 54 |
| Supercritical CO_2 Extraction of <i>Rhizoma Atractylodis macrocephalae</i> Z. Huang, X.H. Shi, S.F. Liu and W.J. Jiang | 60 |
| Kinetics of Hydrothermal Decomposition of Potassium Feldspar with Calcium Hydroxide Y.Q. Liu, H.T. Xia and H.W. Ma | 65 |
| Dyeing Acceleration Theory of Molecule Companion on Silk with Reactive Dyes G.X. Zhang, L. Zhong, F.X. Zhang, X.T. Xue, M. Lu, H. Zheng and D.Y. Wu | 70 |
| Research on Refining Process of Synthetic Folic Acid X.S. Liang, C.H. Ma, P.X. Li, X.L. Liu and F.Q. Zhao | 74 |
| Li^+ Extraction/Insertion Reaction with Spinel $\text{Li}_4\text{Mn}_{0.5}\text{O}_3$ J.H. Jiang | 78 |
| Effect of Preparation Conditions of Calcium Borate Nanoparticles on Oil-Solubility Y.Q. Li | 82 |
| Structure of Phosphate Amphoteric Cassava Starch and its Reinforcing Effect on Secondary Fiber D.D. Yu and H.W. Zhang | 87 |
| Effect of Activated Attapulgite on Ammonia-Nitrogen Removal F. Liu, T. Hu, S.Y. Ren and Y.Y. Shi | 92 |
| Effects of Pre-Carbonization on Structure and Electrochemical Performances of Amphiphilic Carbonaceous Material-Based Activated Carbons C. Zhang, C.Y. Wang, M.M. Chen, J.M. Zheng and J.Z. Wang | 96 |

| | |
|---|-----|
| Preparation and Characterization of Bentonite Supported Silicotungstic Acid D.N. Li | 101 |
| Mechanism for Synthesizing Barium Hexagonal Ferrite by Sol-Gel Method Y. Liu, T.J. Wang, Y. Liu, X.J. Li and Y. Liu | 105 |
| Influence of Preparation Conditions of the Solid Base Catalyst on the Performance of Synthesizing Polyglycerol J.W. Qu, M.W. Wang and R.L. Wang | 109 |
| Polymorphic Changes of Calcite Carbonate Sediment in Aqueous Solution J.X. Chen, Q. Sun, T.J. Liu, J. Ulrich and L. Xie | 113 |
| Property of $\text{LiMn}_{0.5}\text{Ti}_{0.75}\text{O}_3$ Type Ion-Exchangers and Extraction for Lithium J.H. Jiang | 118 |
| Phase Equilibria of the Salt-Water System of Lithium and Borate Ions L.J. Yang, D.L. Shen, S.Q. Wang, Y.F. Guo and T.L. Deng | 122 |
| Solid-Solid Synthesis, Characterization and Thermal Decomposition of Thiourea Complex of Antimony Trichloride G.Q. Zhong, M. Gu and Y.Q. Jia | 126 |
| PH-Sensitive Nanoparticles of Derivated Dextran Grafted with 1-(3-Aminopropyl) Imidazole H. Lei and G.L. Zhang | 131 |
| Effects of Diameters on the Catalytic Activity of Spherical V-MCM-41 in the Selective Oxidation of Styrene Y. Chen, H. Qin, X.B. Shi and Y. Kong | 137 |
| Effect of Fe Content on the Structure and Properties of Sr-Fe-Co Oxides X.H. Huang, J. Qiao and Q. Zhang | 141 |
| Synthesis and Structural Characterization of Multifunctional Silicone Co-Polymer M.Z. Song, H.J. Zhang, X. Zhao and J.B. Zhang | 147 |
| Study of Effect of Water on the Physicochemical Properties of 1-Buthyl-3-Methylimidazolium Chloride Ionic Liquids G.C. Tian, H.K. Feng and J.L. Zhang | 152 |
| Determination of the Curing Techniques of Octaepoxysilsesquioxane with a Diamine Z.P. Zhang, J.Z. Pei, C.Q. Fang and S.F. Chen | 157 |
| Synthesis of M-Toluidine-Aniline Chirality Copolymers Induced by D-Camphorsulfonic Acid H.Y. Yan and K.C. Kou | 161 |
| Rapid Determination of Chemical Oxygen Demand in Sugar Refinery Wastewater by Short-Wave Near-Infrared Spectroscopy T. Pan and Z.H. Chen | 167 |
| Phenol Degradation Characteristics and Immobilization of <i>Acinetobacte</i> Strain HY1 J.B. Jia, Y. Yang and H.P. Yu | 172 |
| The Preparation of Solvent-Free Polyurethane Laminating Adhesive with Mixed-Polyols S.L. Chen, G.X. Chen, Q.F. Chen, C.J. Jia and Q. Wang | 177 |
| Activation of Corn Starch and Effect of the Activation on its Reactivity Y. Wang, J.Y. Xin, T. Liu, K. Lin, C.Y. Zhang and C.G. Xia | 183 |
| Simultaneous Determination of Trace Antimony and Bismuth in Jilin Ginseng with Microwave Digestion Hydride Generation Atomic Fluorescence Spectrometry S.Y. Guo, Z.J. Ji, B. Feng and J. Bian | 188 |
| Structure and Thermo-Chemical Stability of Sr-Fe-Co-O Mixed Metal Oxides X.H. Huang, J. Qiao and Q. Zhang | 193 |
| Synthesis and Evaluation of Starch Graft Copolymer Applied as Dispersant in Coal-Water Slurry J.G. Li, F. Zhao, G.H. Zhang, J.F. Zhu and L. Liu | 198 |
| A Novel Amphiphilic Polymer Prepared by the Ring-Opening Copolymerization from Hydroxyethylcellulose and Poly(ρ-Dioxanone) in Ionic Liquid J. Zhu and X.L. Wang | 203 |
| Study of Methylene Blue Adsorption on Mesoporus Molecular Sieve from Aqueous Solution Q.L. An | 207 |
| Preparation and Characterization of Water-Soluble CdSe/CdS Core/Shell Quantum Dots M.L. Li, Q. Yu, Y. Xu, C.J. Zhou and Q.G. Lu | 212 |

