Environmental Science and Technology

(2007)

Volume 1

Edited by

Steven K. Starrett
Jihua Hong
Robert J. Wilcock
Qilin Li
John H. Carson
Samantha Arnold

Environmental Science and Technology (2007)

Volume 1

Edited by

Steven K. Starrett
Jihua Hong
Robert J. Wilcock
Qilin Li
John H. Carson
Samantha Arnold

Library of Congress Cataloging-in-Publication Data

Environmental Science and Technology 2007 (1)

Proceedings from the Third International Conference on Environmental Science and Technology, held August 6-9, 2007 in Houston, Texas, USA

Includes bibliographical references

ISBN: 978-0976885382

I. Starrett, Steven K.

II. Hong, Jihua

III. Wilcock, Robert J.

IV. Li, Qilin

V. Carson, John H.

VI. Arnold, Samantha

VII. International Conference on Environmental Science and Technology

(3rd: 2007: Houston: Texas)

Printed in the United States of America

Copyright © 2007 American Science Press. All rights reserved. This document, or parts thereof, may not be reproduced in any form without the written permission of the American Science Press. Requests for permission or further information should be addressed to the American Science Press, 9720 Town Park Drive, Houston, TX 77036, USA

Email: press@AASci.org

Website: www.AASci.org/conference/env

ISBN 978-0976885382 © 2007 American Science Press

SCIENTIFIC/TECHNICAL COMMITTEE

3rd INTERNATIONAL CONFERENCE ON ENVIRONMENTAL SCIENCE AND TECHNOLOGY (ICEST2007)

Dr. Yousef Al-Dakheel King Faisal University Hofuf, Saudi Arabia

Ibrahim Al-Khattat Sustainable Science Inc. Coralville, IA, USA

Dr. Raafat Alnaizy American University of Sharjah Sharjah, UAE

Dr. Pedro J. Alvarez Rice University Houston, Texas, USA

Dr. Samantha Arnold Golder Associates (UK) Ltd Nottingham, UK

Dr. Claudia Boian University of São Paulo São Paulo, Brazil

Dr. John Carson Shaw Environmental Findlay, OH, USA

Hemant Chowdhary Louisiana State University Baton Rough, LA, USA

Dr. Filiz B. Dilek Middle East Technical University Ankara, Turkey

Anna M. Doro-on Pape-Dawson Engineers, Inc., San Antonio, Texas, USA Dr. Reese Halter Global Forest Science Mill Valley, CA, USA

Dr. Barry J. Hibbs California State University Los Angeles Los Angeles, CA, USA

Dr. Mark Holtzapple Texas A&M University College Station, TX, USA

Dr. Jim Hong American Academy of Sciences Houston, TX, USA

Dr. Mark Ibekwe USDA-ARS-USSL Riverside, CA, USA

Dr. Jayakumar Indracanti Jackson State University Jackson, Mississippi, USA

Dr. B. Manoj Kumar Sri Jayachamarajendra College of Engineering Karnataka India

Dr. Qilin Li Rice University Houston, TX, USA

Dr. Mahtab A. Lodhi University of New Orleans New Orleans, LA, USA

Samea Lone University of Arkansas Little Rock, AR, USA

Dr. William G. Lyon

American Academy of Sciences

Houston, TX, USA

Dr. Nancy J. McMillan

New Mexico State University

Las Cruces, NM, USA

Dr. Hamada Mohamed Mahmoud American University in Cairo

Egypt

Dr. Danielle Miousse

Global Ionix Inc.,

Boucherville, QC, Canada

Dr. George Elambo Nkeng

Ecole Nationale Supérieure des Travaux Publics,

Camoron

Dr. Olusheyi Zaccheaus Ojekunle

Tianjin University Tianjin, China

Dr. Theodore I. Onyeche

CUTEC-Institut GmbH

Clausthal-Zellerfeld, Germany

Dr. Yih-Ho Michael Pao

National Academy of Engineering USA;

