

Table of Contents

Preface and Committee

Chapter 1: Materials for Environmental Protection and Energy Application

An Innovative Combination Process for PCBs Removing in Aged Landfill Leachate Y.H. Yuan, X.T. Xiao, S.C. Xia, B.H. Luo, X.Z. Chen and S.B. Xia	3
Immobilization of Phosphorus-Dissolving Bacteria on Sawdusts for Removing Phosphorus in Iron Ores F.M. Huang, S.C. Xia, X.T. Xiao, B.H. Luo, S.B. Xia and W.Q. Gong	7
Synthesis of Polyaniline/Poly(Vinyl Alcohol) Intercalated Graphite Oxide Composites F. Hu, Z.X. Xu, B.H. Dong, L. Wan, X.H. Zhang, G.T. Dai, W. Zhou and S.M. Wang	11
Studies on Extraction Technique of Chitin from the Pupa of Dictyoploca Japonica and Quality Test of Product B.S. Yang, H. Wang, J. Li and S. Liu	16
Comparative Evaluation of the Chemical Composition of Essential Oil from Twig, Leaf and Root of <i>Clerodendrum inerme</i> (L.) Gaertn D.H. Li, Z. Wang, Z.Y. Liang, X.B. Yang and J. Xu	22
Identification of Wear Coefficient in Archard Model Based on LuGre Friction Model X. Zeng, S.G. Zuo and X.D. Wu	28
Power Control Based on Pub/Sub for DFIG Wind Farm L.L. Qiao and Z.G. Tian	33
The Thermal and Rheological Properties of Starch Plasticized in Glycerol-Water Mixture P. Liu, C.Q. Gu and Q.Z. Zeng	38
Study on the Integrative Utilization of Cyanide Tailings of Polymetallic Sulfide Ore of Gold and Silver X.Q. Liu, Y. Fang, H. Jiang, Y. Xiao and L.G. Li	43
Gallium Nitride for Nuclear Batteries M. Lu, G. Wang and C.S. Yao	56
Removal of Zinc Ion from Aqueous Solution by Adsorption onto Solidifying Landfilled Sludge W.Q. Zhu, Z. Zhang and J.L. Shan	62
Application of PE Pipe in Underground Service Pipe X.W. Wang, S.N. Peng and X.M. Huang	67
Mechanism of Petroleum Hydrocarbon Contaminated Groundwater Remediated by Scoria W.J. Zhang, Y.L. Zhang and H.C. Jin	72
Effect of CuO Nanoparticles on the Cell Membrane Permeability of A549 and its Exclusion X.Y. Xie, L.L. Xu and D.M. Gao	77
Effect and Toxic Mechanism of Nanoparticles to Algae L.M. Wang, Y. Luo and J. Li	81
A Cyclic Softening Plastic Model of Carbon Steel 45 under Uniaxial Cyclic Straining Y. Luo	85
Coupling Law Research of Single Phase Stress Field / Seepage Field in Reservoir Deformation Medium J.X. Wu	92
Study on the P-Type Doping of AlGaIn/GaN Superlattice for Blue LED J.F. Chen	97
Corrosion Behaviors of B10 under the Combination Action of Sulfate-Reducing Bacteria and <i>V.Natriegens</i> C.X. Gu, X.H. Du, W. Li and G.J. Zhu	101
Charge Compensation and Enhanced Photoluminescence of $\text{Sr}_2\text{SiO}_4\text{:Eu}^{3+}$, Li^+ Phosphor H.Y. Chen, S.J. Chang, M.H. Weng and R.Y. Yang	106