| | |
|--|-----|
| Synthesis of Metal Core in the Apoferritin Cavity T. Wang | 216 |
| Iodide Selective Electrode Based on Cobalt(II) Complex with Dual-Core Schiff Base as Neutral Carrier G. Xu, W.L. Dong and L.Y. Ren | 221 |
| A New Method of Separating and Refining β-Methylnaphthalene from Wash Oil Y.S. E and X.D. Sun | 225 |
| A Highly Selective and Sensitive Fluorescent Probe Based on Quinolone Derivative for Hg^{2+} in Aqueous Solution J.J. Tian, X. Zhou, H.J. Hao and X. Wu | 229 |
| Fabrication of a New Type Modified Attapulgite and its Best Adsorption Conditions of Cu^{2+} Ion D.Y. Jiang, Y.Y. Shi, L.D. Feng and R.M. Tang | 234 |
| Nonthermal Plasma Hybrid Technology for VOCs Decomposition T. Zhu, Y.D. Wan, Y.J. Liu, Y. Yuan, H.R. Li, S. Chen and J.L. Zhou | 238 |
| Lipase-Catalyzed Synthesis of Ferulyl Oleins and their Inhibition Effects on Nitrosamine L.L. Chen, J.Y. Xin, Y.X. Zhang and Y. Wang | 242 |
| Study on a Brushing Hydrophobic Agent of Gypsum H. Pan and G.Z. Li | 246 |
| Influence of Polyols as a Co-Stabilizer on Stabilization Efficiency of Calcium/Zinc Stabilizers to PVC J.G. Gao, X.Q. Liu, J.B. Yang and F.L. Zhu | 251 |
| Influence of Cellulase to Aggregation Structure of Bleached Softwood Pulp M. Du, X.P. Li and Z.M. Yao | 255 |
| Effect of Neutral Xylanase Pretreatment on ECF Bleaching of KP Bamboo Pulp with Low Kappa Number J.B. Li, M.Y. Zhang, X.X. Xia and Y.J. Liu | 260 |
| Synthesis, Characterization of the Mn(II) Complex of Rutin and Interactions between the Complex and Serum Albumins H.X. Li, K.J. Wang, D.Y. Zhang, Y.P. Wu, H.X. Feng, Y. Wang and Y.M. Song | 265 |
| Synthesis of 5,10,15-Tris(4-nitrophenyl)-20-hydroxyphenylporphyrin and its Spectrum Study H.B. Fa, H. Qi, W. Yin, D.Q. Huo and C.J. Hou | 269 |
| Growth and Measurement of Mg Doped AlGaIn/GaN Superlattice with Low Resistivity J.F. Chen | 274 |
| Adsorption Kinetics of Reactive Dyes on Silk with Octyl Butyl Dimethyl Ammonium Bromide as Accelerant C. Chen, G.X. Zhang, F.X. Zhang and H. Zheng | 278 |
| Structure, Acid Properties and Catalysis Performance of MCM-22 “Family” Zeolites on the Alkylation of Benzene with Propylene F. Zhao, Y. Zhang, S.D. Geng, L.F. Chen and W. Wang | 283 |
| Ionic Liquid-Catalyzed Synthesis of Diethylene Glycol M. Zheng, X.Y. Li, R.Q. Guan, Y.M. Liu, Y.J. Zhao and Y.L. Tai | 287 |
| Solid-Solid Reaction Preparation for Nanoparticles of Bioinorganic Complex of Bismuth and Serine at Room Temperature G.Q. Zhong, R.R. Jia and Y.Q. Jia | 292 |
| Hydrogenolysis of Glycerol on Supported Ru-Co Bimetallic Catalysts J. Feng, B. Xu, W.D. Jiang, W. Xiong and J.B. Wang | 297 |
| Theoretical Study on the Reaction of $Et_3GeCH=CH_2$ with Et_3SiOH X.C. Chen, X.Y. Han, W.Y. Ma and L.G. Gai | 301 |
| Preparation of the Multiple Rare Earth Conversion Membrane Based on the Magnesium Alloy AZ91 and their Corrosion Resistance Performance G.H. Zhang, C.C. Li, M. Li, Y. Zhang and H.R. Geng | 305 |
| Synthesis of Ultrafine Cr_3C_2 Powders by Carbothermal Reduction of Precursors Y.Z. Jin, F.M. Ye, C.H. Liu and R.S. Yang | 310 |
| Modification of Cyanate Ester Resin by Epoxy-Functionalized Polyhedral Oligomeric Silsesquioxane Z.P. Zhang, J.Z. Pei, C.Q. Fang and S.F. Chen | 314 |

