

Environmental Technology and Resource Utilization II

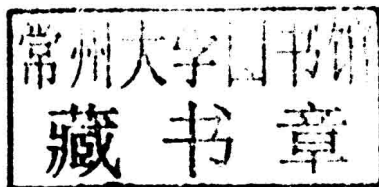
Part 1

Edited by
Lanhe Zhang

Environmental Technology and Resource Utilization II

PART 1

Selected, peer reviewed papers from the
2014 2nd International Conference on
Renewable Energy and Environmental Technology
(REET 2014),
August 19-20, 2014, Dalian, China



Edited by

Lanhe Zhang

TTP

Copyright © 2014 Trans Tech Publications Ltd, Switzerland

All rights reserved. No part of the contents of this publication may be reproduced or transmitted in any form or by any means without the written permission of the publisher.

Trans Tech Publications Ltd
Churerstrasse 20
CH-8808 Pfaffikon
Switzerland
<http://www.ttp.net>

Volumes 675-677 of
Applied Mechanics and Materials 3-part-set
ISSN print 1660-9336
ISSN cd 1660-9336
ISSN web 1662-7482

Full text available online at <http://www.scientific.net>

Distributed worldwide by

Trans Tech Publications Ltd
Churerstrasse 20
CH-8808 Pfaffikon
Switzerland

Fax: +41 (44) 922 10 33
e-mail: sales@ttp.net

and in the Americas by

Trans Tech Publications Inc.
PO Box 699, May Street
Enfield, NH 03748
USA

Phone: +1 (603) 632-7377
Fax: +1 (603) 632-5611
e-mail: sales-usa@ttp.net

printed in Germany

Applied Mechanics and Materials

ISSN: 1660-9336, ISSN/ISO: Applied Mechanics and Materials

Editors:

Publishing Editor: **Thomas Wohlbier**, 105 Springdale Lane, Millersville,
PA 17551, USA, t.wohlbier@ttp.net

Xi Peng Xu, Huaqiao University, Ministry of Education Engineering Research Center for
Brittle Materials Machining, Xiamen, 361021, China, xpxu@hqu.edu.cn

Aims and Scope:

Applied Mechanics and Materials is a book series specialized in the rapid publication of proceedings of international conferences, workshops and symposia as well as state-of-the-art volumes on topics of current interest in all areas of mechanics and topics related to materials science.

Internet:

The periodical is available in full text via www.scientific.net

Subscription Information:

Irregular: approx. 80-100 volumes per year. First volume in 2014: Vol. 440

The subscription rate for web access is EUR 1089.00 per year.

Standing order price for print copies: 20% discount off list price plus postage charges.

ISSN print 1660-9336 ISSN cd 1660-9336 ISSN web 1662-7482

Trans Tech Publications Ltd

Churerstrasse 20 • 8808 Pfaffikon • Switzerland

Fax +41 (44) 922 10 33 • e-mail: ttp@ttp.net

<http://www.ttp.net>

<http://www.scientific.net>

Environmental Technology and Resource Utilization II

PART 1

Edited by
Lanhe Zhang

Preface

Scientists continue to search for clean and renewable energy alternatives to our current power production methods. And the global reduction of greenhouse gases is dependent on the adoption of energy conservation technologies at industrial level as well as this clean energy generation. The 2014 2nd International Conference on Renewable Energy and Environmental Technology (REET 2014, ICREET 2014) took place in Dalian, China, August 19-20, 2014. This conference series provides a forum for accessing to the up-to-date knowledge from both industrial and academic worlds and allows for the free exchange of ideas and challenges faced by these two key stakeholders and encourage future collaboration between these groups.

Following evaluation and feedback by the International Scientific Committee, accepted papers are selected for publications in those volumes. Studies presented in this book cover these topics: Environmental Chemistry and Biology, Environmental Materials and Processing Technology, Environmental Safety and Health, Environmental Planning and Assessment, Environmental Analysis and Monitoring, Environmental Restoration Engineering, Pollution Control Engineering, Waste Disposal and Recycling, Water Supply and Drainage, Hydrology, Water Resources Engineering, Soil and Water Conservation, Ecological Environment and Architectural Environment Protection, Forest Cultivation, Protection and Plant Protection, Geographic Information Science and Remote Sensing, Urban and Regional Planning, Land Resources Planning, Mineral Prospecting and Exploration, Mining, Mineral Processing and Metallurgical Engineering, Oil and Gas Well Development Projects, Agricultural Products Processing and Biological Pharmaceutical, Energy Saving, Environmental Protection, Low Carbon Ideas, and Sustainable, Environmental Protection and Economic Development, Global Climate Change and Carbon Emissions, Eco-Economy, Circular Economy, Low Carbon Economy.