Numerical Simulation of Natural and Super-Critical Carbonation on Concrete Porous Brick	112
X.X. Zha and S.S. Cheng	
Effects of Annealing Temperature of Indium Tin Oxide Thin Films Prepared onto Glass by Sol-Gel Spin Coating Method	116
Y.M. Peng, Y.K. Su, C.J. Chu, R.Y. Yang and R.M. Huang	
Experimental Study on Matching Characteristics of Wave and Flame in Detonation	124
P.G. Zhang, X.M. He and Q. Wang	
Fabrication of Water Treatment Membrane Using Templating Method - A Critical Review	130
S.Q. Chen, J. Chen and R. Du	
Research in Recycling Technology of Fiber Reinforced Polymers for Reduction of Environmental Load: Optimum Decomposition Conditions of Carbon Fiber Reinforced Polymers in the Purpose of Fiber Reuse	142
J. Shi, K. Kemmochi and L.M. Bao	
Study on Response Characteristics of Switching Zirconia Oxygen Sensor for Air-Fuel Ratio Control	150
D.L. Wang, M. Wan and H.Y. Pan	
Thermodynamic Study on SiHCl_3 Hydrogen Reduction System in Siemens Process	156
X.H. Yu, E. He, Y.Q. Hou and G. Xie	
The Effects of Cu Dopant on the Microstructure and Non-Ohmic Electrical Properties of ZnO Varistors	160
J.W. Fan, X.P. Li, Z.G. Zhang, Z.Q. Jiao, X.Y. Liu, W.J. Zhang, P. Poosimma and R. Freer	
Numerical Design for the Photonic Bandgap of One-Dimensional Photonic Crystals	166
T.T. Gao and J.H. Yuan	
Commercial Activated Carbon Modified with Sulfuric Acid: A Potential Permeable Reactive Barrier Material for <i>In Situ</i> Remediation of Cr(VI) from Groundwater	172
J.P. Liu, H.Z. Zhang and X.M. Liu	
Hydrothermal Synthesis and Gas Sensing Properties of $\alpha\text{-Fe}_2\text{O}_3$ Hollow Microspheres and Nanorods	177
X.L. Ye, G.H. Liu, Y.Z. Song, G.L. Han, Q.H. Lu, B. Liu, Y.F. Wang and G.G. Li	
1.6 MeV Electron Irradiation on the Characteristics of CdTe Thin Film Solar Cells	181
M.Y. Fang, J.Q. Zhang, L.H. Feng, L.L. Wu, W. Li, B. Li, G.G. Zeng and W.W. Wang	
Utilizing Photoreduction Process to Anchor Metal on TiO_2 for Acid-Odors Removal	188
Y.C. Lin, C.L. Chang and C.W. Mei	
Removal of Dye from Textile Dyeing Wastewater by Using Oxidized Multiwalled Carbon Nanotubes	193
W.Y. Shi, J.Z. Gu, W.J. Wu, Y.F. Sun, R.Y. Guo, G. Xu, G.Y. Hu, J.Q. Lei and M.H. Wu	
Thermal and Optical Properties of Semi-Transparent Amorphous Silicon BIPV for Building Application	199
H.J. Chen, C.M. Chiang, R.S. Horng and S.K. Lee	
A Practical Approach for Producing Hydrophobic and Elastic Aerogels by Ambient Pressure Drying	205
J.Y. Cai, B. Xu, L.J. Wang, Y. Cao, N. Finn and Z.S. Cai	
Analysis of the Market Position of Natural Gas in China Based on Energy Production and Consumption Elasticity	212
C.M. Zhang and S.N. Peng	
Photosensitization of Nitrogen Doped TiO_2 Nanoparticles with Na-Chlorophyllin Copper for Degradation of Methyl Orange	216
J.Y. Gong, C.Z. Yang, W.H. Pu and J.D. Zhang	
Reaction Mechanism and Impact Factors Analysis of Transesterification Biodiesel Production	222
X.Y. Li, J.C. Jiang, K. Wang, K. Li and Y.W. Gao	
Experimental Study on Wet Desulphurization System of Large-Scale Thermal Power Plant with Ammonia Soda Solid Waste (White Mud)	227
R.K. Hong, W. Gao, P.F. Hu, T. Yang, S.S. Zhang, Y.J. Liao and Y. Chen	
Inhibitory Effect Study of Coptis Extract on Algae	235
Z.L. Xu, R.H. Liao, Q.Y. Meng and L.X. Zhao	
Research on Photolysis of Steroid Estrogens in Aquatic System	241
Y.Q. He, G. Xu, L. Tang, D.Y. Qian, L.T. Ren, G.Y. Hu, J.Q. Lei and M.H. Wu	

Study on Mercury Adsorption Performance of Modified Fly Ash T.Y. Zhu, J.Y. Kuang, W.Q. Xu, M. Ye, Y.Y. Guo and W. Liu	246
Hydrogen Production through CO₂ Absorption Enhanced Diesel Steam Reforming for PEMFC Systems W.L. Mi, Q.Q. Su, Q. Cheng and J. Gong	250
Evaluation on the Property of Methanol Oxidation by Phosphomolybdic Acid W.L. Mi, D.M. Jia, X.F. Fang and K.Q. Wu	256
COMSOL Simulations for Flow Channels of Low-Temperature Fuel Cell C.M. Chung, C.H. Lin and C.W. Lin	261
The Application of Green Building Materials to Sustainable Building for Environmental Protection in Taiwan T.T. Hsieh, C.M. Chiang, M.C. Ho and K.P. Lai	267
Using Biological Process to Destroy Lignocellulosic Structure for Energy Conversion P.M. Li, C.W. Lee and J.S. Lin	273
Using Agricultural Wastes as Compounded Medium for Fungal Mycelia P.M. Li, C.W. Lee and W.T. Chen	278
Recycling Lime Sludge from CPDC An-Shun Site as Coarse Aggregates through Cold-Bonding Technique C.T. Tsai, C.C. Chang, L.S. Li and T.C. Kung	283
Influences of the Air Layer with Irregular Shape to the Absorbing Constructions K.H. Liu, R.P. Lai and C.W. Chou	289
Tensile and Fatigue Properties of Ultrathin Copper Films and their Temperature Dependence Q.N. Guo, S.E. Yang, M.X. Wang and Y.P. Huo	296
Experimental Study on Combined Process of EOW and MBR for Treatment of UDMH Wastewater B.L. Xia, L. Wang and Y. Liu	303
Electron Microscopic Studies on Phosphate Binding Processes in the Presence of Iron N.D. Subasinghe	307
Research on Discriminating Environmental Quality Master Factors of Tianjin Sea Area J.F. Bai and H. Yu	312
Compressive Strength of Binary and Ternary Blended Cement Mortars Containing Fly Ash and Silica Fume under Autoclaved Curing W. Wongkeo, P. Thongsanitgarn and A. Chaipanich	316
Effect of Limestone Powders on Compressive Strength and Setting Time of Portland-Limestone Cement Pastes P. Thongsanitgarn, W. Wongkeo, S. Sinthupinyo and A. Chaipanich	322
A Study on Hydrocyclone with Rotating Blades on Overflow Pipe Wall Y.S. Lai, C.W. Fu, C.Y. Pan and R.M. Wu	327
Effects of Hg²⁺ on Microbial Community Structures of Aerobic Activated Sludge N. Dai, J.S. Wang, Y.G. Teng and J. Su	333
Migration Patterns of Heavy Metals in Soil in Wastewater Irrigation Area in the Suburb of Eastern Inner Mongolia R.C. Hu and L.B. Sun	340