| | |
|---|-----|
| Adsorption Behavior and Kinetics of Methyl Orange in Water on Activated Carbon Y.H. Wu, Q. Yu, H.D. Xu, Z.Y. Liu, M.Z. Sun and J. Zhu | 318 |
| Crystallization Properties of Nucleated Poly(lactic acid) Y. Chen and Q. Dou | 322 |
| Peroxyl Radical Scavenging Ability of Fifty Kinds of Chinese Medicines Determined by an ESR Spin-Trapping Technique F.H. Wang and C.H. Huang | 327 |
| Preparation of ZnO:Zr Thin Films by Sputtering Zn:Zr Targets C.K. Yuan | 331 |
| LaF₃ Influences on Wear Resistance of TiC/Ni Cladding Layer by Laser Cladding <i>In Situ</i> Fabricated C.Q. Wang, L.J. Wang, J.Q. Wu, Z.Z. Chen and Y.J. Niu | 335 |
| Synthesis and Adsorption of Molecularly Imprinted Polymers of Dibutyl Phthalate in Food J.F. Zhu, G.H. Zhang, T. Shang and W. Xiong | 340 |
| Preparation and Characterization of Cyanoethylated Cellulose Fiber H.J. Xiu, Q. Han, R. Zhang and L.H. Liu | 344 |
| Boron Recovery from the Liquid Mineral Resources C.X. Lin, D.L. Gao, Y.F. Guo, S.Q. Wang and T.L. Deng | 349 |
| Synthesis and Structural Characterization of Mg/Al Hydrotalcite-Like Compounds Y. Guo, W.J. Liu, S.H. Zhang, S.Y. Yang, K.F. Zhang and J.J. Liao | 353 |
| Preparation and Characterization of Anodic Alumina Membrane with Nanopore Arrays X.H. Tang, W.B. Yang, Y.F. Cheng and Q.G. Huang | 358 |
| Fuchsine Adsorption from Aqueous Solution by Epichlorohydrin Crosslinked Peanut Husk Y.H. Song, S.M. Chen, J.M. Ren, Y. Gao and H. Xu | 362 |
| Effects of Reactive Compatibilizer on the Rheological Properties and Crystallization Behavior of Poly(Trimethylene Terephthalate) Blends with Core-Shell Structured Modifiers K.Y. Wang, Y. Ye, X.Q. Zhu and F. Cao | 366 |
| Studies on Electrooxidation Reaction of 4-Chlorophenol on Carbon Electrode by <i>In Situ</i> FTIR F. Wang, Y.W. Ye, C.A. Ma and M.C. Li | 370 |
| Study on the Oxidation Coupling of Acetylene Catalyzed to Synthesize Carbyne by Ag (I) H.Y. Liu, Z. Zhang, W. Hu and R. Wang | 374 |
| Synthesis of Well-Dispersed Copper Nanoparticles by L-Ascorbic Acid in Diethyleneglycol J.C. Zhou, W. He, Y. Tang and Y.S. Hu | 378 |
| Preparation and Characterization of Cellulose Fibers Modified with Epoxy Chloropropane H.J. Xiu, Q. Han, K. Peng and K. Zhang | 382 |
| Flue Gas Desulfurization over Copper Oxide Loaded on Complex Carrier of Attapulgite and Activated Carbon Y. Yang, H.P. Yu, J.L. Jiang and Y.H. Qian | 387 |
| The Preparation of Chemoselective Ruthenium Catalyst for the Hydrogenation of Ketones X.Y. Li, M. Zheng, R.Q. Guan, Y.M. Liu, Y.J. Zhao and G.K. Chao | 391 |
| Effect of Hydrogen Peroxide Detemplation on the Structure and Acid Properties of MCM-56 Zeolite F. Zhao, Y. Zhang, H.J. Xing, M.J. Jia and T.H. Wu | 396 |
| Preparation and Characterization of AgA Zeolite/Polysulfone Membranes T.M. Zhang, Z. Huang, X.H. Zhang and L.Y. Guo | 401 |
| Chemical Fixation of Carbon Dioxide Catalyzed by Bimetallic Aluminum(Salen) Complex Z.X. Duan, T. Fang, M. Wang and G.Z. Fan | 406 |
| Experimental Study on Catalytic Oxidation of Cyclohexane Catalyzed by Phosphomolybdic Acid J.J. Zhang, H.L. Song, J. Wang and H. Song | 411 |
| COD Removal of Washing Water by Photodegradation Q.L. Zhang, Z.J. Chen, Y. Zhu and H.Y. Xie | 415 |
| Studies on Preparation and Adsorption Behavior of Cd²⁺ Ions-Imprinted Polymer Y.Y. Shi, Q.H. Zhang, L.D. Feng and Q.P. Xiong | 419 |
| Adsorption of Cd(II) and Pb(II) from Wastewater onto Porous Lignin Beads X.F. Li and X.G. Luo | 423 |

