

# Zhonghong Walter Tang

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## EDUCATION

- Ph.D. Civil Engineering (Major: Environmental Engineering)** University of Delaware, Newark, Delaware, January, 1993.
- M.S. Civil Engineering (Major: Environmental Engineering)** University of Missouri-Rolla, Rolla, Missouri, December, 1988.
- M.S. Environmental Engineering**, Tsinghua University, Beijing, China, July, 1986.
- B.S. Sanitary Engineering**, Chongqing University of Civil and Architectural Engineering, Chongqing, China, July, 1983.

## EXPERIENCE

- 08/01-present **Associate Professor**, Department of Civil and Environmental Engineering, Florida International University, Miami, Florida.
- 09/09-05/10 **Fulbright Fellow**, Fulbright award from the J. William Fulbright Foreign Scholarship Board, The Fulbright lectureship supported one academic year teaching at Tallinn Technology University in Estonia.
- 01/06-05/06 **Associate Director**, Applied Research Center, Florida International University, Miami, Florida.
- 06/08-08/08 **Visiting Faculty**, Oak Ridge National Laboratory, Department of Energy, Oak Ridge, Tennessee
- 06/05-08/05 **Visiting Professor**, Department of Urban and Civil Engineering, Shenzhen Graduate School, Harbin Institute of Technology, Shenzhen, China.
- 06/04-08/04 **Research Fellow**, sponsored by the Japan Society for Promotion of Science (JSPS) from and hosted by the University of Tokyo, Tokyo, Japan.
- 12/92-08/01 **Assistant Professor**, Department of Civil and Environmental Engineering, Florida International University, Miami, Florida.
- 08/91-12/92 **Visiting Instructor**, Department of Civil and Environmental Engineering, Florida International University, Miami, Florida.
- Responsible for undergraduate and graduate teaching
  - Supervised master students in environmental engineering
  - Conducted non-funded research
- 06/89-08/91 **Research Assistant**, Department of Civil and Environmental Engineering, University of Delaware, Newark, Delaware.
- Worked on a U.S. Environmental Protection Agency research project of “Photocatalytic Oxidation of Toxic Organics by Semiconductors”
  - Initiated a research project of “Leachate Treatment by Fenton's reagent,” which provided a basis for a funded research project

- 01/89-05/89    **Teaching Assistant**, Department of Civil Engineering, University of Missouri-Rolla, Rolla, Missouri.
- Taught an undergraduate course: Laboratory for Water Analysis for Environmental Engineering
- 10/87-01/89    **Research Assistant**, Department of Civil Engineering, University of Missouri-Rolla, Rolla, Missouri.
- Worked on a U.S. EPA research project of “Maximizing Anaerobic Sludge Digestion by Fixed Film System--Phase I and Phase II”
  - Consisted of laboratory study for the first phase and pilot and prototype studies for the second phase
- 08/86-10/87    **Research Assistant**, Department of Civil Engineering, University of Missouri-Rolla, Rolla, Missouri.
- Worked on an E. I. Du Pont research project of “Adsorption Kinetics of Volatile Organic Compounds on Natural Soils”
- 09/83-07/86    **Research Assistant**, Department of Environmental Engineering, Tsinghua University, Beijing, China.
- Initiated and worked on a research project of “Flocculation Morphology-a New Approach to Investigate Flocculation Mechanism”
  - Won financial support from the China National Natural Science Foundation for the project
  - Supervised **3** undergraduates on their B.S. theses in this project

## **PROFESSIONAL REGISTRATION**

08/95-present    **Professional Engineer**, registered in Florida, P.E. license number: 0049542.

## **HONORS AND AWARDS**

**Fulbright Fellow**, Fulbright award from the J. William Fulbright Foreign Scholarship Board, The Fulbright lectureship supported one academic year teaching at Tallinn Technology University in Estonia from October 1, 2009 to June 1, 2010.

**Faculty Research Fellow**, HBCU/MEI Faculty Summer Research Participation Program: Scale-Dependent Metrics for Bioenergy: Land-Nutrient-Water Interactions under Future Energy Scenarios, Oak Ridge Institute for Science and Education, Science and Engineering Education, Oak Ridge National Laboratory, Oak Ridge, Tennessee, June 16 – August 16, 2008

**Research Fellow**, sponsored by the Japan Society for Promotion of Science (JSPS) from June 26, 2004 to August 28, 2004 and hosted by the University of Tokyo, Tokyo, Japan.

**Outstanding Chinese Scholar in South Region of the United States**, invited as a representative to participate a seminar hosted by the Chinese Ambassador in Houston, Texas,. December 1-2, 2001.

**State Guest**, invited as a state guest by the Chinese Educational Department for the celebration of the 50<sup>th</sup>

anniversary of China National Day, October 1, 1999. Participated in various celebration activities such as parade, reception by the vice pre-minister Nanqing Li, and symposium on high tech work force for the new millennium by the state educational department.

**Member in the Foreign Expert Delegation for State Sunshine Plan**, invited as an environmental expert of Chinese abroad in Chongqing Environmental Management and Planning Task Force Delegation; signed 15 research proposals and won 5 projects, September 1998; and had a reception by the vice pre-minister Nanqing Li.

**FIU Faculty Teaching Award:** The award is the highest award at FIU granted to a faculty who has made significant contribution in teaching and was selected by a panel of faculty senate colleagues, Florida International University, 1998.

**FIU Faculty Research Award:** The award is the highest award at FIU granted to a faculty who has made significant contribution in research and was selected by a panel of faculty senate colleagues, Florida International University, 1997.

**Teacher of the Year Award:** The award is from Civil Engineering Honor Society, Department of Civil and Environmental Engineering, Florida International University, 1997.

**China-Cornell Fellow:** The fellow is supported by a grant from the Rockefeller Foundation for exchanging scientific knowledge with the best Chinese universities. Among 200 applicants evaluated by a scientific Review Committee, 35 multi-year fellowships were recommended to a Fellow Selection Committee in China for final choice and placement. The program supports Fellows with international airfare, and provides limited supplies for them to conduct collaborative teaching and research for two to three years as an adjunct professor in a host university in China. The Chinese State Education Commission and the Chinese National Natural Science Foundation provides matching funds to cover costs in China from 1995 to 1998.

**Member of Chi Epsilon:** National Civil Engineering Honor Society, 1998.

**Who's Who in the World:** Recognition is in the 16th edition of *Who's Who in the World*, Marquis Who's Who (1998-1999), New Providence, NJ.

**Who's Who Among America's Teachers:** Recognition is in the fifth edition of *Who's Who Among America's Teachers*, 1998, Educational Communications, Inc., Lake Forest, Illinois.

**Who's Who in America:** Recognition is in the 1999 edition of *Who's Who in the World*, Marquis Who's Who (1998-1999), New Providence, NJ.

**Who's Who in Science and Engineering:** Recognition is in the fifth edition of *Who's Who in Science and Engineering*, Marquis Who's Who (1997-1998), New Providence, NJ.

**Distinguished Leadership:** The recognition is in the eighth edition of the *International Directory of Distinguished Leadership* by the governing board of the American Biographical Institute, Inc., Raleigh, North Carolina, 1998.

**Lifetime Achievement Award**, the governing board of the American Biographical Institute, Inc., Raleigh, North Carolina, 1998.

## **FUNDED RESEARCH PROJECTS**

### **1. As a Principal Investigator**

Hinkley Center for Hazardous and Solid Waste Management, Biodegradability Enhancement of Bioreactor Landfill Leachate with Fenton Processes, \$40,000, September 1, 2011 to August 31, 2012.

Opa-Locka City, Peak Flow Management for the City of Opa-Locka, \$20,000, from January 1, 2011 to December 31, 2012.

South Florida Water Management District, Automated Quality Analysis of Time Series Stage Data, \$24,000, from August 18, 2009 to September 30, 2009.

Opa-Locka City, Application to State Revolving Fund for Water Facility to Build Wastewater Treatment Plant for Opa-Locka City, \$30,000, from June 30, 2009 to May 31, 2010.

South Florida Water Management District, Regional Simulation Model Development, 6/2/2008 to 8/22/08, (Li-Kai Lin as Summer Intern) \$10,000.