Floating Windfarms LLC,

Houston, TX, USA

Dr. Avin E. Pillay

Petroleum Institute

Abu Dhabi, UAE

Dr. Mubeena Akhtar Rajput

University of Sindh

Jamshoro, Pakistan

Dr. Sunkari Ramakrishna Rao

Andhra University

Andhr Pradesh, India

Mallika Senevirathna

Colt Engineering Corporation

Calgary, Alberta, Canada

Dr. George A. Sorial University of Cincinnati Cincinnati, OH, USA

Achim Stolle

Friedrich-Schiller University Jena

Jena, Germany

Dr. Shelli Starrett

Kansas State University

Manhattan, KS, USA

Dr. Steven K. Starrett

Kansas State University

Manhattan, KS, USA

Dr. Beyza USTUN

Yildiz Technical University

Besiktas, Istanbul, Turkey

Dr. Licina Vlado

University of Belgrade

Zemun-Beograd, Serbia

Dr. Robert J. Wilcock

National Institute of Water & Atmospheric

Research

Hamilton, New Zealand

Dr. Shuo-sheng (Derek) Wu

U.S. Geological Survey

Rolla, MO, USA

Dr. Chonghua Yao

East China University of Science and

Technology

Shanghai, China

Dr. Ulku Yetis

Middle East Technical University,

Ankara, Turkey

Dr. Chunlong (Carl) Zhang

University of Houston-Clear Lake

Houston, TX, USA

Dr. Yifang Zhu

Texas A&M University-Kingsville

Kingsville, TX, USA

TABLE OF CONTENTS

WATER POLLUTION AND WATER QUALITY CONTROL	
Rivers, Lakes and Estuary Systems	
Variation Trends of the Scalar Fluxes in the Yangtze River Estuary, China.	
Meng Wei, Lei Kun , Zheng Binghui, Fu Guo	4
Using an Unmanned Boat (U-Boat) for Environmental Measurements	
Chunyan Li, Eddie Weeks, Masamichi Inoue	9
Environmental Investigation and Estrogenic Activity in Yamato River Water System in Japan. **Akiyoshi Sawabe*, Ryuji Takeda, Yasuhiro Hachimura, Kazuki Ikushima, Daisuke Shima Sadao Komemushi	
New Models on Origin and Solubility of Selenium in Southern California Streams and Associate	
Aquifers. Barry Hibbs, Rachel Andrus, Guiyun Zhou, Hung Jun	
1	
Watershed Management	
Prevalence and Genetic Characteristic of E. Coli O157 in Urban Watershed Impacted By Difference	
Sources of Pollutants. A. Mark Ibekwe, Menu B. Leddy	
Strategies to Reduce Siltation into Reservoirs. Steve Starrett, Travis Heier	18
Tripartite Ply-Bamboo Venture in the Rehabilitation and Management of Maasin Watershed	
in Iloilo, Philippines. Victor Prodigo, Joussan Dolar, Alain Russ Dimzon	18
Water Quality Effects of Small Dam Removal. Brian A. Rischman, Chris A. Burke,	10
Joshua R. Wyrick, Craig McGee and Chasity Williams	19
Impact of Land Use Changes on Surface Water Quality in Eastern Massachusetts. **Jun Tu, Zong-Guo Xia***	20
Jun 14, 2018-040 Att	20
Water Resources and Assessment	
Modeling Assessing Heng Shui Lake Water Quality. Ojekunle, Z. Olusheyi, Zhao Lin, Li Ruo F	Ро,
Tan Xin	21
Closed Scenic Water Quality Control with Source of Reclaimed Water—Experiment Study.	
Zhang Dao-fang, Li Kun , Shi Xue-fei, Huang Xiao-jing, Teng Le-feng, Wang Rui-pu	27
Decision Support for Water Loss Management in Water Networks in Developing Countries.	
Wilhelm Urban, Ana Cangahuala Janampa	
Matter-Element Extension Evaluating Model Based on Comprehensive Weight and Close Degree	
SUN Xiu-ling, MA Hui-qun, TAN Yong-ming, XU Xiao-chiStrategies for Sustainable Water Supply in Hong Kong. Derek P. T. Yue, S. L. Tang	
Utilizing Indirect Reuse to Meet Future Water Needs in Montgomery and Harris Counties, Texa	
David Harkins, W.H. Espey, Chuck Settle	
Application of Improved Fuzzy Mathematics Method to Evaluate Qingdao River Water Quality.	
Miao Qun and Li Yue, Yao Huimin, Liu Zhiqiang, Hai Yang	
Non-point Sources	
Non-Point-Source Nitrogen Pollution in a Small Catchment in the Sichuan Basin, China.	<i></i>
ZHU Bo, WANG Tao, KUANG Fu-hong, LUO Zhuanxi, XU Tai-ping	