| | |
|--|-----|
| Hydrometallurgical Purification of Metallurgy Grade Silicon by Acid Leaching R. Zeng, Y.H. Wang, J.X. Zhang, J.Q. Xu, H.Y. Li, X.F. Chen and W.D. Xing | 428 |
| Experimental Study on Catalytic Combustion of Gasoline Vapor P.W. Wang, Y. Du, D.W. Zhou, J.J. Liang and Y. Zhou | 432 |
| Solubility Prediction for the Reciprocal Quaternary System (Li^+, Mg^{2+}//Cl^-, SO_4^{2-}-H_2O) at 273.15 K Using Pitzer Ion-Interaction Model S.Q. Wang, Y.F. Guo and T.L. Deng | 437 |
| Study on Preparation Process of ITO Nano-Powder by the Method of Ammonia Complexation L.D. Sun, D.S. Huang, W. Liu, Y. Jiang, R.M. Xiao and Z.J. Li | 441 |
| Alternating Copolymerization of Carbon Dioxide with Cyclohexene Oxide Catalyzed by a Novel Catalyst L.D. Fan, G. Qin, X.X. Cao and S.K. Cao | 445 |
| The Effect of BIMGCS12-3 as the Inhibitor for the Corrosion of Mild Steel in 1M Vitriolic Acid Y.M. Sun | 449 |
| Influence of Polyols as a Co-Stabilizer on Stabilization Efficiency of Calcium/Zinc Stabilizers to PVC/ACS Blend J.G. Gao, J.B. Yang, X.Q. Liu and F.L. Zhu | 453 |
| Synthesis and Curing Kinetics of UV-Curable Waterborne Bisphenol-S Epoxy Acrylate/Polyurethane-Acrylate Coating J.G. Gao, F.L. Zhu, J.B. Yang and X.Q. Liu | 457 |
| Electrochemical Behavior of Catechol Oxidation by H_2O_2 Using the Copper Binding Methanobactin as Mimetic Peroxidase H.N. Guan, J.Y. Xin, D.D. Chen, C.Z. Yan, Y.X. Zhang and C.G. Xia | 462 |
| Synthesis and Research of Lithium Manganese Titanium Oxide J.H. Jiang | 466 |
| Photocatalysis Property of Titania-Based Thin Films with Covalent Grafting PANi as Sensitizer H.Q. Liu, F. Lian, L. Zhang and M. Liu | 470 |
| Extraction and Determination of Essential Oil in Different Cultivars of Amomum Tsao-Ko W. Zhang, J.W. Chen, Y. Shen, Z.Q. Yang, S.Q. Xie and S.C. Yang | 474 |
| Experimental Research on Comprehensive Recovery of Iron and Phosphorus from the Low Grade Vanadium-Titanium Magnetite Ore W.Z. Wang, L.P. Chen and C.G. Yang | 478 |
| Study on Flotation Process Reclaiming Associated Phosphor from Magnetic Tailing W.Z. Wang, M.M. Han and C.G. Yang | 482 |
| A Novel Phenomenon of Energy Transfer in $\text{Cd}_{1-x}\text{Zn}_x\text{SiO}_3$: 0.01 Mn^{2+} Phosphor X.M. Zhou and Y.X. Li | 487 |
| Effect of Extracellular Polymeric Substances on Operation of Membrane Bioreactor W.Y. Zhang, X.Y. Wang and L.J. Xi | 491 |
| The Chemically Kinetic Simulation of HCCI Combustion Ignition Process Y. Liu, L.S. Chen, W. Li and Y. Zeng | 496 |
| Analog Computation of Forms of Americium Presence in Aqueous Solution J.H. Lei | 500 |
| Optimization of Microwave-Assisted Extraction of Polysaccharides from <i>Acanthopanax Obouatus</i> Hoo X.R. Li and P. Zhao | 504 |
| Herb Residues Gasification in a Circulating Fluidized Bed F.Q. Guo and Y.P. Dong | 508 |
| Study on the New Flotation Agent Regime for Sichuan Lead-Zinc Mine X.L. Zhang, J.J. Fang, D.W. Liu and S.Q. Zeng | 513 |
| Development of Phosphate Dosing Control System Based on ADAM 6050 and WebAccess Y.C. Li, Y. Jiang, H. Zheng and X.W. Liu | 519 |
| Synthesis and Properties of Multi-Functional Leather Finishing Agent X.M. Song | 523 |
| Lithium Recovery Techniques from Solid and Liquid Mineral Resources H.Z. Zhang, D.L. Shen, D.L. Gao, S.Q. Wang, Y.F. Guo and T.L. Deng | 528 |