We want to thank the Organizing Committee, the Institutions and Sponsors supporting the conference, and everyone who contributed to the organization of this meeting, for their invaluable efforts in order to guarantee the complete success of this conference.

The Organizing Committee of REET 2014

2014 2nd International Conference on
Renewable Energy and Environmental Technology
(REET 2014)

Conference Organization

Chairman

Prof. Guoqing Li, Northeast Dianli University, China

Co-Chairman

Prof. Guowei Cai, Northeast Dianli University, China

International Scientific Committee

Prof. Jun Ma, Harbin Institute of Technology, China

Prof. Dongming Ren, Energy Research Institute National Development and Reform Commission

Prof. Guangjun Wang, Chongqing University, China

Prof. Peihong Wang, Southeast University, China

Prof. Guoqing Li, Northeast Dianli University, China

Prof. Guowei Cai, Northeast Dianli University, China

Prof. Yong Li, Northeast Dianli University, China

Prof. Zhiming Xu, Northeast Dianli University, China

Prof. Jianguo Wang, Northeast Dianli University, China

Prof. Yanzhong Ju, Northeast Dianli University, China

Prof. Gangui Yan, Northeast Dianli University, China

Prof. Mojie Sun, Northeast Dianli University, China

Prof. Xiaohui Guan, Northeast Dianli University, China

Prof. Yingjie Zhang, Northeast Dianli University, China

Prof. Jingli Xu, Shanghai University of Engineering Science, China

Prof. Wenbin Cai, Fudan University, China

Prof. Zhenqian Chen, Southeast University, China

Prof. Haozhong Cheng, Shanghai Jiao Tong University, China

Prof. Ming Dong, Shanghai Jiao Tong University, China

Prof. Boxue Du, Tianjin University, China

Prof. Yang Fu, Shanghai University of Electric Power, China

Prof. Honghua Ge, Shanghai University of Electric Power, China

Prof. Jingtao Han, University of Science & Technology Beijing, China
Prof. George A . O'Doherty, Northeastern University, USA
Prof. Tetsuro Majima, Osaka University, Japan
Prof. Zhongyang Luo, Zhejiang University, China
Prof. Yunfeng Lu, University of California, Los Angeles, USA
Prof. Jummy C. Yu, The Chinese University of Hong Kong, HK
Prof. Zhengyi Jiang, University of Wollongong, AU
Prof. Yongguang Li, Shanghai University of Electric Power, China
Prof. Boqiang Lin, Xiamen University, China
Prof. Yongdi Liu, East China University of Science and Technology, China
Prof. Lianguang Liu, North China Electric Power University, China
Prof. Xiaoming Jia, Hebei United University, China
Prof. Jianmin Chen, Fudan University, China
Prof. Jinping Jia, Shanghai Jiaotong University, China
Prof. Xuesong Jin, Southwest Jiaotong University, China
Prof. Yongfa Zhu, Qinghua University, China
Prof. Yiming Xu, Zhejiang University, China
Prof. Shaojian Ma, Guangxi University, China
Prof. Sihai Jiao, Research Institute,Baosteel, China
Prof. Yungang Li, Hebei United University, China
Prof. Shanqing Li, Research Institute,Baosteel, China
Prof. Yongchen Lin, Central South University, China
Prof. Xianghua Liu, Northeastern University, China
Prof. Lian'guang Liu, South China Electric Power University
Prof. Zifeng Ma, Shanghai Jiao Tong University, China
Prof. Weiguo Pan, Shanghai University of Electric Power, China
Prof. Jianxing Ren, Shanghai University of Electric Power, China
Prof. Shigang Sun, Xiamen University, China
Prof. Wenlei Sun, Xinjiang University, China
Prof. Zhong Tang, Shanghai University of Electric Power, China
Prof. Kaiming Wu, Wuhan University of Science and Technology, China
Prof. Jun Wang, Northeastern University, China
Prof. Fushuan Wen, Zhejiang University, China
Prof. Qiang Wang, Jinan University, China
Prof. Yongyao Xia, Fudan University, China
Prof. Gang Xu, Guangzhou Institute of Energy Conversion, CAS
Prof. Yongping Yang, South China Electric Power University
Prof. Shaohui Yin, Hunan University, China
Prof. Bo Zhang, South China University of China, China