Chapter 2: Materials for Biomedical Engineering Application

The Involvement of Nitric Oxide and Hydrogen Peroxide in eATP-Inhibited Pollen Germination and Tube Growth of <i>Paulownia tomentosa</i> <i>In Vitro</i> Y.H. Zhang and X.P. She	347
Effects of Long-Term Elevated CO₂ on Rhizosphere and Bulk Soil Bacterial Community Structure in <i>Pinus sylvestris</i> Seedlings Fields X. Jia and C.J. Zhou	351
Distinguishing Bacteriolytic from Bacteriostatic Activity of an Antibiotic Agent by Real-Time Quantitative PCR Z.P. Wang	357
Study on Biological Fixation of High-Concentration CO₂ Using <i>Chlorella pyrenoidosa</i> Q.P. Yang, X.L. Wang, X.Y. Shi, K.Q. Li and L.H. Yue	361

Characterization of Protein Isolates from Defatted Chinese Hickory (<i>Carya Cathayensis</i> Sarg) Kernels	
Z.P. He, L.C. Mao, C.S. Zhou and F.H. Wu	368
Thiacalix[4]Arenetetrasulfonate Applied to Remediation of Soils Contaminated with Lead	
D. Zhao, T.H. Sun, X.J. Hu and X.M. Hu	374
Anti-Tumor Immunotherapy Elicited by Cross-Link Peptide Vaccine Alpha-Fetoprotein and Heat Shock Protein 70 Complex	
H.P. Lin, X.P. Wang and Q.X. Wang	378
Effect of Endophytic Fungi on the Growth Situation in Cell Suspension Cultures of <i>Acer Ginnala Maxim</i>	
F.H. Qi, Y.G. Zhan, F.S. Zeng and T.Z. Jing	384
Preparation and Characterization of Egg Yolk Antibody against <i>Staphylococcus Aureus</i>	
W. Peng, Y.M. Sun, D. Liu and S.Q. Zhao	391
A Kinetic Model for Astaxanthin Fermentation by <i>Xanthophyllomyces Dendrorhous</i> Zjut46	
Z.C. Hu, G.F. Jiang and Y.G. Zheng	397
Adjust the Reaction Conditions of Enzyme Catalysis to Product Fructooligosaccharides Containing Different Components Proportions	
J.C. Ding and X.L. Lv	403
Developmental Changes of Growth Hormone Mrna Abundance in Pituitary Tissue of Jinhua and Landrace Gilts	
Z.G. Miao, G.W. Li, S.Z. Wang, X.Y. Chang, H.B. Xie and C.Z. Liu	412
Comparison of Growth Hormone Pulsatile Secretion and Serum Metabolites in Growing Taihu and Landrace Pigs	
G.W. Li, Z.G. Miao, S.Z. Wang, C.Z. Liu and H.T. Zhang	417
Emulsifier's Influence on the Quality of Frozen Dough	
Y.R. Bao, X.L. Wang and S.C. Ren	423
Determination and Microbial Degradation of Lambda-Cyhalothrin	
L.L. Zheng, H.J. Mou and J. Li	430
Molecular Cloning and Tissue-Specific Expression of the Heart-Type Fatty Acid-Binding Protein (H-FABP)	
C.L. Zheng, G.Y. Xu and D.H. Wang	438
Enzymatic Synthesis of both Enantiomers of Ethyl 4-Cyano-3-Hydroxybutanoate	
J.Z. Jin and J. Zhang	448
Highly Enantioselective Hydrolysis of Racemic Isopropyl Tert-Leucinate by Newly Discovered <i>Bacillus Lincheniformis</i> Jx010 for Synthesis of L-Tert-Butyl Leucine	
J.Z. Jin and J. Zhang	453
Antioxidant Activities of Extracts from <i>Pholiota Nameko</i>	
H.F. Ji, L.W. Zhang, H.Y. Zhang, G.L. Li and M.D. Yang	457
Antioxidant Properties of Hot Water Extracts from <i>Armillaria Mellea</i> and <i>Hohenbuehelia Serotina</i>	
H.F. Ji, L.W. Zhang, H.Y. Zhang, H.J. Nan, D.G. Yang and M.D. Yang	463
Ionizing Irradiation Property of L(+)-Alpha-Phenylglycine in Acid Aqueous Solution	
W.Y. Shi, J.Z. Gu, Z. Jiao, W.J. Wu, G. Xu, M.H. Wu, J.Q. Lei and G.Y. Hu	469
Dynamic Investigation of Sensitivity and Action Mechanism of Antitumor Drug	
X. Liu, Y. Luan, A.R. Guo, H.H. Deng and Z.H. Lu	476
SPSS for Water Pollution Contribution of Tonghui River in Beijing Based on Principal Component Analysis	
L.P. Zhang, J. Pang, L. Ke, Y.Y. Shi, M.Q. Yang, Q.Y. Hu and Y.J. Guo	483
An Amperometric Immunosensor for α-Fetoprotein Based on Antibody Coated Nano ZrO_2-Au-Poly Lysine Composite Membrane Modified Electrode	
Y.Z. Wu, F.T. Hu, N. Gan, J.G. Hou, T.H. Li, Y.T. Cao and L. Zheng	490
Effects of Temperature on Oxidative Stress Biomarkers in Juvenile Chinese Sturgeon (<i>Acipenser Sinensis</i>) under Laboratory Conditions	
G.P. Feng, P. Zhuang, L.Z. Zhang, M. Duan and J.Y. Liu	497
Anti-Melanogenic Activities of Collagen Peptides from Jellyfish (<i>Stomolophus meleagris</i>)	
Y.L. Zhuang and L.P. Sun	505
The Study of Biodegradation of Butyl Benzyl Phthalate by <i>Phanerochaete Chrysosporium</i>	
Y.N. Yang, W. Fang, X.J. Hu, N. Ren and D.W. Liang	513