Chapter 2: Material Science and Engineering

| | |
|--|-----|
| Analyses of Phase Transformation Mechanism Based on <i>In Situ</i> Observation during Ti-10Nb-5Sn Alloy Heating Cycles | |
| Y. Li, J. Qi, C.X. Zhai and R.F. Qiu | 535 |
| The RE Compound Using in Corrosion Inhibitor of Copper Alloy | |
| F. Xu and S.Z. Wu | 539 |
| Research Progress on Preparation Methods of Nanofibers | |
| M.M. Cheng, F. Wang, L.J. Ma and C. Fan | 543 |
| The Influence on Brittle of Microstructure of Laser Quenching/Nitriding Layer | |
| Y.Y. Cheng, C.Q. Wang, Z.Z. Chen and Y.J. Niu | 548 |
| Antistatic Poly(Ethylene Terephthalate)/Polyaniline-Coating Multiwalled Carbon Nanotubes Nanocomposites | |
| R.X. Wang, H. Wang, K. Zheng and X.Y. Tian | 553 |
| Performance Evaluation of High Modulus Asphalt Mixture with Button Rock Asphalt | |
| S.W. Du and C.F. Liu | 558 |
| A Study on Preparation of Cordierite Porous Ceramics Made from Starch Pore-Forming Agent | |
| P. Fu, Z.L. Huang and F. Zhang | 563 |
| Study on the Influence of High Temperature Homogenizing and Solution on the Microstructure and Property of 4Cr5MoSiV1 Steel | |
| L. Yi | 567 |
| Applications of Phase Change Materials for Energy Saving | |
| H. Liu, Y.R. Tang, Y.F. Guo, S.Q. Wang and T.L. Deng | 572 |
| The Strip Steel Surface Defects Detection Adaptive Preprocessing Method Based on Double Field | |
| Y.L. Wei, B. Li, D. Zhang and Y.H. Qin | 576 |
| The Nonlinear Dynamic Response of Functionally Graded Material Flat Spherical Shells Subjected to Thermal Loading | |
| Y. Dai, X. Chong, L. Zhang and H.Q. Chen | 580 |
| Preparation and Photocatalytic Property of Lanthanum-Doped TiO₂ Nanoparticles | |
| Q. Li and R.Z. Wen | 584 |
| Acoustic Absorption Performance Research of Coir Density Board | |
| J. Yao, L.L. Ma, L. Wei, L.W. Jiang and Y.Q. Li | 589 |
| Experiment Research on an Optical Fiber F-p Ultrasound Sensor for Detecting Internal Defects of Metal Materials | |
| N. Shan, X. Liu and Y.Z. Ma | 593 |
| Preparation and Properties of Calcium Sulphate Whisker/Natural Rubber Composites | |
| Z.B. Man, Y.H. Chen and M. Yang | 597 |
| Printing Performance of Different Pigment Coated Paper | |
| Y. Zhang and T.Q. Su | 601 |
| Synergetic Performance of Retention Aids on Reconstituted Tobacco by Papermaking Process | |
| L.H. Zhao, X.L. Liao, B.H. He, Y.J. Yao and F.L. Wang | 605 |
| Research on the Impact of Surface Characteristic of Paper on Digital Printing Color Reproduction | |
| X.L. Huang | 610 |
| A Novel Colorimetric Sensor for Selective Sensing of Cu (II) in Aqueous Media | |
| W. Yu, X. Zhou, Y.A. Piao and X. Wu | 615 |
| Study on the Mechanism of Fired Bricks from Iron Tailings | |
| L.H. Liu, G.X. Du and J.H. Liao | 620 |
| The Direct Characterization for the Modified Filler by Oil Absorption Ratio | |
| X.Y. Liu, X.Y. Zhou, L.L. Qu, Q.C. Yao and H. Wang | 625 |
| Research and Simulation of MEMS Polycrystalline Silicon Resonance Mass Beam Sensor | |
| X. Shi, Y.L. Fan and Q.E. Li | 630 |