Prof. Hong Zhang, Nanjing University of Technology, China
Prof. Guohua Zhao, Tongji University, China
Prof. Feng Zhao, Institute of Urban Environment, CAS
Prof. Daquan Zhang, Shanghai University of Electric Power, China
Prof. Jianmin Zeng, Guangxi University, China
Prof. Qi Zhou, Tongji University, China
Prof. Heinz-Gunter, Brokmeier, Technische Universitat Clausthal, Germany
Prof. Sagar Kamarthi, Northeastern University, USA
Prof. Christian Kloc, Nanyang Technological University, Singapore
Prof. George A. O'Doherty, Northeastern University, USA.
Prof. Tetsuro Majima, Osaka University, Japan
Prof. Yunfeng Lu, University of California, Los Angeles, USA
Prof. Jimmy C. Yu, The Chinese University of Hong Kong, Hong Kong
Prof. AKM Nurul Amin, International Islamic University, Malaysia
Dr. Chunsheng Lu, Curtin University of Technology, Australia
Prof. Geun Jo Han, Dong-A University, Korea
Prof. Ken-ichi Manabe, Tokyo Metropolitan University, Japan
Prof. Indra Putra Almanar, Universiti Sains Malaysia
Prof. Kyung-Man Moon, Korea Maritime University, Korea
Prof. Walid Mahmoud Shewakh, Beni Suef university, Egypt
Prof. Christian Kloc, Nanyang Technological University, Singapore
Prof. Jacques Noudem, CRISMAT laboratory, France

Local Organizing Committee

Prof. Yanzhong Ju, Northeast Dianli University, China
Prof. Gangui Yan, Northeast Dianli University, China
Prof. Mojie Sun, Northeast Dianli University, China
Prof. Lanhe Zhang, Northeast Dianli University, China
Prof. Yong Li, Northeast Dianli University, China
Prof. Yingjie Zhang, Northeast Dianli University, China

Table of Contents

Preface v

Conference Organization vi

PART 1

Chapter 1: Materials and Processing Technology

A Two-Step Method Synthesis and Microwave Absorption Properties of Double-Shell Ni@BN@BaTiO₃ Nanocapsules
G.M. Shi and Y. Zhu..... 3

CO₂ Absorption/Release Properties of Lithium Silicate (Li₂SiO₃) Powders Prepared by the Sol-Gel Process
F. Wang, S. Wakou, S. Hirai, T. Kuzuya and T. Li 7

Properties of Resistance Spot Welded Joint between Mild Steel and Aluminum Alloy with an Interlayer of AlCu₂₈
L.L. Hou, R.F. Qiu, H.X. Shi and J.Q. Guo 15

Resistance Spot Welding between Copper Coated Steel and Aluminum Alloy
L.H. Cui, R.F. Qiu, H.X. Shi and Y.M. Zhu 19

Resistance Spot Welding between Mild Steel and Stainless Steel
N.N. Wang, R.F. Qiu, W.J. Peng and H.X. Shi 23

Solvothermal Synthesis of Size-Controlled Lead Zirconate Titanate Particles
F. Zhang and Z.J. Wang 27

Surface Wettability of the Contaminative Silicone Rubber
Y.Y. Hu, X. Yu, G.G. Wang and M. Lu 31

The Formation of Coesite under Minimum Static Pressure
D.J. Wang, R.R. Liu and L. Jing 38

Measurement System Research on Micro-Arc Oxidation Load Feature
H.Y. Liu, W. Yang, J.Y. Han and S.Y. Yang 42

Mechanical Behavior of a Dissimilar Metal Weld Used for Nuclear Power Plants
G.F. Li, G.J. Li, J. Peng, M.L. Zhang and Z.Y. Sun 47

Research on the Impact Mechanic Property of the Silicon Carbide with Tungsten (SiC-W) Composite Material
H.C. Sun, B. Hu, H. Zhang, L.N. Zhang and X.G. Wang..... 52

Chapter 2: Environmental Chemistry and Microbiology in Environmental Engineering

Advances in Stress Factors of Aquatic Macrophytes in Polluted Water
C.Y. Zhang and L.P. Wang..... 61

Effect of Roxithromycin on the Morphology of Tissues in the Liver of *Cipangopaludina chinensis*
H.W. Wang, L.K. Yang, J. Zhang, D.Y. Dou, Y.N. Wang, H.Q. Gao, X. Liu and D.B. Cai..... 67