Watershed-Scale Statistical Evaluation of Effectiveness of BMPS in Southwestern Louisiana river basins. <i>Hemant Chowdhary</i> , <i>ZQ. Deng</i> , <i>Vijay P. Singh</i>
Effects of Sampling Interval on Spatial Analysis of Watershed Nitrogen Loading.
Li Shuo-sheng Wu, E. Lynn Usery, Michael P. Finn69
Retrospective Investigation of Chronic Oil Pollution in the Southern North Sea. <i>Alena Chrastansky</i> 75
Groundwater
Risk Assessment of Terrorism Based On Prospect Theory for Groundwater Protection.
C.S. Rocky Shih, Anna M. Doro-on, Andrew Gayley
Heavy Metal Pollution in Diesel Contaminated Stream Used as Domestic Water Supply.
Avin E. Pillay, R Victor, L Al Haddabi
Novel Tracer (¹⁸ 0) and Pesticide Infiltration through Soil Profiles of Northern Ireland.
Jaswinder Kaur, Ronald J Laughlin, Stewart Floyd, Samuel H Mitchell 83
Wastewater Discharge Management
Wastewater from Shrimp Farming and Water Pollution in Vietnam.
Nguyen Van Trai, Salim Momtaz, Kenneth Zimmerman
A Novel and Cost-Effective Approach on Preventive Water Pollution Control.
Ralf Minke, Ulrich Rott, Sabine Schmidt
Biofertilization Treatments under Diluted Seawater Irrigation. <i>M. M. Tawfik</i> , A. T. Thalooth 94
Economic Benefits of Low Pressure Sludge Homogenisation for Wastewater Treatment Plants.
Theodore I. Onyeche
Retention of Organic and Inorganic Compounds by Ro Membrane in Water Recycling Scheme.
Jawad H. Al-Rifai, William E. Price, Hadi Khabbaz
Wastewater Reclamation and Regional Sustainable Development A Case Study in Hengshui.
Zhao Lin , Yang Zhen, Li Ruopu, Tan Xin
Application of a Novel Concept of Wastewater Pre-Treatment in Textile Finishing Industry.
Ralf Minke, Ulrich Rott
Nanotechnology Applications
Environmental Implications and Applications of Nanotechnology: Fullerene-Bacterial Interactions.
Pedro J. Alvarez
Drinking Water
Thermodynamic Aspects of Nitrite Ion Retention on Clinoptilolite Modified With Quaternary
Amines. Daniela Micu, Georgeta Burtica, Iovan Lemic, Florica Manea,
Camelia Podaru, Daniela Sonea
Chlorinated Water By-Product Risk Assessment: Cancer Risk of Chloroform in Tehran Drinking Water. Ali Torabian, Nima Madani, Mona Nazeri
Elimination of Persistent Odorous Compounds from Drinking Water.
Rangesh Srinivasan, George A. Sorial , Gloria Ononye, Chad Husting, Eugene Jackson 120
Seawater Desalination Vessels: Building Capacity to Meet Future Water Challenges.
Andrew Gordon, Amanda Martin-Brock
The Role of Trading In Water Quality Management: The U.S. Experience. <i>Chanathip Pharino</i> 121
Water Quality Management
Assessment of Water Quality of Rivers Tungabhadra and Hundri.
C.V. Rajeswari, B. Saraswathi
A Quantitative Method for Analyzing Taste and Odor Causing Compounds in Water.
M. Brett Borup, Daniel E. Nichols, Roland J. Rocha