| | |
|--|-----|
| Polarized Infrared and Raman Spectra on Molecular Orientation of Phthalocyanine Derivatives in Nanolaminated Films | |
| H.N. Cui, S. Liu, L.F. Cao, S.Q. Xi, X.X. Li, H.X. Xiao and H.M. Guo | 634 |
| Study on UV-Curable Hybrid Adhesives with Adjustable Refractive Index | |
| X.P. Yang, X.H. Tang, W.B. Yang and J.W. Liu | 639 |
| Laser Composite Surfacing of a Magnesium Alloy with TiO₂ Nanoparticles | |
| M. Zhang, C.J. Chen and Q.X. Fei | 643 |
| Enhanced Thermal Properties of Cyanate Ester Resin by Epoxy-Functionalized POSS | |
| Z.P. Zhang, J.Z. Pei, C.Q. Fang and S.F. Chen | 647 |
| Study on the Property of Ba_{0.85}Ca_{0.15}Ti_{0.9}Zr_{0.1}O₃ Lead-Free Piezoelectric Ceramics Doped with Li₂CO₃ | |
| Z.W. Zhu, X.Y. Huang, H.T. Hua and Y. Li | 651 |
| Research on Corrosion and Monitoring Methods of Pressure Vessels in Sulfur-Containing Natural Gas Purification Plants | |
| J.F. Shang, G. Tian, Y.Z. Liu, G.Q. Xiao, D.C. Long and D.Z. Zeng | 655 |
| Numerical Study on the Interaction between Continuous Wave Laser and Polyimide | |
| H. Chen, W.H. Tang, X.W. Ran and Z.H. Xu | 660 |
| Broadband Micro-Wave Absorption Properties of Ni-P Coated Fe Nanoparticles by Electroless Plating Process | |
| G.M. Shi, W.M. Sun, D.W. Lu and S. Lian | 665 |
| Effect of Wettability on Tribological Properties of Porous UHMWPE | |
| G. Wu, S.K. Chen, H.L. Qin and C.H. Zhao | 670 |
| Non-UV Driven Self-Cleaning and Anti-Fogging Glasses Prepared by Ultrasonic Nebulization of TiO₂ Hydrosol | |
| J.J. Shi and E.L. Yang | 674 |
| Performance of Anti-Erosion and Anti-Oxidation of High Al Steels at 1373K | |
| H.C. Wang, Z.Y. Liao, S.J. Wang, Y. Zhou and Y.C. Dong | 679 |
| Design of a SOFC Single Cell Test Device | |
| H.H. Cheng, J.P. Pan, L. Zeng, J.Y. Zhang and W.G. Wang | 683 |
| Study on the Effect of Curing Condition on the Performance of FBC Ash | |
| T. Ding, Y.M. Song, A.Z. Cao, Y.X. Zha and J.H. Yin | 687 |
| Research of Thermal Shock Resistance of Si₃N₄ and SiC | |
| F. Zhang and Z.L. Huang | 691 |
| Microstructure Effects on Corrosion Behavior of Mg-Zn-Zr-Nd ZM6 Magnesium Alloy | |
| C.J. Chen, M. Zhang and Q.X. Fei | 695 |
| Wood-Polymer Composite Fabricated by Polymerization of Monomers within Wood Porous Structure | |
| X.Y. Dong, D.W. Gong, Z.B. Liu and Y.X. Liu | 699 |
| Synthesis and Characterization of Carbon/Bentonite Composite | |
| D.Y. Zhang, J. Wu, B.Y. Chen, H.M. Luo, K.J. Wang and H.X. Li | 703 |
| Electrical Degradation Induced Formations of Current Transients in Lead Zirconate Titanate | |
| D.Y. Zheng, J. Swingler, P. Weaver and Q.B. Liu | 707 |
| The Effect of Overheating Treatment on the Crystal Orientation of TbDyFe Alloy | |
| Y. Yu and J. Hu | 711 |
| Research on the Mechanical Properties of Cement Recycled Reclaimed Asphalt Pavement Mixture | |
| S.W. Du and C.F. Liu | 715 |
| XPS Spectra of Cu Thin Films Prepared by Ionized Cluster Beam Deposition | |
| B. Cao, T.R. Yang, G.P. Li, S.J. Cho and H. Kim | 720 |
| The Effect of Bath Temperature on the Adhesive Strength and Bioactivity of TiO₂ Nanotube Arrays | |
| X.F. Xiao, H.Z. Tang, K.G. Ouyang and R.F. Liu | 724 |
| Mechanical and Rheological Properties of Compatibilized LDPE/Wood Flour Composites | |
| W.H. Luo, Z.L. Wang and X.X. Liu | 729 |
| Performance Study of Nano-TiO₂ Modified Fabric | |
| X.M. Chen, J.J. Shi, H.S. Su, C.T. Lin and E.L. Yang | 733 |

| | |
|--|-----|
| Study on Wheat Straw Reinforced FGD Gypsum-Fly Ash Block J. Zhu and G.Z. Li | 737 |
| Study on the Properties of Physical and Chemical Foaming Concrete Q.J. Li, G.Z. Li and C.C. Jiang | 741 |
| Melting Temperature of Al_2O_3 under Pressure S. Zhang | 745 |
| Study on the Property of $\text{Bi}_2(\text{Mg}_{2/3}\text{Nb}_{1.1833}\text{Sn}_{0.15})\text{O}_7$ Dielectric Ceramics Doped with Li_2CO_3 H.T. Hua, X.Y. Huang, Z.W. Zhu, Y.Q. Hua and Y. Li | 749 |
| Study on Anti-Corrosion Performance of 20A & 316SS in Circulating Cooling Water with Different Concentration Ratio D.P. Zhong, K. Juan, F. Gao and H. Zheng | 753 |
| Influences of Hydrogenation on Tensile Properties of Ti40 Alloy X.M. Zhang, Y.Q. Zhao, P.S. Zhang, Y.N. Chen, F.Y. Zhang, X.D. Tian and Y. Li | 757 |
| Semi-Dry Desulfurization Ash Modification and Application in Autoclaved Brick Y.L. Fu, Y. Mu and F.Q. Zhao | 762 |
| Study on Leakage Rate of HDPE/Paraffin Composite for Phase Change Materials H.R. Liu, W.B. Yang, X.Y. Pu and K. Zhang | 766 |
| Influence of Different Modification on Structure and Mechanical Properties of Liquid Forging Aluminum Alloy H.B. Li, X.J. Su, C.J. Li, T.S. Li and H. Xu | 770 |
| Monte Carlo Simulation on the Matrix Failure Considering the Interfacial Debonding Energy Y.Y. Yuan, Q.J. Wu, D.P. Yang and Y.D. Ye | 774 |
| Research Progress on Binder of Activated Carbon Electrode Y.J. Zhang, J. Guo and T. Li | 780 |
| Influences of Processing Parameters on Dilution Ratio of Laser Cladding Layer during Laser Metal Deposition Shaping K. Zhang, X.M. Zhang and W.J. Liu | 785 |
| Effects of Processing Parameters on Powder Utilization Ratio during Laser Metal Deposition Shaping K. Zhang, X.M. Zhang and W.J. Liu | 790 |
| Study on Transportation of Cu(II) by Dispersion Supported Liquid Membrane System X.N. Wu and B.H. Yao | 795 |