South Florida Water Management District, Evaluate and Assess Flow Rating Equations at Water Control Structures, 6/2/2008 to 8/22/08, (Fang Wang as a Summer Intern), \$10,000.

South Florida Water Management District, Monte Carlo Simulation of Uncertainty in Computed Discharges for Submerged Orifice Flow at Gated Spillways, \$30,000, from June 30, 2007 to July 1, 2008.

South Florida Water Management District, Implementation of UA analysis in District's ADCP post-processing tool, \$8,500, from June 30, 2007 to September 1, 2007.

South Florida Water Management District, Technical and Economical Evaluation of Geosynthetic Products for Mitigation of Damaged Canal Banks, \$32,342, from May 30, 2007 to April 30, 2008.

Opa-Locka City, Feasibility Study of Water Treatment Plant for Opa-Locka City, \$14,200, from June 30, 2006 to May 31, 2008.

College of Engineering and Computing, Dean's Infrastructure Award, \$20,000, September 1, 2006 to June 30, 2007.

Environmental Protection Agency Minority Fellowship Program for Jeffrey Robert Czajkowski, Title: Applying Cutting Edge Environmental Economics to Establish an Optimal Level of Ecosystem Restoration and Economic Development in the Everglades National Park; \$75,000, November 2001 to November 2004.

The Institute of Telecommunication at FIU "Development of Automatic Wireless Water Meters", \$25,000, from May 2002 to August 2002.

The International Hurricane Center at FIU, "Public Hurricane Loss Model," \$50,000.00, from May 2001-May 2003

The International Hurricane Center at FIU "Hurricane Damage Assessment of Residential Houses Using Aerial Photographs", \$52,600.00 from May 2000-May 2001

Environmental Protection Agency, "Hydroxylation, Hole Oxidation, and Electron Reduction of Substituted Phenols by  $\text{TiO}_2/\text{UV}$ ," \$75,000.00 from August 1997-August 2000.

National Institute of Health, "QSAR Studies on Microtox Toxicity of Disinfection By-products and Inter-species Toxicity Correlations," \$99,354.00 from August 1, 1997 to July 31, 2000.

National Natural Science Foundation of China, "Cooperative Research and Teaching with Tsinghua University – Two Bases Model Project," ¥150,000.00 from May 1998 to July 2000.

FIU International Hurricane Research Center, “Quantitative Damage Assessment of Residential Houses by Hurricane Andrew Using Aerial Photograph,” \$1,200.00 from October 12, 1996 to February 28, 1997.

Pam American Survey, “Film Negative of Aerial Photograph of South Dade County after Hurricane Andrew,” \$20,000.00 Donation of the Aerial Photograph Negatives, February 28, 1997.

Environmental Protection Agency, “Hammett Studies on Oxidation Kinetics of Substituted Phenols by Advanced Oxidation Processes --  $\text{H}_2\text{O}_2/\text{Fe}^{2+}$ ,  $\text{H}_2\text{O}_2/\text{Fe}$  Powder, and  $\text{TiO}_2/\text{UV}$ ,” \$50,000.00 from August 1996-August 1998.

Rockefeller Foundation/Chinese National Science Foundation, a research fellow in “The China-Cornell/China Science Foundation Fellowship Program”. Each year, the Rockefeller Foundation supports \$5,000.00 for all the expenses of travel and supplies to conduct research in China and the China National Science Foundation supports \$5,000.00 for food, hotel and local travel for one month for May 18, 1994 to January 20, 1998.

Environmental Protection Agency, “Color Destruction of Textile Wastewater by High Energy Electron Beam and Fenton’s Reagent,” (Co-principal Investigators: O’Shea, K., and Cooper, W.), \$225,129.00 from October, 1993-September, 1996.

National Science Foundation:, “Photocatalytic Oxidation Kinetics of Priority Organic Pollutants by  $\text{TiO}_2$  - A Molecular Structure and Reactivity Study,” (Co-principal investigators: O’Shea, K., and Cooper, W.) \$50,073.00 from September 1993-August 1995.

FIU Research Foundation/FIU Provost's Office, “Molecular Structure and Activity Relationship in Photocatalytic Oxidation Kinetics of Substituted Phenols by  $\text{TiO}_2/\text{UV}$ ,” \$12,849.00 from June 1993 - August 1993.

## **2. Submitted as P.I. or Co-P.I.**

### **2.1 As a P.I.**

Tang, W. Z., Oxidation Kinetics and Mechanisms of Chemical Warfare Agent Simulants by Fenton’s Reagent, Summer Research Team Program for Minority Serving Institutions, Department of Homeland Security, \$50,000, May -June 2012.

Tang, W. Z., Quantification of Uncertainty in Strategy Environmental Assessment of Tri-Counties Transportation Modes Using Stochastic Modeling, Southeastern Transportation Research, Innovation, Development and Education Center (STRIDE), University of Florida, \$51,800, May 1-October 31, 2013 (Pre-proposal).

### **2.2 As a Co-P.I.**

Co-P.I., Appropriate Technologies for Oil Spill Response, Mitigation and Remediation in Vulnerable Coastal Areas (ATOS-RMR-VCA), \$306,727.69 (Total Budget: \$1,309,765.00, Berrin Tansel as P.I. and Omar Abdul-Aziz as Co-P.I.)

## **3. As a Co-principal Investigator**

FIU NSF Industry/University Cooperation Research center proposed research for SFMWD on automatic data quality control, SFWMD, \$24,000, from August 2009 to August 2010. (P.I. Dr. Naphtali Rische)

China Ministry of Education, “Industrial Wastewater Treatment by Electrical/Photocatalytic Membranes,” ¥25,000.00 from May 1999 to July 2000, (P.I.: Zhidong Wei and Bin Feng, Chongqing University, Chongqing, China)

China Ministry of Education, “Membrane Separation of Heavy Metals for Metallurgy Industrial Wastewater,” ¥28,000.00 from May 1999 to July 2000, (P.I.: Jiu Du, Chongqing University Chongqing, China)

China Ministry of Education, “Site Investigation of Health Impact of Disinfection By-Products,” ¥29,000.00 from May 1999 to July 2000, (P.I.: Jianpin Liu, The Third Medical University of Chinese Military, Chongqing, China)

China Ministry of Education, “Oil Seal Technology for Navigation Cargos,” ¥22,000.00 from May 1999 to July 2000, (P.I.: Jiaxiu Wang, Yi Zhou, Jianbo Cai, Chongqing University, Chongqing, China)

China Ministry of Education, “Water Ecological Development of Three Gorge Dam Using Finite Element Simulation,” ¥20,000.00 from May 1999 to July 2000, (P.I.: Xinan Liu, Wei Ye, Chongqing University, Chongqing, China)

China Ministry of Education, “Molecular Structure and Activity Relationship in Predicting Toxicities of Toxic Pollutants in Chongqing City,” ¥30,000.00 from May 1999 to July 2000, (P.I.: Xinan Liu, Wei Ye, Chongqing University, Chongqing, China)

Environmental Protection Agency, “Priority Pollutant Fate, Control, and Prevention: An FIU Educational and Research Program,” (Dr. H. R. Fuentes as the P. I., Other Co-P.I.s: Dr. Vassilios A. Tsihrintzis and Dr. Shonali Laha), \$75,000.00 from August 1996-August 1998.

Environmental Protection Agency, “Graduate Education of Environmental Engineers and Scientists at FIU,” (P.I.: Dr. Hector R. Fuentes, Other Co-P.I.s: Dr. Berrin Tansel and Dr. Vassilios A. Tsihrintzis), \$100,000.00 from August 1993-August 1995.

## **RESEARCH INTERESTS**

Water resource engineering, hydraulic structures, uncertainty analysis in engineering design, physicochemical treatment processes; environmental applications of aquatic, catalytic, photocatalytic and colloidal chemistry; advanced oxidation processes for groundwater remediation; treatability of organic pollutants in different physicochemical processes; kinetics and mechanisms involved in these processes; environmental Molecular Structure and Activity Relationship (QSAR); QSAR in predicting toxicity of organic pollutants and fate in air water, and soil; internet database of QSAR models; environmental impact assessment; hurricane impact assessment using internet database, internet GIS, expert system, HTML, C++, and Java languages.