Impact of Industrial Tailings Pond on Surface Water. <i>Stanislaw Czaban</i> , <i>Andrzej Dąbrowski</i> Study on Application of Chaos Theory to Forecasting of Water Quality.	. 133
SUN Xiu-ling, MA Hui-qun, XU Xiao-chi	140
Massbalance and Integrated Modelling of Urban Micropollutants. <i>Frido Reinstorf</i> ,	. 140
Sebastian Leschik, Andreas Musolff, Gerhard Strauch, Monika Moeder, Rainer Wennrich,	
Karsten Osenbrueck, Mario Schirmer	141
Nitrogen-Phosphorus Wastewater Biotreatment	
A Pilot Study on Domestic Wastewater Treatment with A/O MBR Systems.	
Zhiqiang Liu, Zhanying Zhang, Tinglin Huang, Zhenai Sun, Miao Qun, Liu Chao	142
Field Studies of Mat Bioreactors, an Advanced Treatment for On Site Wastewater Treatment.	
J. Paniagua-Michel, J. Zamora-Castro	146
Carbon Source Recovery for Biological Denitrification by Alkaline and Radiation Treatment.	1.50
Tak-Hyun Kim, Tae-Hun Kim, Youn-Ku Nam, Jae-Kwang Lee, Myunjoo Lee	
Treatment of Domestic Wastewater Using Lab-Scale Sequencing Batch Reactor for Reusable Purpose	
Manoj Kumar B, Sudevi Basu	. 133
Physico-chemical Wastewater Treatment	
Recovery of Metals from Spent and Diluted Process Solutions Using the Rotating Electrode Technology	ogv.
Danielle Miousse, Frédéric Biton	
Application of Oil Remover in the Oily Wastewater Treatment From	
Alkali-Surfactant-Polymer-Flooding. <i>Ma Fang</i> , <i>Wei Li</i> , <i>Yao Jie</i>	167
Lead (Pb ²⁺) Removal from Printing Wastewater by Living Cyanobacteria Gloeocapsa Gelatinosa and	
Calothrix Marchica. Suneerat Ruangsomboon	
Some Studies on Electrochemical Method for the Treatment of Wastewater.	
Tetala Appa Reddy , Seepana Bala Prasad and Dhanunjaya Dubba	179
Acid Mine Drainage Treatment by a Two-Step Neutralization Ferrite-Formation Process.	
Pepe Herrera Salgado, Toshifumi Igarashi, and Kuniomi Asakura, Hiroyuki Uchiyama,	
Yusuke Ochi, Fumishige Ishizuka, Koichi Hashimoto	. 185
Investigation of Desorption of Cd(Ii) from Soil Component Na-Feldspar Using Rhamnolipids in	400
Different Reactor Systems. Yeliz AŞÇI and Macid NURBAŞ, Y. SAĞ AÇIKEL	. 192
Treatment of Leachate by Electrocoagulation and Electrooxidation Processes. Fatih İlhan,	100
Ömer Apaydin, Uğur Kurt, Ertan Arslankaya, M.Talha Gönüllü	. 198
Investigation and Scaleup of Chromium Hydroxide Settling Tank for Chrome Recovery Process. **Boppana Bharat Ram, B.V. Ramabrahmam, R. Bomma	205
Removal of Cr(Vi) By Sorption on Isomorphic Substituted Mg/Zn-Al - Type Hydrotalcites.	203
Laura Cocheci, Rodica Pode, Eveline Popovici, Elena Seftel, Emiliana Dvininov	211
Laura Coeneci, Routea I oac, Evenne I opovici, Liena Sejtei, Linuana Dvininov	211
Industrial Wastewater Biotreatment	
Removal of High Organic Loads from Winery Wastewater by Aquatic Plants.	
Yoram Zimmels, Felix Kirzhner, Joseph Schreiber	. 212
Evaluation of the Performance of Wastewater Treatment Plant in a Beverage Industry.	
Sunkari Ramakrishna Rao, Seepana Bala Prasad and Dupati Ravi Babu	. 219
Study of Adsorption of Cyanine Acid Blue from Aqueous Solutions Using Bentonite.	
Saeideh Hashemian	224
Salvinia Natans is an Ideal System for Phytoremediation.	
Anupriya Tyagi, P. Sharmila and P. Pardha Saradhi	234
Enhanced Wastewater Purification by Floating Aquatic Plants. <i>Yoram Zimmels</i> ,	
Felix. Kirzhner, and Anastasia Malkovskaja, Avri Kadmon	. 242
Utilization of Organic By-Products for the Removal of Triazophos Pesticide from Aqueous Media.	
Mubeena Akhtar, M. I. Bhanger, Shahid Iqbal, S. Moosa Hasany	
Comparison of Extracellular Polymeric Substances between Aerobic Granules and Activated	