Chapter 3: Mechanics Engineering and Applied Mechanics

| | |
|--|-----|
| The Design of Soccer Robot Based on the Mechanical Analysis with Energy Materials Y.B. Li and H.T. Liu | 803 |
| Finite Element Analysis of Large Space Shear Wall Structure L.J. Zhou, M.K. Shan, J.Z. He and Y.G. Fan | 807 |
| The Engine Connecting Rod Strength Evaluation and Fatigue Analysis Y.Q. Zheng, Z.L. Wang, H.J. Ke and B. Li | 812 |
| Vibration Suppression of Manipulator with Multiple-Mode Negative Q. Huang, D. Zhang, B. Li and Y.L. Wei | 816 |
| A Creative Anti-Collision Guardrail Structure Design for Heavy Vehicle Y.B. Zheng, Y.Q. Zheng, H.X. Yang and M. Yang | 821 |
| The Higher Order Asymptotic Crack-Tip Field for Reissner's Linear Functionally Graded Shell Y. Dai, L. Zhang, J.F. Liu, X. Chong and H.Q. Chen | 826 |
| The Analysis of Large Space Shear Wall Structure under Wind Load Force L.J. Zhou, M.K. Shan, J.Z. He and Y.G. Fan | 830 |
| An Investigation of Tooth Wear Diagnosis of Gear Based on Process Systems Modeling F.L. Wang and H. Xing | 834 |
| Cutting Test Research for Coated Carbide Cutting Tools X.Y. Hu, Y.H. Hu and X.J. Li | 839 |
| Summary of Vehicle Suspension Vibration Systems Control Technology Research J.F. Wang, C.X. Song and Z.X. Lei | 843 |

| | |
|---|-----|
| Vibration Modal Analysis and Structural Optimal Design of Car Rear-View Mirror Based on ANSYS | 848 |
| Z.P. Zhang, H.W. Liu, W.T. He and Y.H. Gao | |
| Material and Structure Design for Welding Joints in Railways Basing on Mechanical-Property Tests | 852 |
| Z.G. Li and Y. Su | |
| A New Kind of Semi-Active Suspension Magnetorheological Fluid Shock Absorber Damping Force Model | 856 |
| P. Sun, J.F. Wang and F. Feng | |
| Finite Element Analysis on an Independent Variable Diameter Pile under Marine Environment | 861 |
| L.P. Yi and J. Ji | |
| Analysis and Design of Concrete Cylindrical Shell Roof Structure | 866 |
| L.P. Yi and J. Ji | |
| Optimization of Cutting Parameters in Machining | 871 |
| Y.H. Liu | |
| Vehicle Brake-Pedal Arm Strength Analysis and Optimization Based on ABAQUS | 875 |
| Y.Q. Zheng, H.Y. Xu and B. Li | |
| Seismic Performance Analysis of a Hollow Tower Structure with Three Prismatic Section | 879 |
| L.P. Yi and J. Ji | |
| Study on the Intelligent Design System of Square Tube Aluminum Profile Extrusion Processes Based on VB | 884 |
| Z.P. Zhang, H.W. Liu and X.X. Li | |
| Development of a Centripetal Knuckle Bearing Performance Analysis and Parametric Drawing System Based on AutoCAD and VBA | 889 |
| H. Yao and Y. Cao | |
| 6-DOF Loading System with the Simulated Border | 894 |
| B. Li, Y.L. Wei, Y.Z. Wang and Q.B. Yan | |
| Static Simulation on Wind-Induced Buckling of Large LNG Tank | 899 |
| L.P. Yi and J. Ji | |
| Modal Analysis on Anchored Tank Considering Shell and Fluid Coupling | 903 |
| L.P. Yi and J. Ji | |
| DEM Simulations on the Heat Conduction in a Particle Mixer | 908 |
| Y.P. Xu, L.J. Cui, X.X. Ren, W. Ge and W.G. Lin | |
| Higher Order Crack-Tip Fields of Reissner's Linear Functionally Graded Materials Plates | 914 |
| Y. Dai, J.F. Liu, L. Zhang, X. Chong and H.Q. Chen | |
| GPU-Based Simulation on Particle Mixing in a Tote Blender | 918 |
| X.X. Ren, L.J. Cui and W. Ge | |