Nitrification and Denitrification Potentials of Soil in Liaohe Estuary Wetland Y. Xiao and J.S. Yang.....	71
Nucleophilic/Oxidizing Degradation of Paraoxon and Thioanisole Using NH₃ Modified Aqueous H₂O₂ Solution S.P. Zhao, H.L. Xi, Q. Wang and Y.J. Zuo.....	75
Soil Microbial Community Structure in Tree Peony (<i>Paeonia suffruticosa</i>) Garden Based on PLFA Analysis D. Xue, X.D. Huang and L. Xue.....	82
Study on Light Intensity Attenuation Characteristics of <i>Chlorella</i> Sp. Culture and the Growth of <i>Chlorella</i> Sp. with the Gradient Light Illuminate Culture L.H. Yue and Y.P. Yang.....	86
The Effects of Static Magnetic Field in Leaching Cadmium and Arsenic by <i>Acidithiobacillus ferrooxidans</i> L.L. Lu, D.W. Li, X.D. Wei, C.J. Liao, J.L. Jiang and L. Su.....	90
The Evaluation of Water Quality and Survey of Benthic Diversity in the Sha River and Xiangshui River of Dongjiang (China) H.W. Wang, L. Liu, Z. Fu, C.L. Zhao, Q.C. Xing, W.B. Zhao and D.B. Cai.....	94
The Indices of Diversity of Benthic Macroinvertebrates in the Danshui River of Dongjiang (China) H.W. Wang, J.X. Wang, J. Zhang, A. Hasan, Y.W. Liu, Q.C. Xing and D.B. Cai.....	98
The Influence of Ecological Remediation Process on Bacterial Community Composition in Beishi River Sediment Determined by PCR-DGGE Analysis J.H. Wang, J.F. Guan, X.C. Yang, M. Wang, S.S. Zhang and W.T. Gu.....	102
The Mechanism of Activated Sludge Flocculation under Al³⁺ Dosing W.L. Zheng, A.S. Cao, Y. Wen, H.R. Chen and Q. Zhou	106
Thyroid Hormone Levels Alteration in Sole (<i>Cymoglossus robustus</i>) Exposed to Polybrominated Diphenyl Ethers S.Y. Tian, C.Z. Song and Y.N. Gao.....	111
Wettability Determination of the CO₂-Reservoir Brine-Reservoir Rock System at High Pressures and High Temperature for Different Salinities H.T. Wang.....	115
Acute Toxicological Effects of Suspended Solids on the <i>Nitzschia closterium</i> Y. Yuan, L. Zheng and C.Y. Zhou.....	120
Effects of Smoking on Serum SOD and GSH-PX Activities and MDA Contents in Rats with Gastric Ulcer S. Jing, W.H. Jiang and W. Sun.....	126
Extraction of Plant Activator Protein from Botrytis Strain and Activity Detection Y.W. Cheng, Y.Z. Zhang, H.Y. Ya, C.J. He, L. Yi, L. Tang, X.N. Du, B.Y. Wu and D.X. Ding.....	130
Inactivation of <i>Giardia intestinalis</i> by H₂O₂/O₃ S.F. Li and Z.L. Ran.....	134
The Analysis of Morphology Characteristics of Iron Plaque on the Roots of <i>Carex cinerascens</i> C.Y. Liu, X.F. Gong and J.Y. Yang.....	140
CSR-deNO_x with CO over Supported Pd Catalysts under Lean Conditions Y.H. Li, L. Bai, F. Zhao, J.Y. Zou, H. Liu and Y. Zhang.....	145
Influence of TiO₂ on Noble Metal Based Catalysts for Lean NO_x Reduction with CO Y.H. Li, C.X. Dong, J.Y. Zou, H. Liu, J.H. Guo and W.L. Lu	149
Preparation and Photocatalytic Properties of the Chrome Doped Nano-TiO₂ Emulsion L. Li, H.Y. Zhang, X.W. Li and W.M. Zhang	154
Synthesis and Adsorption Properties of Salicylic Acid Modified Hypercrosslinked Polymer Toward 4-Chloro-Phenol and Heavy Metals G.H. Meng, B.H. Liu, Y.L. Wu and J. Zhang.....	158