Production and Characterization of Egg Yolk Antibodies (Igy) against Two Specific Spoilage Organisms (SSO) in Aquatic Products Y.F. Xu, H. Lin, J.X. Sui and L.M. Cao	519
Growth Inhibition and Cell Cycle Arrest of Kappa-Selenocarrageenan and Paclitaxel on HepG2 Cells N. Ling	530
Growth Inhibition of Kappa-Selenocarrageenan Combined with Paclitaxel on Human Breast Carcinoma MCF-7 Cells N. Ling, C.Y. Chen, Y.Y. Xu and Y.B. Ji	535
Isolation of a Field Marek's Disease Virus with Acute Oncogenicity from Tibetan Chickens in China and Sequence Analysis of Oncogenic Genes M.X. Tian, R. Deng, Y. Zhao, M. Li, S.J. Cao, X.T. Wen and Y. Huang	538
The Expression and Characterization of Gp85 Gene of Subgroup J Avian Leukosis Virus Associated with Hemangioma M. Shi, Y. Lin, Y. Zhao, M.P. Guo, L.M. Sun, M.X. Tian, S.J. Cao, X.T. Wen and Y. Huang	545
Strain Improvement of Acinetobacter Calcoaceticus D29 for Enhanced Lipase Production by Screening Sodium Citrate Resistant Mutants S.J. Zhong, W. Qi and H.K. Wang	551
Inulin in the Application of Bio-Energy C.H. Zhao	556
Optimizing the Medium for High Yield Production of Antitumor Exopolysaccharide by Medicinal Mushroom P.S. Yan, G.Z. Zhu, L.X. Cao and J. Dong	560
Effects of Nutritional Factors on Production of Bacterial Bioactive Metabolites against Aflatoxin Biosynthesis Z. Wang, P.S. Yan, L.X. Cao, Q.W. Li and F. Lin	564
A Simple, Sensitive SSCP Method for Detecting HVR1 Quasi-Species of Hepatitis C Virus T.L. Jia, Y. Feng, L. Gao, L. Liu, D.Q. Wei, H. Yang, X.S. Xia, J.J. Dai, X.M. Sun and C.X. Lu	568
Effects of Methamidophos on Ascidian (<i>Styela Clava</i>) Detoxifying Enzymes A.L. Jiang, Z. Yu and C.H. Wang	576
Bioconcentration and Elimination Kinetics of Copper with Different Tissues of the Ascidian <i>Styela Clava</i> A.L. Jiang, Z. Yu and C.H. Wang	583
Morphological Observation of the Cashmere Goat Fetal Fibroblasts after mTOR Kinase Inhibition with Combination of Fluorescent Dyes and Confocal Cell Imaging Y. Liang, X.J. Wang, S.Y. Li, Cheberi, Z.G. Wang and D.J. Liu	590
Research on the Characteristics and Culture Conditions of <i>Saccharomyces boulardii</i> L.P. Du, R.X. Hao, D.G. Xiao, L.L. Guo and W.D. Gai	594
Optimization of L-Arabinose and Single-Cell Protein Production from Corn Husks Hydrolysate L.P. Du, W.D. Gai, D.G. Xiao, L. Liu and R.X. Hao	599
Study on Lipoprotein Lipase Production by <i>Candida rugosa</i> X.X. Zhao and Y.G. He	604
Effect of Pyruvate and Lactic Acid on the Development of Porcine Embryos B. Fu, D. Liu, H. Ma, Z.Q. Li, L. Wang and J. Bai	611
PCR-Based Detection of Traces of Potentially Allergenic Soybean (<i>Glycine max</i>) in Food Matrices B.P. Wang, Z.X. Li, R. Pawar, X.F. Wang and H. Lin	618
Tellurium Extraction from the Unique Independent Tellurium Ores in China by Bioleaching Y.F. Guo, T.L. Deng, N. Zhang and M.X. Liao	625
Association of Prkag3 Gene Polymorphisms with Meat Quality Traits in Chinese Meat-Type Quality Chicken Populations H.D. Yin, X.L. Zhao, Z.C. Zhang, N.N. Zhou and Q. Zhu	631
Surface Modification of Poly(Vinylidene Fluoride) Microporous Membrane by Ferric Hydroxide Sol-Gel Y.J. Xie, W.P. Hu, Z. Wang and S. Xu	637
Impacts of Sodium Citrate on Metabolic Flux Distributions of L-Valine Fermentation Q.Y. Xu, L. Ma, X.X. Xie, N. Chen and J. Wang	643