## **PROFESSIONAL ACTIVITIES**

**Chairman**, Sustainable Management of Landfill Leachate, FIU, 2/10/2012

**Invited Speaker**, Wave and Storm Damage on Earth Dam, Dam Safety Division, South Florida Water Management District, 4/21/2008

**Invited Speaker**, Real-time Decision Support System for Operation through Participatory Approach Using the WaterWare, Operation Department, South Florida Water Management District,

2/15/2008

**Invited Speaker**, QSAR in Risk Assessment of DBPs, College of Environmental Engineering, Tongji University, Shanghai, China on July 18, 2006.

**Joint Associate Professor**, serving as a Joint Associate Professor at Department of Public Health, School of Public Health, Florida International University, Miami, Florida, Since January, 2005.

**Visiting Professor**, serving as a visiting professor at Shenzhen Graduate School of Harbin Institute of Technology, Shenzhen, Guangzhou, the People's Republic of China, June 2005.

**Invited Speaker**, Nonthermal Plasma Technology for Destruction of VOCs at the University of Tokyo on July 14, 2004.

**Invited Speaker**, QSAR in Advanced Oxidation Processes at the Gumma University on July 22, 2004.

**Invited Speaker**, QSAR in Nonthermal Plasma Technology" the Advanced Institute of Science and Technology of Japan, on August 12, 2004

**Invited Speaker**, "Environmental QSAR" in the College of Environmental Resource and Engineering at Wuhan University, Wuhan, Hubei Province, China, on January 3, 2003. "Undergraduate Education System in the United States" at the Assembly of Undergraduate Education Leaders of Wuhan University, Wuhan, Hubei Province, China, on January 4, 2003.

**Invited Speaker**, "Environmental Impact Assessment in the United States" at the college of environmental sciences at Nankai University, Tianjin, China, on December 24, 2002.

**Invited Speaker**, "Progress in Advanced Oxidation Process" in the College of Chemical Engineering at Gansu Industry University, Lanzhou, Gansu, China, on December 29, 2002.

**Invited Speaker**, invited to offer a speech in the seminar serial at the Center for Applied Stochastics Research at Florida Atlantic University, Boca Raton, Florida. The title of the presentation is "Hurricane Damage Assessment of Residential Houses Using Aerial Photographs," November 27, 2000.

**Session Chair**, organized and chaired Session II of "Advanced Chemical Oxidation Processes," at *The 32nd Mid-Atlantic Industrial and Hazardous Waste Conference*, Sponsored by Eighteen Universities and Eight Industrial Companies, Rensselaer Polytechnic Institute, Troy, New York, (June 26, 2000).

**Visiting Professor**, serving as a visiting professor at Chongqing University, Chongqing, the People's Republic of China, September 1998.

**Invited Speaker**, "Water Industry in China and the USA", at Chongqing University, Chongqing, the People's Republic of China, September 1998.

**Visiting Professor**, serving as a visiting professor at Chongqing Jianzhu University, Chongqing, the People's Republic of China, September 1998.

**Invited Speaker**, "GIS Application in Water and Wastewater Industry", at Chongqing Jianzhu University, Chongqing, the People's Republic of China, September 1998.

**Invited Lecture**, invited to offer a speech at the seminar serial of Chemistry Department at Florida International University, Miami, Florida. The title of the presentation is "Molecular Structure and Activity Relationship in Advanced Oxidation Processes of Organic Pollutants", 1998.

**Session Chair**, organized and presided two sessions, "Waste Treatment by Chemical Reactions I" and "Waste Treatment by Chemical Reactions II," at *The IX Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Pittsburgh, Pennsylvania, September 15-17, 1997.

**Invited Lecture**, offered a lecture on "Environmental Impact of Hurricanes" at *the FIU Emergency Management and Hazard Mitigation Certificate Program*, FIU North Campus Conference Center, Miami, Florida, May 16, 1997.

**Session Chair**, organized and chaired two sessions, "Advanced Chemical Oxidation Processes for

Hazardous Waste Treatment” and “Advanced Chemical Oxidation Processes for Textile Waste Treatment,” at *The VIII Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Birmingham, Alabama, (September 9-12, 1996).

**Member of Academic Steering Committee**, Serving the academic steering committee for FIU International Hurricane Center.

**Program Manager**, Serving as the program manager of environmental impact assessment of transportation projects for the Lehman Center for Transportation Research at FIU.

**Session Chair**, organized and chaired two sessions, “Advanced Chemical Oxidation Processes for Hazardous Waste Treatment” and “Advanced Chemical Oxidation Processes for Textile Waste Treatment,” at *The VII Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Atlanta, Georgia, (September 19-21, 1995).

**Session Chair**, organized and chaired Session III of “Advanced Chemical Oxidation Processes,” at *The 26th Mid-Atlantic Industrial and Hazardous Waste Conference*, Sponsored by Eighteen Universities and Eight Industrial Companies, Newark, Delaware, (August 7 - 10, 1994).

**Session Chair**, organized and chaired the Session C1 of “Industrial Wastewater Treatment,” at *The International Conference and exhibition on Water and Wastewater*, Sponsored by the Chinese Society of Civil Engineers, Beijing, China, (July 11, 1994 - July 16, 1994).

**Session Chair**, organized and chaired two sessions 345 and 425 of “Advanced Chemical Oxidation Processes for Hazardous Waste Treatment I and II,” at *The VI Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Atlanta, Georgia, (September 19-21, 1994).

**Specialist**, served on the Specialist Group on Pulp and Paper Industry Wastewater Treatment and Environmental Effects, International Association on Water Quality, 1997.

### **REVIEWER FOR ACADEMIC JOURNALS**

- \* Environmental Science and Technology
- \* Journal of Environmental Engineering (ASCE)
- \* Water Research
- \* Chemosphere
- \* Journal of Hazardous and Toxic Materials
- \* Journal of Hazardous Wastes
- \* Journal of Waste Management
- \* Environmental Technology
- \* Research on Chemical Intermediates
- \* Journal of Environmental Science and Health
- \* Advances in Environmental Research
- \* Soil and Sediment Contamination: an International Journal
- \* IEEE Transactions of Industry Applications
- \* Journal of Water Resource Management
- \* Environmental Progress

### **REVIEWER FOR PROPOSALS**

A NSF research proposal entitled “Environmentally Safe Destruction of Chlorinated Aromatic Compounds by a Novel Photo-thermal Process” for \$300,000.00 was reviewed. The proposal was



submitted to NSF Biological Systems Division of Engineering Directory.

Reviewed a proposal submitted to the National Research Council Twinning Program. It entitled “Kinetics and Mass Transfer Studies of the Chemical Oxidation of Phenolic Pollutants from the Oil Shale Industry”.

Reviewed a proposal submitted to the Office of International Affairs of the National Research Council. Its entitle is “Photocatalytic Degradation of Phenols on Nanocrystalline TiO<sub>2</sub>”.