Structural Characteristics of Intracellular and Extracellular Organic Matter from <i>Microcystis aeruginosa</i>	
H. Wang, D.M. Liu, P. Wang and F.Y. Cui	163
Effect of Bap on the Expression of Cx43 in Leydig Cells	
H. Li, Y. Zhang and S.G. Jin	167
Genotoxicity of Organic Extracts in Water from Jilin City Section of the Second Songhua River	
J. Zhang, H. Li and S.G. Jin	171
Leaching Behavior of Chlorpyrifos and its Main Metabolite TCP through 5 Types of Soil Columns in Laboratory Conditions	
B.L. Sun, H. Shan, Y.W. Dong, J.L. Huang and C.F. Tong	175
Simultaneous Determination of Four Plant Hormones in Soil by Ultrasound-Assisted Ionic Liquid Based Dispersive Liquid-Liquid Microextraction	
G.Q. Huang, S.Y. Dong, Z. Yang and T.L. Huang	181

Chapter 3: Environmental Safety and Health

Analysis on Instability of a High Fill and Deep Excavation Loess Slope	
S.L. Tang, B.B. Han, Z.B. Li and L.H. Sun	187
Health Risk Analysis for Pb Exposure of Human from Indoor Dust in Shenyang	
D. Jin, D.M. Zheng and L.N. Sun	191
Influence of Natural Ventilation on Indoor PM2.5 Concentration in Residential Building	
L. Zhao, C. Chen and G.Q. Cao	194
Model of Gas Transport in Underground Detonation Based on Dual Porosity and Dual Permeability	
Y. Cao, T.L. Wang and G.Y. Niu	199
Research on Emergency Aid Decision-Making Model for Environmental Emergency Based on Case-Based Reasoning	
Y.J. Zhang	206
Risk Analysis of Environmental Pollution by Secondary Hydrogen Chloride from Leakage of Phosphorus Trichloride	
L. Zhang, X.Q. Liu, Y.Y. Li and H. Yuan	213
Simulation and Analysis of Noise Control Scheme for Hangzhou Cigarette Factory New Packing Workshop	
Y.P. Wang, X.Z. Li, Y.C. Wu and J. Hao	217
Study on the Hazardous Factors Analysis of Welding in Ship Repairing and Building	
K.L. Xu	225
Study on the Purification Effect of Chlorophytum Comosum on Indoor Formaldehyde	
X.G. Zhao, N. Zhang, H. Shu and N. Liu	229
Survey and Analysis of the Cognition of Urban Residents on the Food Hygiene and Safety in Natural Disasters	
H.C. Hong and M. Xu	233
The Influence of Environment Air Pollution on the Respiratory Health among Pre-School Children	
C.S. Zhao, M. Xu and C.G. Li	237
Analysis and Study on Effects of Family Environment Improvement on Children with Asthma	
J.H. Wang and H.J. Jiang	241
Comparative Analysis on Family Environment Factors in Children with Asthma and Healthy Children	
J.H. Wang and C.X. Wang	245

Indoor Environmental Tobacco Smoke Impact on Respiratory System Health among Pre-School Children	
C.S. Zhao, J.H. Wang and C.G. Li.....	249
New Method of Determiner of the Position of Lightning Stroke Point by Using Dynamic Analysis	
H. Wu, Y. Huang, Y.S. Quan and P.X. Shi.....	253
Analysis of the Influence of Racks on High Speed Train Interior Noise Using Finite Element Method	
D. Wu and J.M. Ge	257
Application of RBF Neural Network in Dam Deformation Prediction	
G.H. Xu.....	261
Application of Optimized Parameters SVM in Deformation Prediction of Creep Landslide Tunnel	
Y. Liu and Y.X. Zhang	265