Sludge Flocs. Shu-fang Yang and Xiao-yan Li	249
Municipal Wastewater Biotreatment	
In Situ Gene Expression of Bacteria to Excess Sludge Reduction.	
Lin Shanshan, Fu Lili and JIN Yuhua, Quan Chengshi	250
Study on Tower Microbial-Earthworm Ecofilter for Rural Domestic Sewage Treatment.	230
Zheng Zheng, Li Junzhuang, Luo Xingzhang, Su Donghui, Zhang Jibiao	257
Optimal Sustainable Design for Onsite Wastewater Treatment Using Evapotranspiration Bed System	
Anna M. Doro-on, Chia Shun Shih and G. Alberto Arroyo	
Optimization of Unitank® Process for Wastewater Treatment.	202
Chonghua Yao, Keman Su, Shangyan Dong and Wenjia Wang,	
Xisheng Wang and Zhou Xu	263
Aisheng wang ana zhou Au	203
Adsorption/Desorption for Wastewater Treatment	
Chromium and Fluoride Removal from Aqueous Solutions by Low Cost Adsorbents.	
Jyotsna Lal	264
Indigenous Adsorption Material for Textile Wastewater Treatment. <i>Muhammad Ahsan Iqbal</i> ,	
Tahir Jamil, Muhammad Arif Butt and Muhammad Ahmad	271
Sepiolite Clay as Adsorbent for Textile Dyes in Aqueous Solution.	
Sílvia C. R. Santos and Rui A. R. Boaventura	275
Reactions and Degradation of Wastewater Contaminants	
Degradation Of 4-Chlorophenol from Wastewaters by Electrooxidation Using Graphite Based	
Composite Electrode. Florica Manea, Ciprian Radovan, Georgeta Burtica,	
Adriana Bebeselea, Aniela Pop, Ioana Corb, Joop Schoonman	281
Degradation of Organic Compounds in Synthetic Wastewater Using an Integrated Photocatalyst	
Adsorbent. Chia-Hsin Li, Yung-Hsu Hsieh, Yun-Chieh Hung and Ming-Yi Chang	287
Kinetics and Degradation Products of Ozonation of Sulfamethoxazole.	
Viviane Yargeau, Christine Leclair and Jonathan Rubin	292
Lanthanum-	
Doped Titania Film Coated on Light Leakage Fiber Photodegradation Methyl Orange.	
YU Tao, TAN Xin , LI Enbang, ZHAO Lin	299
Anaerobic Treatment of Distillery Spent Wash in UASB and Hybrid Reactors. Gupta,	
Sunil Kumar, Singh, Gurdeep, Gupta, S. K	304
A Biodegradation of Methyl Tert- Butyl Ether by a Nitrate Reducing Mixed Culture.	
Manmohan S. Lal, Khursheed Karim and Greg Thoma	312
Arsenic Adsorption on Iron Plaque and Uptake in Duckweed (Spirodela Polyrhiza L.) Affected By	
Chemical Species. M. Azizur Rahman; Hiroshi Hasegawa; Kazumasa Ueda;	
Teruya Maki, M. Mahfuzur Rahman	318
AIR POLLUTION AND AIR QUALITY CONTROL	
Aerosol	
The Pollution Characteristic of Respirable Particulate of Haze in Shijiazhuang.	226
Ren Ailing, Guo Bin, Zhao Wenxia, and Du Xin	326
Evaluation of the MODIS Aerosol Products by CSHNET in China during EAST-AIRE.	222
Lili Wang, Jinyuan Xin, Yuesi Wang and Pucai Wang, Zhanqing Li	
Ultrafine Particle Morphology in Roadway Micro-Environments. Teresa L. Barone, . <i>Yifang Zhu</i>	332
Air Quality Assessment	
Air Quality Trends in Urban Areas of South Texas. Ronald K. Brown, Saritha Karnae,	