### **PROFESSIONAL AFFILIATIONS**

- \* International Association on Water Quality
- \* Water Environmental Federation
- \* American Water Works Association
- \* Association of Environmental Engineering Professors
- \* South Florida Association of Environmental Engineers
- \* American Chemical Society

### **ADVISING**

#### **1. Post-doctoral Research Projects**

01/11-present **Research Project with Dr. Shrawan Singh**

- Biodegradability Enhancement of Bioreactor Landfill Leachate with Fenton Processes, September 1, 2011 to August 31, 2012

10/94 -- 09/96 **Research Projects with Dr. Huren An**

- Health Risk Assessment of Disinfection By-products in Drinking Water by QSAR Analysis
- Validation of the Extrapolations from Animal Toxicity Data of Pesticides to Human Health Risk Assessment by QSAR Analysis
- Hydroxylation vs. Hole Oxidation in TiO<sub>2</sub> Mediated Photodegradation of Substituted Phenols through QSAR Studies
- Development of an Interactive, Multimedia, and Multilingual Pollution Prevention Information System for the Americas

04/95 -- 03/96 **Research Projects with Dr. Xihui Zhang**

- QSAR Studies on Photocatalytic Oxidation of Substituted Phenols in Natural Waters Containing Iron Complexes
- QSAR Studies on Catalytic Oxidation of Substituted Phenols by Fenton's Reagent
- Coupled Adsorption-Oxidation Mechanisms of Substituted Phenols by H<sub>2</sub>O<sub>2</sub>/Iron-Powder System through QSAR Studies

09/95 -- 04/96 **Research Projects with Dr. Qi Zhou**

- Assessment and Management of Environmental Impact Associated with Hurricanes
- Development of Real-time Prediction Package for Solid Wastes Generated by Hurricanes

- Development of Real-time Prediction Package for Water Quality Affected by Storm Surge During Hurricanes

#### **4. Doctoral Dissertation**

Fang Wang, “Monte Carlo Simulation of Uncertainty in Estimating Flow Rate for Submerged Orifice Flow at Gated Spillway” (Graduated in June 2009)

Rena Chen, “Disinfection By-products Stage II Rules and Its Implementation for Dade County Water and Sewer Department” (Graduated in June 2009)

Hongwei Yang, “Studies on Anaerobic Biodegradability of Organic Compounds and Quantitative Structure-Biodegradability”, Department of Environmental Engineering, Tsinghua University, Beijing, China, October 2002. (Co-advisor with Professor Zhanpeng Jiang at Tsinghua University, Beijing China).

#### **2. Opponent for Ph.D. Dissertation**

Oliver Jarvik, Intensification of Activated Sludge Process – the Impact of Ozone and Activated Carbon, Department of Chemical Engineering, Tallinn Technical University, Tallinn, Estonia, June 19, 2011

Karin Pachel, Water Resource, Sustainable Use and Integrated Management in Estonia, Department of Environmental Engineering, Tallinn Technical University, Tallinn, Estonia, June 21, 2010

#### **3. Master Theses**

Jose Antonio Polar, “Environmental Impact Assessment of Military Training Activities” (August 20, 2004)

Jeffrey Robert Czajkowski, Economic Analysis of the Florida Everglades Restoration of Ecosystem, November 21, 2003.

Junshun Huang, “Environmental Site Assessment in Wagner Creek river Basin Clean Up Project”, (November 2003)

Joy Ashby, “An Interactive Environmental Site Assessment Audit for Wagner Creek river Basin Clean Up Project” (November, 2003)

Avinash Mittapalli, Automatic Hurricane Damage Assessment System, M.S. in Computer Science, Co-advisor: Shen, Shu-Ching, (November, 2003)

Sondwip Dhar, “Hurricane Damage Mechanisms on Residential Houses Using Aerial Photographs,” (August 26, 2002)

Taweeporn Fongtong, “Risk Assessment of Community Generated Hazardous Wastes in Thailand Using GIS,” (Graduated in December, 1999)

Prashant Sham Jawalikar, “Interactive Internet Database of Disinfection By-Products Using Microsoft

Development Tools,” (Graduated in December, 1999)

Tzai-Shian Rax Jung, “QSAR Models for Oxidation Rate Constants of Organic Compounds by UV/H<sub>2</sub>O<sub>2</sub> Process” (Graduated in December, 1999)

Ricardo Martinez, “QSAR Models for Oxidation Rate Constants of Organic Compounds by O<sub>3</sub>/UV Process” (Graduated in November, 1999)

Lucero Vaca, “Development of QSAR Models for Oxidation Rate Constants in Supercritical Water Oxidation” (Graduated in September, 1999)

Sangeeta Dulashia, “Molecular Structure and Reactivity Correlations in Catalytic Oxidation of Azo Dyes by H<sub>2</sub>O<sub>2</sub>/Fe Powder” (Graduated on April 30, 1998)

Todd Hendrix, “Molecular Structure and Reactivity Correlations in Catalytic Oxidation of Azo Dyes by TiO<sub>2</sub>/UV” (Graduated on April 30, 1998).

Jiun-Jia Hsu, “Correlation Analysis of Structure Damage with Wind Predictors” (Graduated on August 30, 1998).

Angela Pierotti, “Molecular Structure and Activity Relationship in Predicting Toxicities of Disinfection By-Products” (Graduated in December, 1998).

Santiago Torrijos Oro, “Real-time Assessment of Solid Debris of Hurricanes Using Web-based GIS, HTML, C++, and Java Computer Languages” (Graduated in August, 1998).

Stephanie Tassos, “Oxidation Kinetics and Mechanisms of Trihalomethanes in Drinking Water by H<sub>2</sub>O<sub>2</sub>/Fe<sup>2+</sup>,” Other Committee Members: Drs. H. R. Fuentes, W. C. Cooper, and J. C. Ireland, Graduated on 04/02/1995.

Rena Chen, “Oxidation Pathways of Aqueous Solutions Containing Commercial Dyes by H<sub>2</sub>O<sub>2</sub>/Iron Powder System,” Other Committee Members: Drs. H. R. Fuentes and W. F. Rogge, Graduated on 03/30/1995.

Fabius D. Foti, “Photocatalytic Oxidation Kinetics of Priority Organic Pollutants by TiO<sub>2</sub> -- A Molecular Structure and Reactivity Study,” Other Committee Members: Drs. H. R. Fuentes, K. E. O’Shea and W. J. Cooper, Graduated on 11/29/1993.

#### **4. Engineering Projects for Master Degree**

Vanessa Critina Caycedo, Monte Carlo Simulation of Uncertainty in Pipe Head Loss for Pump Station Design, (August 4, 2011)

Sai Sudheer Rao Ponugoti “QSAR Model Studies of Chlorophenols”, (August 11, 2008)

Dave Clark, Environmental Impact Assessment of Road Widening” (December 9, 2008)

Hui Shi, “Quantitative Structure Activity Relationship of LogP and Chlorine Content in Disinfection By-Products”, (August 2008)

Sai Sudheer Rao Ponugoti “QSAR Model Studies of Chlorophenols”, (August 11, 2008)

Antonia De Corral, "Modeling Nitrogen and Phosphorus in the Everglades National Park" (August 20, 2006)

Carlos A. Hernandez, "Privatization of the Water Utilities: The Latin American Experience," (August 20, 2003)

Dennis Maddox, "Privatization of Water Business in the United States" (August, 2002)

Edwards See, "GIS in Environmental Impact Assessment of Transportation Projects" (in progress)

Colin P. Henderson, "Environmental Impact of a Roadway Widening in Key West, Florida" (graduated in Fall, 2000)

Kennath Morris, "Dade County Emergency Management Plan for Critical Facilities Using Web-based GIS" (December 10, 1998).

Xiaodan Song, "Computer Modeling of Groundwater Distribution for Northwest Wellfield of Dade County, Florida," (Graduated December 10, 1998)

Charles Evers, "Accumulation of Mercury in Food Chain of Bay Species Adjacent to the Munisport Superfund Site," Other Committee Member: Drs. R. Jones and L. S. Quackenbush, Graduated on 04/30/1997.

Dean Radeloff, "Transmissivity of the Upper Portion of the Biscayne Aquifer of Dade County Florida," Other Committee Member: Dr. V. A. Tsihrintzis, Graduated on 12/10/1995.

Ou-Chun Wu, "Effect of pH on Molecular Structure and Reactivity Correlations in Photocatalytic Oxidation of Substituted Phenols by UV/TiO<sub>2</sub>," Other Committee Member: Dr. W. Rogge, Graduated on 12/12/1994.

Lou Chu-Jen, "Molecular Structure and Reactivity Correlations in Photocatalytic Oxidation of Explosive Chemicals of Nitrotoluene by UV/TiO<sub>2</sub>," Other Committee Member: Dr. H. R. Fuentes, Graduated on 12/02/1994.

Jann-Min Hwang, "Molecular Structure and Reactivity Correlations in Photocatalytic Oxidation of Substituted Phenols by UV/TiO<sub>2</sub> in Acidic Solution," Other Committee Member: Dr. H. R. Fuentes, Graduated on 04/15/1994.