Effects of Daidzein or Genistein on Proliferation and Antioxidation of Mammary Epithelial Cell of Dairy Cow <i>In Vitro</i>	
C.L. Liu, Z.Q. Li and X.J. Feng	649
Effect of Levels of Yucca Schidigera Extract on Ruminal Fermentation Parameters, Digestibility of Nutrients and Growth Performance in Sheep	
C.L. Liu and Z.Q. Li	655
Statics Analysis of the Mechanical Model of Nucleosome	
Y. Xue, D.W. Weng and G.M. Gong	661
Visual Analysis on the Research of Oil Crop	
R.Y. Zhao, R. Chen, Z.H. Dang, Z. Dang and G. Zhang	668
Visual Analysis of International Oil Flax Research	
R.Y. Zhao, M. Wang, Z.H. Dang, Z. Dang and G. Zhang	673
Cloning and Characterization of Chicken CRBP2 Gene and Comparison with other Vertebrates	
L.H. Xiao, F.L. Kong, H.D. Yin, X.L. Zhao and Q. Zhu	678
Genetic Differentiation and Systematic Evolution of Sichuan Rhesus Macaques	
D.Y. Li, Y.F. Yao, A.C. Cheng, H.L. Xu, Q.Y. Ni, W. Zeng, F.J. Bi, Z.X. Yang and X.Y. Chen	683
Simple Sequence Repeat (SSR) Polymorphisms and Population Genetics in Sichuan Wild Rhesus Macaques	
D.Y. Li, Y.F. Yao, X.F. Huang, A.C. Cheng, H.L. Xu, Q.Y. Ni, Q. Zhu, W. Zeng, F.J. Bi, Z.X. Yang and X.Y. Chen	690
Bioactive Peptides from Low Denatured Peanut Dregs: Production and Antihypertensive Activity	
Y.H. Zhang, L. Ma and Q. Wang	698
Research on the Soil Pollution and Control of Pb, Cd and Cr in Taiyuan Suburb	
G.Y. Yang and T. Wang	707
The Function of Chloroplast GST of Puccinellia Tenuiflora Seedling Leaves in Resistance to Na₂CO₃ Stress	
G.R. Sun, X.L. Wu, G. Chen, J.B. Wang, W.Z. Cao, Q. Du and B. Zhang	712
Analysis of Codon Usage in Herpesvirus Glycoprotein B (gB) Gene	
L. Jiang, A.C. Cheng, M.S. Wang, D.K. Zhu and R.Y. Jia	721
Identification of Translationally Optimal Codons and Suitable Expression Host of DPV gB Gene	
L. Jiang, A.C. Cheng, M.S. Wang, D.K. Zhu and R.Y. Jia	729
Inhibitory Effects of 30 Kinds of Chinese Herbal Medicine on Fungi in Food	
S.C. Ren, Y.C. Fan and C.C. Li	737
Phospholipase D-Mediated Transphosphatidylation in Subcritical 1, 1, 1, 2-Tetrafluoroethane	
H. Zhang, G. Yu, Y.M. Wang and C.H. Xue	743
Studies on Energy Transfer between Phycobiliproteins and Thylakoid Complex	
Y. Li	748
Expression, Purification and Characterization of the Recombinant Hirudin Variant iii in the Bacillus Subtilis	
H.Y. Chen, X.H. Qi, X. Geng, Q.G. Xu, J. Wang and Z.R. Wu	753
Determination of Erythromycin and Haloperidol in Human Urine by Capillary Electrophoresis Online Coupled with Electrochemiluminescence Detection	
B.Y. Deng, Y.H. Kang, L.Q. Li and A.H. Shi	764
Ultrasonic-Assisted Dialysis Coupled with CE-ICP-OES for Determination of Calcium Species in the Dialysate of Human Blood	
B.Y. Deng, X.S. Xu, Y.Z. Wang and P.C. Zhu	769
A Novel Strain Pseudomonas Aeruginosa CS-2 Producing an Organic Solvent-Tolerant Lipase	
R. Peng, J.P. Lin and D.Z. Wei	774
Induction of Metallothionein by Roxarsone in Earthworm Eisenia Andrei	
Y.S. Li, X.H. Wang, J.P. Qiu, J. Sun and J.B. Jiang	781