Jhumoor Biswas, Kuruvilla John	. 333
Transport of Air Pollutants	
Variations in the NO _x Composition Ratio of Emissions from Landfill Gas Engines.	
Samantha Arnold, Emma Fuggles, Amy Foy, Bob Gregory	. 334
Effects of Spatial, Temporal, Meteorology and Topography on VOC Contribution form Serves Source	
Zaho-Kai Haung, Chen-Jui Liang and Jeng-Jong Liang	
Combining Several Models to Predict Ambient Ozone Concentrations in a Specific Area.	
Chen-Jui Liang, Zaho-Kai Haung and Jeng-Jong Liang	. 347
Back Trajectory Analysis of Long-Range Transport of Air Masses Arriving at Gaborone	
(24.58°s, 025.93°e). Alfred S. Likuku, Gilbert Gaboutloeloe and Dikeme Kgaodi	
Trajectory Analysis of ²¹⁰ pb And ⁷ be in Surface Level Air In Scotland. <i>Alfred S. Likuku</i>	360
Lead Concentrations in Tree Rings Provide an Environmental Record of Industrial Activity	
in South West China. Xianguo Tuo, George Shaw, Zhengqi Xu, Keliang Mu	. 367
Source Identification Using a Coupled Diffusion Model with a Multi-Objective Genetic Algorithm. **Anis Khlaifi*, Anda Ionescu, Yves Candau*** **Candau*** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **Anis Khlaifi*, Anda Ionescu, Yves Candau** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-Objective Genetic Algorithm.** **The Coupled Diffusion Model with a Multi-	. 372
Preliminary Observations of Tropospheric Ozone Transport among Metropolitan Regions Of	
Sao Paulo State, Brazil. BOIAN C., ANDRADE M.F.	
The Integrated Multimedia Fate Model for Environmental Media Transport of Pollutants. Byeong Kyu	
Kwak, Jong Ho Kim and Jongheop Yi, Woon Gi Lee, Jun Hee Lee, Sun Ho Baek	. 383
Wastelliam Con Control Table	
Waste/Hazardous Gas Control Techniques Personal Gas Li Vi E ¹ Li Li II Vi	
Removing Alkali Metal Vapour in High Temperature Coal Gas. <i>Li Yi-li</i> ¹ , <i>Li Jian</i> ¹ , <i>Liang Wen-jun</i> ¹ , <i>Zhang Shu-jing</i> ¹ , <i>Jin Yu-quan</i> ¹ , <i>Wu You-qing</i> ² , <i>Gao Jin-sheng</i>	29/
Biodegradation of Hydrophobic Volatile Organic Compounds: Is it Possible?	. 304
Ashraf Aly Hassan, George A. Sorial	388
A Novel Method to Construct a Solid Oxide Fuel Cell Cathode Catalyst.	. 500
Jingbo Liu, Sajid Bashir, Anne Co and Viola Birss	. 389
Air Pollutant Monitoring	
Identification of Similar Air Pollution Behaviours Using Principal Component and Cluster Analyses.	200
J. C. M. Pires, F. G. Martins, S. I. V. Sousa, M. C. Pereira, M. C. M. Alvim-Ferraz	
The Impact of Ambient Heavy Metal Content before and After the Operation of a High-Tech Industri	ıal
Park. Cheng-Nan Chang, Wan-Li Cheng, Chih-Wei Hsu, Guan-Ching Wu,	200
Chao-An Hsueh	. 396
The Vertical Observations and Analysis of PM2.5, O ₃ and NO _x in Beijing and Tianjin City	401
in summer and autumn, 2006. <i>Sun Yang</i> , <i>Wang Yuesi</i>	. 401
Jun Yu, Shouqin Zhou	. 402
Jun 1u, Snough Zhou	. 102
Air Pollution Prevention and Management	
A Numerical Analysis of Gas Flow inside a Baghouse with CFD.	
Daekwun Ko, Kyesoon Hwang	. 403
Waste Heat Recovery and Air Pollution Control. Dan Stinger, Mario Romero	
BIO-ASSESSMENT AND TOXICOLOGY	
Human Exposure	
Effect of Exposure to Environmental Tobacco Smoke on the Human Body. <i>Jyotsna Lal</i>	408
Environmental and Social Factors Affecting the Prevalence of Tuberculosis in South-Western	
Cameroon. I. N. Ane-Anyangwe, T. Nkuo-Akenji, J. Fru-Cho, and V. P. K. Titanji,	
Wilfred Fon Mbacham	. 417