Yee-Ling Chiang, "Effects of H<sub>2</sub>O<sub>2</sub>/Fe<sup>2+</sup> Ratio on the Oxidation Kinetics of Commercial Dyes by Fenton's Reagent," Other Committee Member: Dr. H. R. Fuentes, Graduated on 11/30/1993.

Bissy Vempala, "Effects of pH on the Oxidation Kinetics of Commercial Dyes by Fenton's Reagent," Graduated on 12/20/1992.

#### **4. Committee Member for Ph.D. Students**

Tarla TaMia Toomer, Development of Risk Based Treatability and Engineering Measures for Reducing Exposure to Lead Contaminated Media in the Miami Inner City, Florida, (Major Advisor: Dr. Berrin Tansel, Co-Advisor: Dr. Gasana, Janvier, and other committee member: Dr. Shonali Laha) Defensed on October 6, 2008.

Pornsri Suthanaruk, (Principal Advisor: Dr. H. R. Fuentes) “Modelling and Assessment of Water Quality Impacts from Small Spills in the Intertidal Zone of the Miami River, South Florida,” (August, 2002)

Jun Jia Hsu, (Principal Advisor: Dr. David Shen)

Lo Rosa Hsu, (Principal Advisor: Dr. David Shen) “Capacity Based Cost Modeling for Light Rail and Bus rapid Transit Systems,” (March 2005)

## **5. Committee Member for M.S. Students**

Amy Cook, Development of an Integrated Surface and Subsurface Model of Everglades National Park, (Spring 2012) Major Advisor: Dr. Hector Fuentes; Other Committee Member: Georgio Tachiev.

Luis G Perez, An Inventory of Wetland Soil and Sediment Properties and Basic Experimental Characterization, (Fall, 2011) Major Advisor: Dr. Hector Fuentes; Other Committee Member: Georgio Tachiev.

Erik Sibila, A Life Cycle Analysis and a Methodology for a Well Engineered, Economically Feasible, and Sustainable Design of a Pressure Piping System, (Fall, 2011) Major Advisor: Dr. Hector Fuentes; Other Committee Member: Georgio Tachiev.

Carolina Vargas, A Design Approach to Estimate Initial Recovery Efficiencies of an Aquifer Storage and Recovery System, (Fall, 2011)

Anil Kumar Reddy Nimmala, Runoff Quality Assessment in an Urban Residential Area using SWMM, Dr. Hector Fuentes, (Defended on May 1, 2009)

Jose Vasquez, Mercury Treatment at ORNL, Major Advisor: Dr. Berrin Tansel

John Grace, Mercury Model at the ORNL Site, Major Advisor: Dr. Hector Fuentes

Carolina Hernados, Major Advisor: Dr. Hector Fuentes

Edward Voronko, Use of Coagulants to Improve Settling Characteristics of Solids in Wastewater, (August 2, 2007) Major Advisor: Dr. Berrin Tansel

Celeste M. Diaz-Consul, “Integration of climate information and nonparametric KNN methods into decision-making and management of Lake Okeechobee” Major Advisor: Dr. Fernando Miralles-Wilhelm, (Ph.D. in progress)

Carmen Alicia Aponte, “Process Inventory of Pollution Prevention Overview for the Citrus Industry,” Major Advisor: Dr. H. R. Fuentes, (graduated in August, 2000)

Patricia Gomez, “A Benchmarking Study of Energy Consumption for Cordis, A Jphnson & Johnson Company, at Miami Lakes, Florida,” Major Advisor: Dr. H. R. Fuentes, (Graduated on March 8, 2000)

Oscar D. Carmona, “Pollution Prevention and Control Assessment of a Textile Printing Facility in South Florida,” Major Advisor: Dr. H. R. Fuentes, (Graduated on March 2, 2000)

Jorge Eurico Ribeiro Matos, “Watershed Modeling: Application of SWRRBWQ - A Basin Scale

Simulation Model for Soil, Water Resources and Water Quality in Rural Areas,” Major Advisor: Dr. H. R. Fuentes, Graduated on June 10, 1997.

George DiCarlo, “Zeta Potential and Partitioning of Selected Contaminated in Aqueous Colloidal Suspensions,” Advisor: Dr. H. R. Fuentes, Other Committee Members: Drs. Kennath Furton, Rodolf Jaffe, (Graduated in December, 1997)

Oscar Ferreira, “Supercritical Fluid Extraction of PAHs in Contaminated Soils,” Major Advisor: Dr. H. R. Fuentes, Other Committee Members: Drs. Kennath Furton, Rodolf Jaffe, (Graduated in July, 1997)

Cindy Zhang, “Source Testing of Dual Fuel Powered Vehicles and Characterization of Size-segregated Ambient Aerosol,” Major Advisor: Dr. Wolfgang Rogge, Other Committee Member: Dr. Berrin Tansel, (Graduated in May, 1997).

David V. Kalen, “Destruction of Chemical Warfare Agents by High Energy Electron Beam Irradiation” Major Advisor: Dr. William Cooper, Other Committee Member: Dr. H. R. Fuentes, Graduated on 11/25/1992.

## **6. Independent Studies**

Rodolfo Armenta, “Analysis of Structural Failures of Houses,” (Spring, 1998)

Zhuoming Chen, “Application of GIS in Damage Assessment of Hurricanes on Residential Houses,” (Fall, 1997)

Rebecca Vieira, “Damage Assessment of Hurricanes on Critical Infrastructures,” (Fall, 1997)

Peter Kunen, “Damage Assessment Methodology of Buildings by Hurricanes” and “Real-time Assessment of Solid Debris of Hurricanes” (Summer, 1996).

Law, Brian Neil, “Assessment of Environmental Impact Associated with Hurricanes” (Fall, 1995).

Avino, Ernesto Luis, “Development of Methodology for Environmental Site Assessment for Dry Cleaner Facilities” (Fall, 1995).

Echegaray, Oscar, “Methodology Development for Environmental Site Assessment for Gas Stations” (Fall, 1995).

Ronald R. Eyma, “A Comparative Study of Color Removal by Fenton’s Oxidation, Activated Carbon Adsorption and Alum Coagulation” (Fall, 1992).

Bertisabel M. Sevilla, “Remediation of PCB Contaminated Soils by Fenton’s Reagent” (Fall, 1992).

## **7. Design Projects**

Design of Sewer Pump Lift Station #9 for city of Opa-locka, Miami, Florida, (Fall, 2010)

Design of Wastewater Treatment Plant for city of Opa-locka, Miami, Florida, (Fall, 2008)

Design of Water Treatment Plant for city of Opa-locka, Miami, Florida, (Fall, 2006)

Design of a Water Treatment Plant for Petroleum Industry by Magaly Avellan, summer, 1996.  
Design and Construction of FIU Canoe for ASCE Competition by following students in spring, 1996:

Mark Spanioli, Angel Andre Chavarria, Babiola Dubuisson, David Fernadez, Said Fkira, William Garcia, Justin Peter Jesen, Djiems Jeune, Kathy Lajo, Gerardo Franci Romaguera, Omar Dario Sanchez, and John T. Schulte.