Chapter 3: Biology-Related Materials Research in Environmental Protection

Treatment Effect of Multilayer Vermifiltration on Living Wastewater Y.S. Li, X.H. Wang, Y.Q. Dai, J.P. Qiu, P. Robin, D. Cluzeau and P. Morand	789
Evaluation of Oxidative Stress Responses and Neurotoxicity Potential of Methamidophos in <i>Mytilus Edulis</i> Z. Yu and A.L. Jiang	795
Effect of the Combined Probiotics on Inhibiting Pathogenic <i>Escherichia coli</i> Proliferation Q.Q. Yin, G.G. Fan, J. Chang, R.Y. Zuo and Q.H. Zheng	802
Effect of Steam Explosion Pretreatment and Microbial Fermentation on Degradation of Corn Straw J. Chang, Q.Q. Yin, T.B. Ren, A.D. Song, R.Y. Zuo and H.W. Guo	809
Role of ASC-GSH Metabolism in <i>Trifolium Repens</i> L Y.B. Zhang	815
Cloning and Characterization of Goose PPARγ Gene Comparison with other Vertebrates H.L. Wu, F.L. Kong, M.H. Qiu, B. Zhou, J. Luo, H.Y. Wang, Y. Liu, Q. Zhu and D.Q. He	820
Application of Two Modeling Methods in Optimization for Adenosine Extraction from Mycelium of <i>Cordyceps Militaris</i> L.N. Du, J. Song, L.J. Meng, J.H. Lu, Q.F. Meng and L.R. Teng	826
Optimization of the Sporogenous Medium of <i>Irpex Lacteus</i> Using Response Surface Methodology N. Zhang, Q.Y. Chen, R.C. Pan, X.F. Yao, Y.F. Wang, J.H. Lu and L.R. Teng	832
Photocatalytic Inactivation of the Bacteria <i>Escherichia Coli</i> by CuCr₂O₄/TiO₂ Composite Photocatalysts under Simulated Solar Light Irradiation L. Zhang, J.H. Yan, K.L. Huang and H. Chen	838
Lab Studies of MEOR Strains Optimization for High Salinity Reservoirs J.C. Wu, X.M. Lv, Z.J. Ou and D.Y. Yin	844
Determination of Eight Major Bioactive Components in the Traditional Chinese Medicinal Preparation Xiaochengqi Decoction by High Performance Liquid Chromatography K. Li, Y.Y. Wang and Y.G. Bi	849
Application of QuEChERS Method in Determining Imidaclothiz Residue in Soil and Citrus by Ultra-Performance Liquid Chromatography Tandem Mass Spectrometry L. Qin, F.G. Liu, H.M. Wu and G.N. Zhu	855
The Products of Nitrite Reacted with L-Ascorbic Acid T. Li, G.J. Guo, M. Hu and M.J. Yao	862
Construction and Vaccine Studies on a Pseudorabies Virus with Deletions in Glycoprotein I and Glycoprotein E Genes S.L. Zhang, M.L. Jin and H.C. Chen	868
Chemical Modification of Soy Flour Protein and its Properties Y.Z. Xu, C.P. Wang, F.X. Chu, C.R. Frihart, L.F. Lorenz and N.M. Stark	875
Preparation and Characterization of Nano-β-Tricalcium Phosphate/Silk Fibroin Scaffold for Tissue Engineering Applications J. Ou, Y.M. Jiang and Z.H. Zhang	882
Toxicity of Fe⁰ Nanoparticles on the Denitrifying Bacteria-<i>Alcaligenes Eutrophus</i> M.Y. Dong, X. Wang, F. Huang, Z.H. Jin and T.L. Li	889
Investigation and Exploitation on the Experiment Platform for the Medical Ni-Ti Memory Alloy Clutching Internal Fixator G.P. Chen, Y. Yang, Y.W. Zou and X.J. Huang	895
The Security Analysis of Trace Elements Accumulated in Fish Tissues with the Aquatic Eco-Environment from Fresh and Marine Waters J.Z. He, K. Yang and P.L. Sun	900
Characteristics of Lysozyme Adsorption on Magnetic Fe₃O₄/Chitosan Nanoparticles at Fixed pH Y.L. Lin, R. Wang, W. Ma and Z.H. Cheng	909
Cyanobacteria Diversity in Eutrophic Lake of Yunnan, China L. Liu, A. Xiang, Y. Feng, D.Q. Wei, H. Yang and X.S. Xia	914