Chapter 4: Industrial Safety and Environment

| | |
|---|-----|
| Application of the Exergy Method to Environmental Impact Assessment: The Heat Exchange Process as a Case Study | 927 |
| P. Zhu | |
| Study and Application on Dust Comprehensive Prevention and Control Technology in Tunnel Excavation by Blasting | 931 |
| X.T. Zhang, Y. Bai, H.M. Zhou and H.L. Wang | |
| Based on Numerical Simulation to Investigate the Process of Gas Explosion Accident in Coal Mine | 936 |
| X.T. Zhang, X.L. Li, H.L. Wang and H.M. Zhou | |
| Modified Coal Fly Ashes Applied in Industrial Wastewater | 941 |
| Y.Z. Yu, J. Tan, A. Yang, Y.X. Zhou and L. Cheng | |
| Discussion on the Pollution Characteristics in Environmental Monitoring Laboratory and its Corresponding Control Countermeasures | 945 |
| X.M. Lv, X.M. Li and J.Y. Liu | |
| Evaluation of Heavy Metal Contamination in Limestone Soil from Suzhou Area, Anhui Province, China | 949 |
| S. Chen | |

| | |
|--|-----|
| Study on Irrigation and Drainage System Based on Water-Saving and Salinization Prevention J.R. Shi | 953 |
| Distribution and Implications of Heavy Metal in Jiangsu Coastal Sediments in China Z.X. Han, Z. Zhu, D.D. Wu and Y.R. Liu | 957 |
| Impact of Process Parameters on Oxygen-Bearing Low Concentration Coal Mine Methane Enrichment by Proportion Pressure Swing Adsorption Y.L. Li, Y.S. Liu, X. Yang, Y. Meng and C.Z. Zhang | 961 |

Chapter 5: Other Related Topics

| | |
|--|------|
| Study on the Magnetic Separation Experiment of Vanadium and Titanium Iron Concentrate Pellets L. Ma, S.L. Yang and Y.L. Li | 969 |
| Blue Phosphorescent Organic Light-Emitting Diodes Based on SFX2PO Host D.L. Qu, X.H. Wang, Z.Y. Liu, D.Y. Liu and C.L. Zang | 975 |
| An Evaluation Index of a Hydrocyclone for Softwood Pulp Fiber Fractionation X.J. Lu and L. Zhang | 979 |
| Effect of Microwave Treatment on the Extraction Speed and Quality of Camellia Seed Oil R.X. Liu, F. Yao, S.X. Wu and S.S. Huang | 984 |
| NURBS Fitting Optimization Based on Ant Colony Algorithm R.R. Xiao, J. Zhang and H.Q. Liu | 988 |
| Global Piecewise Fitting Method for Modal Parameter Identification by Orthogonal Polynomials Based on Dynamic Systems F.L. Wang, S.L. Duan and H.T. Gao | 993 |
| Flotation to Recover Copper Minerals from a Low-Grade Copper-Bearing Iron Ore S.Q. Liu, P. Li, S.M. Wen and D.W. Liu | 998 |
| Study and Application on Cutting Technology of Underground Drifting Blasting X.T. Zhang, P. Zou, H.M. Zhou and H.L. Wang | 1002 |
| Detection of Weld Seam Position Based on Infrared Image during High Power Fiber Laser Welding Y.Q. Chen, X.D. Gao, J.Y. Huang and Q. Wen | 1007 |
| Data Process for Reverse Engineering Technology H. Guo, Y.H. Hu and X.J. Li | 1012 |
| Analysis of Steel Bar Surface Defects Based on Machine Vision W.B. Li, C.H. Lu and J.C. Zhang | 1017 |
| The Development Mode of Mechanical and Electrical Products 3D Part Library J. Du and Y. Cao | 1021 |
| Research of Product Design Evaluation Based on Informational Engineering Models Q.B. Sun, K. Shang and M.Y. Lin | 1026 |
| Application of Low-Position Vacuum Deaerator in Steam Injection Boiler Supply Water Deaeration in Oil Fields F.Y. Wen, Q. Wang, X.B. Dong, H.L. Ma and G. Tian | 1032 |
| Study on Laser Ignition Characteristics of NEPE Propellant G.Q. Zhu, X. Chen, C.S. Zhou and Q.J. Wu | 1037 |
| Development of Standard Part Library Based on SolidWorks Z. Fang and L.N. Zhang | 1041 |
| State of the Art in Rapid Prototyping H. Wang and H.G. Zhang | 1046 |
| The Application Analysis of Crude Ricin in Terrorism X. Wang, P. Peng, S.M. Li, D.W. Jiang, G.H. Liu, J.Z. Wang and W. Li | 1051 |
| Applications of Neural Networks in the Hairiness of Ring Spinning Polyester/Cotton Yarn Prediction B. Zhao | 1055 |
| Tellurium Recovery from the Unique Tellurium Ores Y.F. Guo, N. Zhang, D.C. Li, F.M. Tang and T.L. Deng | 1060 |

| | |
|--|------|
| Detection of Seam Offset Based on Molten Pool Characteristics during High-Power Fiber Laser Welding | |
| J.B. Liang, X.D. Gao, D.Y. You, Z.S. Li and W.P. Ruan | 1064 |
| Development of a Mechanical Processing Material Database System | |
| Y. Cao, A.L. Zhou and Y. Bai | 1069 |
| A Machine Tool Fixture Library Management System Based on Assembly Knowledge Description | |
| Y. Cao, D. Yang and Y. Bai | 1073 |