- Conceptual Design of Canoe with Three Options
- Optimization of Design Parameters for Canoe
- Calculation of Metacenter
- Optimization of Design Parameters for Canoe
- AutoCAD Drawing of Canoe
- Art Design of FIU Canoe
- Reduction of Drag Force by Surface Finishing
- Mechanic Strength of Aggregates for Canoe
- Testing of FIU Canoe

## **COURSES TAUGHT**

### **1. Graduate Courses**

- ENV-5930 Environmental Modeling
- ENV-5930 Environmental QSAR
- ENV-6615 Environmental Impact Assessment
- ENV-5062 Environmental Health
- ENV-6614 Environmental Risk Assessment
- ENV-5512 Water and Wastewater Analysis
- ENV-5512L Laboratory for Water and Wastewater Analysis
- ENV-6516 Advanced Treatment Systems
- ENV-5930 Special Topic: Hazardous Waste Treatment
- CWR-5235 Open Channel Hydraulics
- ENV-5930 Special Topic: Advanced Oxidation Technologies
- ENV-5930 Special Topic: Hurricane Impact Assessment

### **2. Undergraduate Courses:**

- CGN-4930 Open Channel Hydraulics
- ENV-4315 Solid Waste Management
- ENV-4401 Water Supply Engineering
- ENV-4401L Laboratory for Water Supply Engineering
- ENV-4551 Sewage and Wastewater Treatment
- CWR-3201 Fluid Mechanics
- CWR-3201L Laboratory for Fluid Mechanics
- Senior Design
  - Water Treatment Plant for the City of Opa-Locka
  - Wastewater Treatment Plant for the City of Opa-Locka
  - Design of Pump Station #9 for the City of Opa-Locka

## **TEACHING MATERIALS WRITTEN**

## **1. Laboratory Manuals Developed**

- Laboratory Manual for Water Supply Engineering
- Laboratory Manual for Fluid Mechanics

## **2. Textbooks in Developing**

- Quantitative Structure and Activity Relationship in Environmental Engineering Processes (500 pages)
- Hurricane Impacts: Prevention, Assessment and Mitigation (420 pages)
- Environmental Impact Assessment (550 pages)

## **GRADUATE DIRECTOR FOR ENVIRONMENTAL ENGINEERING**

05/95-2004     **Graduate Director for Environmental Engineering**, Department of Civil and Environmental Engineering, Florida International University, Miami, Florida.

- Recruited **25** new graduate students

08/92-08/93     **Graduate Director for Environmental Engineering**, Department of Civil and Environmental Engineering, Florida International University, Miami, Florida.

- Recruited **20** new graduate students

## **SERVICE TO THE UNIVERSITY, COLLEGE, AND DEPARTMENT**

- Vice Chairman, Faculty Council on Governance for the College of Engineering since 2011
- Member, Search and Screening Committee for Environmental Engineering Professor in CEE in 2010
- Member, University Sabbatical Committee since 2008
- Chairman, Dean's Award Committee since January 2005
- Chairman, Order of Engineer since January 2003-2005
- Member, Faculty Council on Governance for the College of Engineering since 2004
- Coordinator for Professional Engineering Review Course since 2004
- Editor for Departmental Newsletter from 2002 to 2005
- Search and Screening Committees for three Public Health Professors in 2005
- Search and Screening Committee for Water Resource Professor in 2005
- Search and Screening Committee for the Departmental Chairman in 2004
- Asian Studies Program Coordinating Committee since 1996
- University Radiation Control Committee since 1996
- College Ad Hoc Committee for Faculty Government in 2002
- College Space Committee in 1996
- College Machine Shop Committee since 1995
- Departmental EIT Committee in 1995
- Departmental Vision Committee in 1995
- Departmental Equipment Committee in 1994
- Departmental Brochure Committee in 1994



- Departmental Search and Screening Committee for an Environmental Faculty in 1993
- Departmental Search and Screening Committee for an Environmental Faculty in 1994

## **CONSULTING EXPERIENCE**

- 09/91-12/91     **Consultant**, provided engineering consultation to the E.K.M.A. Environmental Management, Inc., Miami, Florida, on designing a remediation system for removing NH<sub>3</sub> at the Munisport Superfund Site, Miami, Florida.
- 09/89-08/91     **Consultant**, investigated the treat-ability of leachate by Fenton's reagent for the Delaware Solid Waste Authority. Received funding for a research project at the University of Delaware based on the preliminary results

## **PUBLICATIONS**

### **1. Books**

Tang, W. Z. *Physicochemical Treatment of Hazardous Wastes*, Lewis Publishers, Boca Raton, FL, 2004.

Zhonghong Tang (with Yingxie Wang, **Zhonghong Tang**, Peihua Shen, and Jingyang Han), *User's Guide of HTML - Introduction to Web Page Design* (in Chinese) Internet Series, Tsinghua Press, Beijing, China, 1997.

### **2. Book Chapters**

Tang, W. Z. and Pierotti, A. J., "WWW Database of Disinfection By-Product Properties and Related QSAR Information," Chapter 14 in Quantitative Structure Activity Relationships (QSARs) for Pollution Prevention, Toxicity Screening, Risk Assessment and Web Applications, Walker, J. D. (Ed), SETAC Press. Pensacola, FL, USA (2003), pp189-197.

Tang, W. Z. and Todd Hendrix, "Development of QSAR Models to Predict Kinetic Rate Constants for Elementary Hydroxyl Radical Reactions" Hazardous and Industrial Waste Proceedings, 32nd Mid-Atlantic Conference: Proceedings of the Thirty-second Mid-Atlantic Industrial and Hazardous Waste Conference, June 26-28, 2000, Department of Environmental and Energy Engineering, Rensselaer Polytechnic Institute, Troy, NY] Edited By James Kilduff, Kilduff E. Kilduff, Simeon Komisar, Marianne Nyman, Published by CRC Press, 2000, ISBN 1587160269, 9781587160264, 914 pages.

### **3. Paper in Refereed Journals**

#### **3.1 Published**

Walter Z. Tang, (With Val S. Frenke, Gregg Cummings, Dennis E. Scannell, Walter Z. Tang, Krishnanand Y. Maillacheruvu, Food-Processing Wastes-Literature Review, Journal of Water Environmental Federation, 2011.

Walter Z. Tang and Fang Wang, Chlorine Effect on Quantum Molecular Descriptors of Disinfection By-Products-Chlorinated Alkanes, Chemosphere, 78 (2010) 914-921.

Walter Z. Tang, (With Val S. Frenke, Gregg Cummings, Dennis E. Scannell, Walter Z. Tang, Krishnanand Y. Maillacheruvu, Food-Processing Wastes-Literature Review, Journal of Water Environmental Federation, 2010.

Tang, W. Z., Wang, F., Miralles-Wilhelm, F., and Damisse, E., Uncertainty Analysis of Rating Equations of Submerged Orifice Flow at Gated Spillway, the Conference on Reliability and Quality in Design, the International Society of Science and Applied Technologies (ISSAT) and the IEEE Reliability Society, August 6-8, 2009, San Francisco, California, USA. 165-169, 2009.

Walter Z. Tang, (With Val S. Frenke, Gregg Cummings, Dennis E. Scannell, Walter Z. Tang, Krishnanand Y. Maillacheruvu, Food-Processing Wastes-Literature Review, Journal of Water Environmental Federation, 2009.

Walter Z. Tang, (With Val S. Frenke, Gregg Cummings, Dennis E. Scannell, Walter Z. Tang, Krishnanand Y. Maillacheruvu, Food-Processing Wastes-Literature Review, Journal of Water Environmental Federation, 80:10, 1458-1480, 2008.

Tang, W. Z., (Shu-Ching Chen, Shyu, M. L., Zhang, C., Tang, W. Z., Zhang, K.), Damage Pattern Mining in Hurricane Image Databases, *Proceedings of the 2003 IEEE International Conference on Information Reuse and Integration (IRI-2003)*, Smari, W. W. Ed., 227-234, Las Vegas, NV, October 27-29, 2003.