Surface Characteristic of Pyrrhotite Bio-Oxidized by Acidithiobacillus Ferrooxidans J. Lei	920
NR2B-siRNA Mediated by Hydroxyapatite Nanoparticles Relieves for Malin-Induced Pain of Mice Y.H. Gu, X.B. Yan, D. Huang, R. Han and L.X. Wu	926
Extraction of Pectin from Pomelo Peel Y.X. Ma, B.G. Liu, L.B. Hu and M.Y. Wang	933
Role of Ethylene in the Biosynthesis of Fatty Acid-Derived Volatiles in Tomato Fruits Y.H. Xie, H.Y. Gao, Y.B. Luo, H.X. Zhang, X.N. Chen and B.Z. Zhu	937
Morphogenesis-Associated/Dissociated Production of Epothilone in Wild Sorangium Cellulosum Strains X.L. Liu, L. Zhao, W. Hu and Y.Z. Li	951
Analysis of the Extraction Effects of Epothilones with Different Organic Solvents L. Zhao, J.L. Dai, J.Y. Wang, Y.W. Li and X.L. Liu	958
Fuel Ethanol Production from Wet Oxidised Corn Stover by <i>S. Cerevisiae</i> Z. Qiang and A.B. Thomsen	963
Characteristics and Stability of Soil Aggregates in Tea Plantation Z.C. Zheng, T.X. Li and S.Q. He	968
Cr Bioaccumulation and its Effects on Nutrient Elements Uptake and Oxidative Response in <i>Corbicula Fluminea</i> Exposed to Hexavalent Chromium P.F. Wang, S.H. Zhang, C. Wang and N.N. Han	975
Evaluation of Genetic Diversity in Castor (<i>Ricinus communis L.</i>) using RAPD Markes F.J. Li, C.L. Wang, D. He, Y.Q. Liu, M.H. Chen, Y.R. Wang, F.J. Li, Z.H. Yang and G. Chen	981
Study on the Application of Bacillus Coagulans to Purify Aquaculture Water J. Wang and L. Zhao	988
Cloning and Recombinant Expression of Chitosanase Gene from Bacillus Sp. S-1 Y.Y. Sun, S.J. Wang and J.Q. Zhang	994
Differences in Several Important Proteins Contents between Raw Milk and Reconstituted Milk R.F. Guan, D.H. Liu, J.X. Jiang, C. Rui, P.P. Liu and X.Q. Ye	1000
Protective Effects of Hyperoside from Hawthorn against Endothelia Cell Apoptosis Induced by H₂O₂ Y.K. Ge and X.X. Zheng	1007
Characteristics of Enzymatic Hydrolysis of the Wheat Gluten Proteins Treated by Ultrasound Wave H.L. Jin, J.S. Wang and K. Bian	1015
Effects of Yeast Extract on Poly-ε-Lysine Production in Batch Culture of Streptomyces Albulus X. Chen, Z. Wang, Y.Z. Wang, F.T. Jiang, D.S. Li and J.H. Wang	1023
The Research on the Improvement of Flour Fermented Products by Benzoyl Peroxide Y.Y. Guo, M.G. Lin, H. Li, H.B. Liang, B.X. Liu and Z.D. Liu	1029
Proteomics Study on Cross-Linking Reaction of Formaldehyde and HSA B. Li, D.Y. Hu, X.L. Xin, R. Lan and Y.L. Deng	1035
Comparison of the Amino Acid and Protein Content between Peanut Meal and Fermented Peanut Meal D.M. Liu, S.S. Tang, Y. Shi, S.J. Yu and H. Wu	1042
Crystal Structure Analysis and Antinociceptive Property of Lappaconitine Hydrochloride W.X. Sun, T.G. Dong and C.M. Ding	1049
Expression and Inhibition Analysis of Recombinant Protease Inhibitor of Solanum Americanum in E. Coli Z.Y. Wang, J. Li, M.Z. Li and T.C. Zhang	1053
Preparation of Insulin-Like Growth Factor-1 from Bovine Colostrums J.X. Mo, B.H. Zhang and X.J. Gao	1059
The Effect of Bovine Colostrums IGF-I on Cultured Human Mammary Epithelial Cells Line HBL-100 J.X. Mo, B.H. Zhang and X.J. Gao	1064
Progesterone Hydroxylation with Colletotrichum Lini AS3. 4486 Y.J. Shen, H. Sun, Y.W. Fu, C.Y. Xu and M. Wang	1070