Anorexia Rat Induced by O,O,S-Trimethylphosphorothioate (OOS-TMP) and Endocannabinoids Lev Huang Lin Fang, Megumi Toyoshima, Kouji Harada, Akihiro Asakawa,	
Kayoko Inoue, Akio Koizumi	419
Assessment of Personal Exposure to Particulate Matter in Some Selected Microenvironments in I	
Shri Nath Singh, Rajnikant Sharma	
Identification of Biomarkers of Exposure to Tobacco Consumption in Oral Cancer Patient.	
K. Krishnamurthi, Arup Ratan Biswas, S. Saravana Devi, Raka Biswas,	
N. Vinayagmoorthy T. Chakrabarti, J.G. Hengstler, Matthias Hermes	422
Inhalation Exposure to a Water Disinfection By-Product, Chloroform during Household Stay.	
Hekap Kim, Soohyung Lee	423
Potential Children's Exposure to Metals at Playgrounds in Korea.	123
Jin-Hoi Koo, Hekap Kim, Byeong-Yeol Song, Youngji Han, Yong-Chul Jang	121
Jin-Hoi Koo, Hexap Kim, Dyeong-Teol Song, Toungh Han, Tong-Chai Jang	727
Bio-response	
Heavy Metals in <i>Arvicanthus Niloticus</i> as Bioindicator of Different Anthropogenic Activities in E	Faynt
Mohamed, H.M.	
Physiological And Biochemical Effects of Allelochemical EMA on Green Algae <i>chlorella pyreno</i>	
Yu Hong, Hong-Ying Hu	432
n' l d'	
Bio-accumumulation	
Influence of DOC on the Bioaccumulation of Di(2-Ethylhexyl)Phthalate By <i>chlorella vulgaris</i> .	
Li jinjuan, Chi Jie, Zhao Lin, Tan Xin	438
Identification of an Exposure Based Biomarker for Lead Using caenorhabditis elegans.	
Richard Troast, Gita Sudama, James D. Willett	444
Microbiology and Microbial Degradation	
The Isolation of a Hydrolyzed Polyacrylamide(HPAM) Degrading Bacteria Strain and Preliminar	У
Application for Wastewater Treatment Containing Polymer from Oil Field.	
Wei Li, Ma Fang, Yao Jie, Wei Ji-cheng, Li Yan-ping	451
Glycoconjugates as a Potential Decontaminant of Bacterial Spores.	
Samea Lone, Pierre Alusta, Olga Tarasenko	458
Persistence of <i>Escherichia Coli</i> O157:H7 in Two Contrasting Soils after Fumigation.	
A. Mark Ibekwe	465
Diversity of Pesticide Degrading Microbes Isolated from Groundwater Deposits and Soil in Finla	
Liu Xinxin, Pukkila Veera, Kontro (Suutari) Merja	
Characteristic and New Immobilized Method of Aniline-Degradation Bacteria Jh-9 at Low Temp	
SHAN Dan, MA Fang, WANG Chen, ZHANG Si	476
SHAN Dan, MA Fang, WANG Chen, ZHANG St	470
MODELING	
Environmental Simulation	
Modeling Oxygen Transfer into Vegetated Submerged Bed Constructed Wetland.	
Gilbert K. Gaboutloeloe, Shulin Chen, Michael E. Barber, Claudio O Stöckle	478
The Interactive Planning and Communication Software 'nofdp IDSS'. Axel Winterscheid,	
Christoph Hübner, Manfred Ostrowski, Peter Horchler, Stephan Rosenzweig,	
Volker Hüsing, Elmar Fuchs, Piet van Iersel, Jac Slikker	484
Investigation of an Air-Lift Oxidation Ditch by CFD Simulation.	
Long Fan, Nong Xu, Hongtao Pang, Hanchang Shi	491
Hierarchical Simulation of Biofilm Growth Dynamics in Porous Media.	171
George E. Kapellos, Terpsichori S. Alexiou, Stavros Pavlou, Alkiviades C. Payatakes	407
A Fuzzy Rule-Based Model to Simulate Contaminant Transport from a Pulsed Source	······