Tang, W. Z., (with Yang Hongwei, Jiang Zhanpeng, and Shi Shaoqi, and Tang, W. Z.), "INT Dehydrogenase Activity Test for Assessing Anaerobic Biodegradability of Organic Compounds," *Ecotoxicology and Environmental Safety*, Vol. 53, No. 3, pp 416-421. (November, 2002)

Tang, W. Z. (with Zidong Wei, Fei Yin, Jun Tan, Wanguo Hou, and Tang, W. Z.) *Advances of Photocatalytic Oxidation Techniques Based on TiO<sub>2</sub>*, Chemistry (Japanese), 2001 Vol.64 No.2 P.76-80

Tang, W. Z., (with Jiang Zhanpeng, Yang Hongwei, Guan Yutao, Pierotti, A. J., and Tang, W. Z.), "Chlorine Effect on Molecular Descriptors of Disinfection By-Products," *Environmental Science*, Vol. 21, No. 5, pp 51-54. (September, 2000)

Tang, W. Z., (with Yang Hongwei, Jiang Zhanpeng, Guan Yutao, Pierotti, A. J., and Tang, W. Z.), "Correlations Between SDWA Standards and Health Advisories Concentrations of DBPs and Molecular Descriptors," *Water and Wastewater Engineering*, Vol. 26, No. 1, pp. 22-25 (January, 2000)

Tang, W. Z. (with Jiang Zhanpeng and You Zuoliang, Tang, W. Z.), "Advances in Study of Flocculation Morphology" Water and Wastewater Industry and Sustainable Development – in Honor of Professor Xu Baojiu's 80<sup>th</sup> Anniversary, Tsinghua University Press, Beijing, China, pp 64-71 (1998)

Tang, W. Z., and Todd Hendrix, "Development of QSAR Models to Predict Kinetic Rate Constants for TiO<sub>2</sub>/UV Photocatalytic Oxidation", Water and Wastewater Industry and Sustainable Development – in Honor of Professor Xu Baojiu's 80<sup>th</sup> Anniversary, Tsinghua University Press, Beijing, China, pp427-439 (1998)

Tang, W. Z., and Todd Hendrix, "Development of QSAR Models to Predict Kinetic Rate Constants for Elementary Hydroxyl Radical Reactions", Water and Wastewater Industry and Sustainable Development – in Honor of Professor Xu Baojiu's 80<sup>th</sup> Anniversary, Tsinghua University Press, Beijing, China, pp440-

451 (1998)

Tang, W. Z. and Stephanie Tassos, "Oxidation Kinetics and Mechanisms of Trihalomethanes by Hydrogen Peroxide and Iron Systems," *Water Research*, 31, 1117-1125, (1997).

Tang, W. Z., Zhihua Zhang, and Huren An, M. O. Quitana, and D. F. Torres, "UV/TiO<sub>2</sub> Photodegradation of Azo Dyes," *Environmental Technology*, 18, 1-12, (1997).

Tang, W. Z. and Huang, C. P., "Stoichiometry of Fenton's Reagent in the Oxidation of Chlorinated Aliphatic Organic Compounds," *Environmental Technology*, 18, 13-23, (1997).

Tang, W. Z., Radeloff, D. F., and Tsihrintzis, V. A., "Transmissivity of the Upper Portion of the Biscayne Aquifer of Dade County Florida," *Hydrological Science and Technology*, 12, 71-82, (1997).

Tang, W. Z. and Rena Z. Chen, "Degradation Kinetics and Mechanisms of Commercial Dyes by H<sub>2</sub>O<sub>2</sub>/Iron Powder System," *Chemosphere*, 32(5), 947-958 (1996).

Tang, W. Z. and Huang, C. P., "Oxidation Kinetics and Mechanisms of 2,4-Dichlorophenol by Fenton's Reagent," *Environmental Technology*, 17, 1371-1378 (1996).

Tang, W. Z. and Huang, C. P., "An Oxidation Kinetic Model of Unsaturated Chlorinated Aliphatic Compounds by Fenton's Reagent," *Journal of Environmental Science and Health*, A31 (10), 2755-2775, (1996).

Tang, W. Z. and Huang, C. P., "Effect of Chlorine Content of Chlorinated Phenols on Their Oxidation Kinetics by Fenton's Reagent," *Chemosphere*, 8, 1621-1635 (1996).

Tang, W. Z. (with Huren An, Yi Qian, Xiasheng Gu, Tang, W. Z.), "Biological Treatment of Dye Wastewaters Using an Anaerobic-Oxic System," *Chemosphere*, 33 (12), 2533-2542, (1996).

Tang, W. Z. and Huang, C. P., "Effect of Chlorine Position of Chlorinated Phenols on Their Dechlorination Kinetics by Fenton's Reagent," *Waste Management*, 15 (8), 615-622, (1996).

Tang, W. Z. and Huang, C. P., "Photocatalytic Oxidation Pathways of 2,4-dichlorophenol by CdS in Acidic and Basic Aqueous Solutions," *Water Research*, 29, 745-756 (1995).

Tang, W. Z. and Huang, C. P., "The Inhibitory Effects of Thioacetamide on CdS Dissolution during Photocatalytic Oxidation of 2,4-dichlorophenol," *Chemosphere*, 30 (7), 1385-1399 (1995).

Tang, W. Z. and An, H. R., "UV/TiO<sub>2</sub> Photocatalytic Oxidation of Commercial Dyes in Aqueous Solutions," *Chemosphere*, 31 (9), 4157-4170 (1995).

Tang, W. Z. and An, H. R., "UV/TiO<sub>2</sub> Photodegradation of C.I. Acid Blue 40 in Aqueous Solutions," *Chemosphere*, 31 (9) 4171-4183 (1995).

Tang, W. Z., (with Huang, C. P., and C. Dong, Tang, W. Z.) "Advanced Chemical Oxidation: Its Present

Role and Potential Future in Hazardous Waste Treatment,” *Waste Management*, 13, 361-377 (1993).

Tang, W. Z. and Jiang, Z. P., “Flocculation Morphology -- a New Approach to Investigate Flocculation Mechanism,” *Journal of China Water and Wastewater*, 3(5), 4-9, (1987).

## **2. Submitted**

Singh, S. K., and Tang, W. Z., Statistical Analysis of Optimum Fenton Oxidation Conditions for Landfill Leachate Treatment, *Chemosphere*, 2012.

Walter Z. Tang, (With Val S. Frenke, Gregg Cummings, Dennis E. Scannell, Walter Z. Tang, Krishnanand Y. Maillacheruvu, Food-Processing Wastes-Literature Review, *Journal of Water Environmental Federation*, 2011.

## **3. Conference Presentations**

Tang, W. Z., “Photocatalytic Oxidation of Halogen Substituted Meta-Phenols by UV/TiO<sub>2</sub> in Acidic and Basic Aqueous Solutions, Finish Conference of Environmental Science, Turku, Finland, May 5-6, 2011.

Tang, W. Z., Miralles-Wilhelm, F., Wang, F., Monte Carlo Simulation of Submerged Orifice Flow at Full Scale Gated Spillways, to be presented at the Conference on Reliability and Quality in Design, accepted by the International Society of Science and Applied Technologies (ISSAT) and the IEEE Reliability Society, August 6-8, 2009, San Francisco, California, USA. To appear in *International Journal of Reliability, Quality and Safety Engineering*, 2009.

Tang, W. Z., Miralles-Wilhelm, F., Wang, F., Uncertainty Analysis of Rating Equations of Submerged Orifice Flow at Gated Spillway, to be presented at the Conference on Reliability and Quality in Design, accepted by the International Society of Science and Applied Technologies (ISSAT) and the IEEE Reliability Society, August 6-8, 2009, San Francisco, California, USA. To appear in *International Journal of Reliability, Quality and Safety Engineering*, 2009.

Patrick Mulholland, Virginia Dale, and Walter Tang, Biofuel Crops: Impacts on Hydrology and Water Quality, Sustainability of Biofuels Workshop Bethesda by the US Department of Energy, Maryland, October 28, 2008.

Jeff Czajkowski and Walter Z. Tang, “Estimating the Economic Benefits of Improved Water Quality Through Housing Prices” presented at the EPA Science Forum—Collaborative Science for Environmental Solutions” hosted by the US EPA at the Hyatt Regency on Capitol Hill in Washington, DC. from May 4 to May 8, 2005.

Jeff Czajkowski and Walter Z. Tang, “Economic Analysis of the Florida Everglades Restoration” presented at the Science to Achieve Results (STAR) and Greater Research Opportunities (GRO) Fellowship Conference “Next Generation Scientists, Next Opportunities” hosted by the US EPA at the Hyatt Regency on Capitol Hill in Washington, DC. from October 11 to October 13, 2004.

Walter Z. Tang, “Damage Pattern Mining in Hurricane Image Databases, in *Proceedings of the 2003 IEEE International Conference on Information Reuse and Integration (IRI-2003)*, Smari, W. W. Ed., 227-

234, October, 2003.

Walter Z. Tang and Nauman Ahmed, "Development of Impact Models Using finite Element Analysis", the International Association for Structural Safety and Reliability Conference 2001, June, Newport Beach, California, 2001.