Chapter 4: Environmental Analysis and Monitoring

<i>In Situ</i> Measurement of Algae Concentration Based on Pseudorandom Sequence Modulation	
C.Y. Shi, Y.J. Zhang, G.F. Yin, N.J. Zhao, J.B. Duan, L. Fang and X. Xiao	271
Analysis of Bifenthrin and its Enantiomer Using High Performance Liquid Chromatography	
S.S. Fan, J. Shi, L. Zhou and Y.W. Hang.....	275
Cleaning Waste Sulfuric Acid from PVC Gas Analysis Scheme Design and Composition Analysis	
X.L. Chen, K.Y. Gao and C. Li.....	280
Determination of Dihydroxybenzene Isomers in Wastewater Samples at Poly(Glutamic Acid) Modified Glassy Carbon Electrode	
C.Y. Wang, Y.X. Qi and X.Q. Liu.....	284
Development of a SPE-HPLC-PDA Method for the Determination of Tetracyclines in Soils	
B.L. Sun, Y.W. Dong, H. Shan, J.L. Huang and C.F. Tong	288
Evaluation and Content of Various Heavy Metals in the Bohai Bay (China) during the Autumn	
H.W. Wang, D.B. Cai, Z. Fu, C.L. Zhao, N. Zhu, W.B. Zhao and S.S. Lu	295
Heavy Metals (Fe, Zn, Mn, Cr, As) Speciation Analysis and Ecological Risk Assessment in the Surface Sediments of WuHe Wetland	
R.J. Liang, X.T. Ma and J.C. Qiu.....	299
Management of Ecological Real Estate - A Method of Biodiversity Analysis in Water	
K. Shi and L.L. Zhou	305
Rapid Determination of Sulfide in Tannery Wastewater by Flow Injection Spectrophotometry	
D. Yuan and D.Y. Fu	310
Relationship between Air Pollutants and Visibility in Shanghai during 2006-2010	
D. Xue and Q. Liu.....	314
Study of China's Highway Environmental Monitoring Network Planning	
F. Zhang, S.Y. Cheng, P. Zhong, R. Wu, M.J. Ma and W.W. Gong	318
Study on the Risk Analysis and Emergency Measures to the PX Projects of Dalian Dagushan which Impact on the Marine Environment	
J. Zhang, J.G. Lin and H. Zhang	325
Study on the Vertical Distribution of Cr in Jiaozhou Bay	
D.F. Yang, F.Y. Wang, H.Z. He, C. Yang and S.X. Zhu.....	329
The Analysis of Crude Oil Nature's Impact on Oil Pipeline Underground Divulging Pollutant Migration	
G.Z. Wu, Y. Wang, H.B. Qi, Y.M. Zhou and D. Li.....	332

The Application of a High Sensitive Laser Frequency Modulation Absorption Spectroscopy L.L. Liu, C.L. Li, Y.F. Wu, W.X. Shi, F.L. Wu, X.B. Qiu and J.L. Wei.....	336
The Impact Analysis on Crude Oil Phase Change to the Migration of Buried Oil Pipelines Leakage Pollution G.Z. Wu, E.Y. Guo, H.B. Qi, Y.M. Zhou and D. Li	341
The Monitoring and Ecological Evaluation of Beng River Sediment for Heavy Metals (Hg,Pb,Cr) J.C. Qiu	345
Detection and Evaluation of Heavy Metal in Edible Fungi of Liaoning Province S.G. Xin, G.D. Li, F.L. Ren, N. Li and S.W. Wu	350
Determination of Polycyclic Aromatic Hydrocarbons (PAHs) in Ginkgo Biloba Extracts by HPLC with Fluorescence Detection S.R. Tang, H. Song, Q.D. Liu and Y. Chen	354
Numerical Simulation of Multiphase Flow Pollutants during Migration Process in Buried Oil Pipeline Leakage H.B. Qi, Y. Liu, G.Z. Wu, D. Li and J. Liu	359
Study on Distribution and Source Apportionment of Heavy Metals in Atmospheric Particulate Matter in Gansu, Ningxia and Inner Mongolia Sections of the Yellow River of China X.L. Ma, X.Q. Ren, J.J. Liu and Y. Liu	363
Water-Quality Assessment on Butterfly Lake in Guangdong Ocean University, China Y.Y. Liu, Z.K. Chen, K.J. Ren, Y. Jia, Y.X. Guo and J.H. Zhu	367
Heavy Metal Contamination from Sediment and Soil in the Riparian Zone of the Three Gorges Reservoir, China Y.C. Wang, B. Lei, C.H. Yang, L. Ao, M. Yang, Y.F. You and Z. Sheng	371
Application of Cloud Theory and Set Pair Analysis Coupled Model for Evaluating Environmental Carrying Capacity in Tianjin Q. Si and M.C. Li	377
Investigation on Air Quality in Strawberry Greenhouse under Natural Ventilation W.H. Fu and S.J. You	382

Chapter 5: Environmental Restoration Engineering

Aeration Settling Process on Treating ASP Produced Water of Oilfield G.M. Liu, X. Jia, M.J. Liu and W. Zhi	391
Assessment of the Fe³⁺-EDTA Complex in UV-Fenton-Like Processes: The Degradation of Methylene Blue C.S. Wei, W.Y. Huang, R.J. Zhang, Y.H. Wang, L.M. Luo, H. Mo and L.H. Xiao	395
Criteria and Procedures for Regional Environmental Regeneration: A European Strategic Project S. Miccoli, F. Finucci and R. Murro	401
Effect of SRT on the Denitrifying Dephosphorylation Process Y.P. Jia, Q. Zong, L.H. Zhang and H.F. Zhang	406
Effects of Butyrate on Autotrophic Anaerobic Ammonium Oxidation (Anammox) H. Li, L. Zhang, Z.X. Li and X.B. Chen	410
Enhanced Dissipation of POPs in Soils by Combined Plants Cultivation J.H. Luo and Z.H. Lei	416
Experimental Study on Desulfurization Enhanced by Additive in Limestone-Gypsum FGD Process J.X. Liu	422