A New Fluororeceptor for Selective Detection of Zwitterionic Arginine X. Zhou and X. Wu	1074
Potential Role of Calcium Lon in Mediating the Response of Escherichia Coli to Audible Sound Stimulation S.B. Gu, K.W. Li, Y. Wu, S.C. Li and G.W. Lu	1079
Effects of Potassium Fertilizer on Diurnal Change of Photosynthesis in Stevia Rebaudiana Bertoni L. Ma, G.X. Ren and Y. Shi	1087
Comparison of Chemical Composition and Antimicrobial Activities of the Essential Oil of Taxus Media and Taxus Chinensis Var. Mairei Leaves J. Zhang, K. Yuan and Y.C. Jin	1092
Investigation of Active Components and Antioxidant Activities in Peel and Pulp Extracts of Citrus Reticulata Blanco cv. Suavissima Fruit X.T. Chen, D.Q. Jiang, F.F. Chen and K. Yuan	1098
Contents of the Total Flavonoids and the Total Phenols and Antioxidant Activities in the Leaf from Different Species of Phyllostachys C.J. Hu, D.H. Xu, H.L. Chen and K. Yuan	1103
Water Quality and Growth Simulation of Channel Catfish, Ictalurus Punctatus, in a Recirculating Aquaculture System Combined with Subsurface Flow Wetland T. Yu, F. Zhong, D. Xu, Q.H. Zhou, W. Liang, F. He and Z.B. Wu	1109
Effects of Berberine on the Photosynthetic Pigments Compositions and Ultrastructure of Cyanobacterium Microcystis Aeruginosa X.D. Bi, S.L. Zhang, B. Zhang, W. Dai and K.Z. Xing	1117
Interaction of Dietary Zinc and Vitamin A Influences the Zinc Deposition and some Enzymes' Activity in Broilers X.M. Guan, F.L. Bian, W.J. Zhu, B. Wang and C.S. Zhang	1126
Differential Constitutive Equation of Elytra Cuticle by Nanoindentation J.Y. Sun, Y.M. Wang, D.H. Chen, J. Tong and C.X. Pan	1133
Early-Phase Detection of Heat Shock Proteins (Hsp27 and Hsp40) in Extruded Earthworm Tissue after Dermal Exposure to Herbicides C.E. Liu, C.Q. Duan, F. Liu and X. Peng	1140
Biomass Allocation and Heavy Metal Distribution in Different Varieties of Maize (Zea Mays L.) under Lead and Cadmium Applications D.G. Fu, C.J. Song, C.Q. Duan, C.T. Liu and L.N. Liu	1152
The Mechanical Strength of Rabbit Femurs Fixed with Calcium Phosphate Cement after Fracture J. Chen, X.N. Li, S.E. Tan and W.Y. Chen	1160
Volatile Molecules from Acidified Mung Bean Soup Led to Stable Dopamine Level in Drosophila Brain under Starvation Stress L.B. Hu, B.G. Liu, Y. Zhang and M.Y. Wang	1163
Effect of Laminarin on Aspergillus Flavus Growth and Aflatoxin Production L.B. Hu, H.B. Li, J.L. Sun and J. Zeng	1168
Screening of Lipid High Producing Mutant from Rhodotorula Glutinis by Low Ion Implantation and Study on Lipid Extration Technique S.C. Li, H.X. Liu, S.B. Gu, M. Wang, Z.Y. Zhu and D.D. Wang	1172
The Coupling Bioreactor for Domestic Wastewater Reclamation and Sludge Reduction C.R. Wang and J. Li	1182
Chemical Constituents and Bioactivity of Chloranthus Multistachys Y.M. Luo, X.Y. Yin and M.Y. Xie	1189
Studies on Chemotypes of Cinnamomum Camphora Y.M. Luo, S.R. Li and X.Y. Yin	1193
Antioxidant Research of Persimmon Extraction in Ionizing Radiatio Mice X.N. Chen, W.S. Hu, Y.H. Xie, Y.H. Li, L.B. Guo and W.B. Jin	1198
A New Immunosensor for Serum Myeloperoxidase Based on Self-Assembly of Multi-Walled Carbon Nanotubes/Thionine/Gold Nanoparticles-Chitosan Q.Z. Diao, Y. Li, M. Zhou and G.M. Xie	1207
Isolation and Identification of the Main Pathogenic Fungi from Postharvest Hami Melon in Later Period of Storage C.K. Chen, W.S. Wang, J. Ning and Y.H. Gao	1212

Rapid Detection Viable Escherichia Coli O157 in Raw Milk Using Loop-Mediated Isothermal Amplification with Aid of Ethidium Monoazide D.G. Wang and G.C. Huo	1217
Classification, Substrate Specificity and Application of α-Galactosidases S.H. Li, M.P. Zhu and T.P. Li	1222
The Enhanced Cu²⁺- Stress Resistance of Microcystis Aeruginosa Induced by Exogenous Absciscic Acid S.B. Li, J. Lv, H.F. Xue, Z.X. Xu, J.Y. Wei, L.H. Guo, M.Z. Yang and X.L. Chen	1229
Preparation and Characterization of Novel Methyl Acrylate Y.E. Guo, J. Cao, C.J. Zhou, S.P. Wen, Y.M. Zhang and G.Z. Fang	1236
Design and Preparation of 1H-3, 4-Dihydropyrrolo[1,2-a] Pyrazin-1-One via 1H-3,4-Dihydropyrrolo[1,2-C] [1,4] Oxazin-1-One Route Y.E. Guo, X.G. Niu, C.J. Zhou, J. Chu, W.W. Xu and G.Z. Fang	1242
Lentiviral Vector-Mediated <i>In Vitro</i> Down-Regulation of Porcine Somatostatin Expression Using shRNA J.H. Ding, Q.Y. Xi, H.Y. Li, G. Shu, S.B. Wang, X.T. Zhu, P. Gao, Q.Y. Jiang and Y.L. Zhang	1248
Molecular Cloning and Sequence Analysis of Peroxiredoxin cDNA from American White Shrimp (<i>Litopenaeus vannamei</i>) X.L. Liu, Q.Y. Xi, L. Yang, H.Y. Li, Q.Y. Jiang, G. Shu, S.B. Wang, P. Gao, X.T. Zhu and Y.L. Zhang	1255
Investigation of Heavy Metal Pollutants in a Sewage Treatment Plant of Changchun in Frozen Period Y.Z. Lin, C.H. Cao, J. Yin and H.J. Qi	1265
Study on Changes of Nitrobenzene Degrading Bacteria in ABR Reactor Y.Z. Lin and Q.L. Li	1269
Effects of Sucrose Concentration on the Bulblet Formation and Growth of Three Lilies <i>In Vitro</i> M. Sun, J.F. Shi and Q.X. Zhang	1276
Biotransformation of Digitoxin by Aspergillus Ochraceus Y.W. Fu, H. Sun, Y.J. Shen, X. Chen and M. Wang	1281
Apoptosis of Human Gastric Cancer Cell Line SGC-7901 Induced by Allicin S.L. Shao, W.W. Zhang and F.Y. Li	1285
Effect and Mechanism of Cholesterol-Lowering by Kluyveromyces from Tibetan Kefir H. Liu, Y.H. Xie, L.X. Xiong, R.T. Dong, C.L. Pan, G.X. Teng and H.X. Zhang	1290