Walter Z. Tang and Stephen Leatherman, "Visualization of Flooding due to Hurricanes on FIU Campus Using GIS", Twenty-First Annual ESRI International User Conference, San Diego, California, July 9-13, 2001.

Tang, W. Z. and Angela Jones Pierotti, "Chlorine Effect on Molecular Descriptors of Disinfection By-products", the 11<sup>th</sup> SETAC Europe Annual Meeting, Madrid, Spain, May 6-10, 2001

Tang, W. Z. and Marcos Avellan, "Computer Simulation of Hurricane Winds' Effects on Manufactured Houses", XXIX IAHS World Congress on Housing, Ljubljana, Slovenia, May 21-25, 2001.

Tang, W. Z. and Colin P. Henderson, "Environmental Impact of a Roadway Widening in Key West, Florida", ICTPA Annual Conference, Miami, 2001.

Tang, W. Z., Santiago Torrijos Oro, and Carolyn Anderson, "An Internet GIS for Hurricane Vulnerability Analysis of Critical Facilities," *The Twenty-first ESRI International User Conference*, San Diego, California, July 9-13, 2001.

Tang, W. Z., and Todd Hendrix, "Development of QSAR Models to Predict Kinetic Rate Constants for TiO<sub>2</sub>/UV Photocatalytic Oxidation," *The Sixth International Conference on TiO<sub>2</sub> Photocatalytic Purification and Treatment of Water and Air*, Niagara Falls, Ontario, Canada, June 26-29, 2001.

Tang, W. Z., and Tzai-Shian Rax Jung, "QSAR Models for Oxidation Rate Constants of Organic Compounds by UV/H<sub>2</sub>O<sub>2</sub> Process," *The Seventh International Conference on Advanced Oxidation Technologies for Water and Air Remediation*, Niagara Falls, Ontario, Canada, June 26-29, 2001.

Tang, W. Z., and Manman Ahmed, "Development of Impact Models Using Finite Element Analysis," the International Association for Structural Safety and Reliability Conference, Newport Beach, California, June 17-22, 2001.

Tang, W. Z., and Manman Ahmed, "Computer Simulation of Hurricane Impacts on Residential Houses Using ALGOR Finite Element Analysis Software" *The XXIX IAHS World Congress on House*, International Association for Housing Science, Ljubljana, Slovenia, May 21-25, 2001.

W.Z. Tang and A.J. Pierotti, "Chlorine Effect on Molecular Descriptors of Disinfection By-Products," the SETAC Europe 11th Annual Meeting, *Society of Environmental Toxicology and Chemistry*, Madrid, Spain, May 6-10, 2001

Tang, W. Z., and Sangeeta Dulashia, "Stoichiometry of Fenton's Reagent in the Oxidation of Azo Dyes," *the 32<sup>nd</sup> Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Troy, New York, 2000.

Tang, W. Z., and Todd Hendrix, "Development of QSAR Models to Predict Kinetic Rate Constants for Elementary Hydroxyl Radical Reactions", *the 32<sup>nd</sup> Annual Mid-Atlantic Industrial and Hazardous Waste Conference*, Troy, New York, 2000.

Tang, W. Z. and Angela Jones Pierotti, "Development of A Website Containing QSAR Models Toxicities of Disinfection By-Products", *the 8<sup>th</sup> International Conference of QSAR in Environmental Sciences*, Maryland, 1998.

Tang, W. Z. and Angela Jones Pierotti, "Development of QSAR Models Toxicities of Disinfection By-Products", *the 3<sup>rd</sup> Annual STAR Graduate Fellowship Conference*, Arlington, Virginia, June 14-16, 1998.

Tang, W. Z., and Santiago Torrijos Oro, "Dissemination of Dade County Emergency Plan through Internet", *the 3<sup>rd</sup> Annual STAR Graduate Fellowship Conference*, Arlington, Virginia, June 14-16, 1998.

Walter Z. Tang and Todd Hendrix, "An Internet Database of Kinetic Rate Constants for Hydroxyl Radical Reactions and TiO<sub>2</sub>/UV Photocatalytic Oxidation", *the 3<sup>rd</sup> Annual STAR Graduate Fellowship Conference*, Arlington, Virginia, June 14-16, 1998.

Tang, W. Z., and Santiago Torrijos Oro, "Quantitative Damage Assessment of Residential Houses After Hurricane Andrew Using Aerial Photographs," *The International Congress on European Housing, International Association for Housing Science*, Sinaia, Romania, September 1 - 4, 1997.

Tang, W. Z., and Santiago Torrijos Oro, "Spatial Analysis of Damage on Residential Houses by Hurricane Andrew Using GIS," *The International Congress on European Housing, International Association for Housing Science*, Sinaia, Romania, September 1 - 4, 1997.

Tang, W. Z., and Santiago Torrijos Oro, "Quantitative Damage Assessment of Wind Shielding Effect on Residential Houses Using Aerial Photographs," *the International Congress on European Housing, International Association for Housing Science*, Sinaia, Romania, September 1 - 4, 1997.

Tang, W. Z., and Santiago Torrijos Oro, "Quantitative Assessment of Solid Debris Generation due to Residential House Damage After Hurricane Andrew Using Aerial Photographs," *The International Congress on European Housing, International Association for Housing Science*, Sinaia, Romania, September 1 - 4, 1997.

Tang, W. Z., and Todd Hendrix, "Adsorption Kinetics and Mechanisms of Azo Dyes onto TiO<sub>2</sub> Surface," *The Third International TiO<sub>2</sub> Photocatalytic Purification and Treatment of Water and Air*, Orlando, Florida, September 23-26, 1997.

Tang, W. Z., and Sangeeta Dulashia, "Oxidation Kinetics and Mechanisms of Azo Dyes by H<sub>2</sub>O<sub>2</sub>/Fe Powder," *The IX Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Pittsburgh, Pennsylvania, September 15-17, 1997.

Tang, W. Z., and Sangeeta Dulashia, "Stoichiometry of Fenton's Reagent in the Oxidation of Azo Dyes," *The IX Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Pittsburgh, Pennsylvania, September 15-17, 1997.

Tang, W. Z., Zhihua Zhang, and Huren An, "UV/TiO<sub>2</sub> Photocatalytic Oxidation of Azo Dyes," *The VIII Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Birmingham, Alabama, September 9-12, 1996.

Tang, W. Z., and Radeloff, D. F., and Tsihrintzis, V. A., "Aquifer Transmissivity Computations Based on Data from Pump-and Treat Facilities," *Proceedings of the North American Water and Environment Congress '96 (on CD-ROM)*, ASCE, June 22-28, 1996.

Tang, W. Z., and Rena Z. Chen, "The Role of Fe Dissolution in the Adsorption of Reactive Red 120 Dye by Iron Powder," *The VIII conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Birmingham, Alabama, September 9-12, 1996.

Tang, W. Z., and Stephanie Tassos, "Oxidation Kinetics and Mechanisms of Trihalomethanes by Hydrogen Peroxide and Ferrous Iron," *The VIII conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Birmingham, Alabama, September 9-12, 1996.

Tang, W. Z., Zhihua Zhang, and Huren An, "UV/TiO<sub>2</sub> Photocatalytic Oxidation of Basic Dyes," *The VII Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Atlanta, Georgia, September 19-21, 1995.

Tang, W. Z., and Rena Z. Chen, "Catalytic Oxidation Kinetics and Mechanisms of Commercial Dyes by H<sub>2</sub>O<sub>2</sub>/Iron Powder System," *The VII Conference of Emerging Technologies for Hazardous Waste Management*, American Chemical Society, Atlanta, Georgia, September 19-21, 1995.

Tang, W. Z., and Huang, C. P., "Oxidation Kinetics and Mechanisms of 2,4-Dichlorophenol by Fenton's Reagent," *Proceeding of the 26th Mid-Atlantic Industrial and Hazardous Waste Conference*, Newark, Delaware, 212-220 1994.

Tang, W. Z., and Huang, C. P., "Stoichiometric Requirements for H<sub>2</sub>O<sub>2</sub> and Fe<sup>2+</sup> During Oxidation of Chlorinated Aliphatic Organic Compounds," *Superfund XV*, Washington D.C., Nov. 29 - Dec. 1, 1994.

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