Mallika Senevirathna, Gopal Achari	503
Numerical Approach on Spatial Distributive Multi-Media Modeling with Emission Inventory.	
Jong Ho Kim, Byeong Kyu Kwak, Mi-sug Kim and Jongheop Yi, Chi Bum Shin,	
Hong Suk Yoo, Hyeon-Soo Park, Sun Woo Lee	509
Water Quality Modeling	
Univariate Time Series Analysis of Water Quality Data in Elbow River, Canada.	
Asela Senevirathna	510
A Comparative Study of Models for Longitudinal Dispersion Coefficient in Natural Streams.	
Naved Ahsan	517
Development of Screening Level Contaminant Transport Model.	
Sadashivamurthy. B. M, Mahadevaswamy. M., Ramesh. H. S	523
A Catchment-Based to Model Land Surface Irrigation Runoff. Ojekunle, Z. Olusheyi, Zhao Lin	530
Modeling of Oil Slick Movement in Estuarine Waters.	
Morteza Kolahdoozan, Mohsen Nagheeby	530
Improving the Geostatistical Estimation of Water Quality Using a River Metric	
Eric Money, Marc L. Serre, Gail Carter	531
A New Approach to Inverse Modeling For Retrieval of Coastal Water Quality Parameters.	
Sima Bagheri, Z.H. Michalopoulou, L. Axe.	532
G , , , , , , , , , , , , , , , , , , ,	

INTRODUCTION

The Third International Conference on Environmental Science and Technology 2007 was held in Houston, Texas, USA, August 6-9, 2007. The Program included 15 sections, containing 60 sessions with approximately 580 platform and poster presentations. This conference series strives to provide a platform for an extremely diverse group of environmental topics for engineers and scientists from around the world.

Authors of the presentations accepted for the program were invited to submit their papers to the Conference Organizing Committee. More than 200 papers were received and then reviewed by the editors, session chairs, and the members of the Scientific/Technical Committee of the conference. Those papers and abstracts accepted for publication were assembled into two volumes.

Sections are arranged basically according to their order listed in the original program except the sessions entitled *Bio-Assessment and Toxicology* and *Modeling*. This exception was made to balance the length of the two volumes.

Environmental Science and Technology 2007 (I) contains the following sections:

- Water Pollution and Water Quality Control
- Air Pollution and Air Quality Control
- Bio-Assessment and Toxicology
- Modeling

Sections included in *Environmental Science and Technology 2007 (II)*:

- Land (Soil, Waste Solid) Pollution and Remediation
- Ecosystem Restoration
- Wetlands
- Sediments
- Global Change
- Metals
- Organic Pollutants
- GIS, Data Managements, and Remote Sensing
- Environmental Analysis and Measurements
- Society and the Environment
- Environmental Policy and Management

45.00 - 40.00 - 35.00 - 45.00

ENVIRONMENTAL SCIENCE AND TECHNOLOGY 2007 (I)

We would like to especially thank the session chairs who were instrumental in the success of the conference.

The Conference was sponsored and organized by the American Academy of Sciences, with financial contributions from the co-sponsors and supporting organizations.

The papers in these proceedings represent the authors' results and opinions. No sponsors, cosponsors, participating organizations or editors should be construed as endorsing any specific contents or conclusions in the proceedings.

Steven K. Starrett, Ph.D., P.E., D.WRE Kansas State University

Jihua Hong, Ph.D. American Academy of Sciences

Robert J. Wilcock, Ph.D. National Institute of Water & Atmospheric Research New Zealand

> Qilin Li, Ph.D. Rice University

John Carson, Ph.D. Shaw Environmental Inc.

Samantha Arnold, Ph.D. Golder Associates (UK) Ltd UK