Magnetic Nd₂Fe₁₄B Activated Carbon: Fabrication and Heterogeneous Fenton Oxidation of Congo Red
C.W. Yang, D. Wang and Q. Tang 426

Purification Efficiency of Compound Aquatic Plants for the Eutrophic Water Body
H. Wang, X. Wang, S.M. Wang and X.C. Ji 430

Removal of Phosphate Species from Solution by Adsorption onto Red and Grey Ceramic Clay Used as Adsorbent
Y.L. Yao, C.Y. Lu, W.S. Guan, H.G. Gou and W. Huang 434

Research on Application of Treating Beet Sugar Wastewater with IC Reactor
R.Y. Lei, Y. Wang and Y.F. Li 440

Selection of Liaoning Ocean Observation Station Site in Baishawan and Impact Analysis of Shoreline Ecological Environment
H. Zhang, J.G. Lin and J. Zhang 444

Study on Photocatalytic Degradation of MG by PW₁₂-TiO₂/SiO₂
X.Q. Wang, Q.Z. Yang, S.Y. Fan and Y. Li 448

Determination of Retardation Factor of Perchloroethylene in Low Organic Carbon Aquifer
C.W. Ma, H.Y. Xie and Z.G. Sun 455

Study on Model of Organic Bentonite Adsorption for Phenol Based on Artificial Neural Network
S.C. Liu, J.X. Zhou and G.F. Xue 460

The Study of Organic Bentonite Competitive Adsorption Model for Phenol and Cr⁶⁺ Based on MATLAB
S.C. Liu, J.X. Zhou and G.F. Xue 466

Ecological Compensation Mechanism of Liaoning Seas
X. Ai, L.N. Zheng, J.N. Xiao, L. Zhang and L. Wang 471

Chapter 6: Pollution Control Engineering

A Reactive Nano-Fe/Cu Composite Supported on Expanded Graphite for Nitrate Reduction in Water
J.J. Yue, Y.T. Wang, Z.H. Shi, J. Liu and X. Feng 479

Analysis of Degradation by Aerobic Recharge for Concentrated Leachate
J. Zhang, P. Xian, L.H. Yang, L.H. Zhan and G.H. Bu 483

Application of Bamboo Shoot Shell in Color Removal from Methylene Blue Solution
J.M. Zhang, Z.W. Zhong, D.P. Zhu, L.M. Lin, Q.J. Wang, Q.Y. Tang, Z.M. Luo and L.Y. Ye 489

Biodegradation of Major Pollutants in Yeast Wastewater by Using Immobilized Micro-Aerobic Microorganism Technology
J. Fu, X.F. Wang, C.B. Deng and P. Xian 493

Biofilm Formation and Phosphorus Removal in Two Stage Biological Filters by Alternative Aeration
C.J. Sun, L.P. Qiu and L.X. Zhang 501

Bio-Treatment of APMP Effluent with Activated Sludge
T.Z. Liu, H.Y. Wang, S. Li and Y. Liu 505

Distribution and Pollution Assessment of Heavy Metals and Petroleum Hydrocarbon in Surface Sediments from Chenglingji Port
H.X. Xiong, X.L. Liu, C.B. Liu and X.B. Liu 510

Effect of Matrixes and Plants on the Removal of Nitrogen and Phosphorus in Paddy Fields Drainage Ditch
X.D. Lv, H.B. Li, H. Wang, X. Wang, Y.H. Li, X.C. Ji and Y.Y. Yu 516

Effective Photocatalytic Degradation of Methyl Orange Utilizing ZnS/TiO₂/Chitosan Films under Simulated Solar Irradiation	
P. Du, X.L. Shangand and C.H. Li.....	520
Experimental Study on Modified Fly Ash as a Substrate of Constructed Wetland	
M.F. Guo, P. Xian, X. Liu, L.H. Yang, L.H. Zhan and G.H. Bu.....	524
Experimental Study on the Preparation of Nutshell Activated Carbon and the Disposal of Catering Wastewater	
J.Y. Huang, M. Qin, Q.P. Peng, S. Wen and Y.X. Zhang.....	530
Experimental Study on Treatment of Urban Runoff by Embankment Flow System	
P.F. Wang, H.B. Li and Y.H. Li.....	534
Experimental Study on Treatment of Wastewater Containing Oil and Polyacrylamide by Aerobic and Anaerobic Bacteria	
G.M. Ren, Y. Pan, X.M. Yang, Y.Y. Qiao, H.W. Li, C. Meng and D.Y. Xu.....	539
Octahedral Molecular Sieves (OMS) of Copper-Manganese Oxides for Low-Temperature Selective Catalytic Reduction of NO with CH₄	
B.Z. Fang, C.L. Zhou, J.W. Cao, N. Zhang, J.L. Han, H. Li and X.D. Wang.....	543
Oxidative Degradation and Kinetics of Trichloroethylene by Thermally Activated Persulfate	
J.J. Yue, X.Q. Zhu, Y.T. Wang, Y.Q. Zhang, L. Zhao and Z.H. Shi.....	547
Research on Diffusion Effect of Sewage Marine Discharge from Different Angles	
H. Yu.....	551
Research on the Influence of Overlying Water pH to the Sediment Release	
X. Liu, P. Xian, Z.W. Wen, T. Xiang, L.H. Yang and M.F. Guo.....	556
Simulation on Flue Gas Pretreatment of Carbon Dioxide Capture Based on Aspen Plus Software	
T. Lv and L.M. Liu.....	563
Study of Pretreatment of Textile Wastewater Using CaO₂/H⁺/Fe²⁺ Advanced Fenton-Like Oxidation Technology	
X.G. Lu, P. Lin and Q.W. Jie.....	568
Study on Characteristics of Activated Sludge at Low Temperature	
S.S. Ai, X.H. Zhang, Y.B. Xiao, X. Tian and D.J. Bian.....	574
Study on Separation of Chlorine in Coal in Combustion Process of Pulverized Coal Injection into B.F.	
B.S. Hu, B. Zhang, Y.L. Gui and H.L. Guo.....	578
Study on the Removal Technology of Fluorescent Permeating Agent Emulsifying Wastewater	
J. Li, X.W. Zhang and W.X. Wang.....	583
Treatment of the Reactive Yellow Dye Wastewater by Microwave Enhanced Fenton Oxidation	
H.F. Chen.....	587
The Influence on MFC Voltage of Different Types of Oilfield Produced Water as Anode Substrate	
B.D. Qin, X.D. Dong, J.Y. Wang, C.Y. Sun, D.P. Guo and Y.F. Li.....	592
The Law of the Residual COD in Distilled Spirit Wastewater after Two Stages of Biochemical Treatment	
Y.Y. Li, X.Q. Liu, L. Zhang, H. Yuan and C. Liu.....	596
Water Purification Using Aeration Techniques in the Lagoon	
H.D. Kim and K.H. Kim.....	602
An Efficient Alternative for Oily Water Pollution Control Using Peat Moss	
M. Imran, Y.F. Chen and J. Zhen.....	608
Current Situation and the Harm of Soil Heavy Metal Pollution and Food Safety	
X. Guan and L.N. Sun.....	612
Design of Methane Digester for Jeddah Industrial Estate Waste Water Treatment Plant	
N. Abu-Hamdeh.....	615

Numerical Simulation of Vibration of Induced Draft Fan behind Desulfurization Tower Caused by Dust Accumulation
T. Lv and P.Y. He 619

Numerical Simulation Study of Wet Desulfurization in Demister in San-He Power Plant
Y. Zhang, T. Wang and J.B. Zhang 623

Research on Treatment of Domestic Sewage with Aerobic Denitrifying Bacteria Immobilized by Carbon Fiber
Q. Wei, D. Lv, M.H. Huang, D.S. Yu and J.Q. You..... 627

Anaerobic Ammonia Oxidation in Start-Up of Bench Scale ASBR
Z.Y. Wang, L.P. Qiu, L.X. Zhang and J.B. Wang 633

Study on Hair Dyeing Wastewater Treatment by the Union Process of Adsorption Coagulation and Potassium Permanganate Oxide
J. Yin and Y. Hu..... 638

Investigating the Impacts of Meteorological Parameters on Air Pollution in Shanghai
D. Xue and Q. Liu..... 643

Preparation of Mg-Fe HTLCs and Study on the Adsorption Performance
H.B. Lv, Y. Li, W.Y. Zhang and L.J. Xi..... 647

Using Regional Characteristic Amendments to Modify Heavy Metal Contaminated Soil of Guangxi, South China
Q.J. Li, R.J. Zhang, Y.H. Wang and D.R. Li 654