THE SIXTH INTERNATIONAL CONFERENCE ON SUSTAINABLE WATER ENVIRONMENT

July 29-31, 2010

UD Clayton Hall Conference Center
Newark, Delaware 19716

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Center for International Studies
Opening Session:
Harry W. Shenton, III. Chair, Department of Civil and Environmental Engineering
Patrick Harker, President, University of Delaware
Michael J. Chajes, Dean, College of Engineering

Keynote address:

**Water Sustainability: The Need for Enabling Research;** Paul L. Bishop; National Science Foundation

**Safe and Sustainable Water;** Charles I. Noss and Audrey Levine; US Environmental Protection Agency

Technical Session 1: Climate Change
Technical Session 2: Emerging Contaminants
Technical Session 3: Integrated Watershed Management
Technical Session 4: Water Conservation/Reuse
Technical Session 5: Water Infrastructures

**POSTER SESSION**

**Impacts of Climate Change on the Water Environment and Responses**
- Field observations of water quality changes as a function of temperature
- Laboratory observations of water quality changes as a function of temperature
- Risk assessment of water infrastructures in relationship to climate changes
- Pre-warning sensors/monitoring and control of harmful algal blooms
- Design and operation of water treatment facilities in responses to climate change
- Emergency response systems for water infrastructures

**Water Conservation and Reuse**
- Water use policy
- Leakage management
- Rain water harvest
- Reuse of “used” waters
- Recent advances in desalination technology
- Membrane technology
- Advanced oxidation technology
- Catalytic membrane and reaction technology
- Disinfection technology of next generation
- Case studies

**Water Infrastructure**
- Drinking water system
- Domestic wastewater system management
- Storm water runoff control systems and management practices
- New energy sources and systems for renewal of water infrastructures
- Case studies

**Integrated Watershed Management**
- Best management practices (BMPs)
- Soil erosion control
- Nutrient management
- Siltation dynamics and control
- Sediment materials as a natural resource
- Social-economic aspects of watershed management
- Total watershed assessment tools
- Case studies

**Emerging Contaminants**
- Fate, transport and transformation of emerging contaminants
- Innovative remediation and treatment technologies for the control of emerging contaminants
- Environmental implications of nano-materials
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Opening Session:
Time: July 29, 9:00 – 9:30 AM
Chair: Harry W. Shenton, III
Location: Auditorium
Harker, Patrick, President, University of Delaware
Chajes, Michael, Dean, College of Engineering

Keynote Session:
Time: July 29, 9:30 – 10:30 AM
Chair: Harry W. Shenton, III
Location: Auditorium

1. Climate Change (CC)

CC1: Climate and human impacts on the vulnerability coastal groundwater resources to salinization. Holly A. Michael, L.S. Feinson, L. Byron, and C. I. Voss, University of Delaware, USGS, USA

CC2: Long-term precursor changes in an upland reservoir. David A. Reckhow and Amanda P. Keyes, University of Massachusetts, USA

CC3: The impacts of climate changes on water qualities of Dy- yu Creek watershed, Taiwan. Jen-Yang Lin, Tsung-Hung Hsu, and Shaw L. Yu, Taipei University of Science and Technology, Taiwan


Time: July 29, 1:00 – 3:05 PM
Chair: David A. Reckhow
Room: 121

CC5: Case study of a BioMF mobile water treatment system in Taiwan after Typhoon Morakot of 2009. Shanshan Chou, Ren-Yang Horng, Jason Hsia, and Chien-Hung Chen, Industrial Technology Research Institute, Taiwan

CC6: Impact of wastewater treatment processes on global climate change- Results of field-scale monitoring and global climate modeling. Linda Sohl and Kartik Chandran, Columbia University, USA

CC7: Impact of Typhoon Morakot on water environments of Gaoping River drainage basin in Southern Taiwan. Hsing-Lung Lien, Guo-Ping chang-Chien, Cheng-Di Dong, Ching Yuan, and Shu-Kuang Ning, National University of Kaohsiung, Taiwan

CC8: Wastewater system asset management in a changing climate. Mary Cate Opila, and Nii Attoh-Okine, University of Delaware, USA

CC9: Reinforcing flood protection structures in the lowlands of Bangladesh: A case study in climate change adaptation. K.B. Sajjadur Rasheed, Independent University of Bangladesh, Bangladesh

Time: July 29, 3:20 – 5:05 PM
Chair: Holly A. Michael
Room: 121

CC10: Geoenvironmental and hydrological impact on Bao-Lai hot spring recreation area in Southern Taiwan by Typhoon Morakot: Environmental impact assessment revisited. Yuan Ching, Min-Hao Wu, Shu-Kuang Ning, and Hsing-Luen Lien, National University of Kaohsiung, Taiwan

CC11: Assessment of physico-chemical and microbiological quality of drinking water from disinfected water sources points to household water containers in selected communities of Akaki-. Mengestayhu Birhanu Akelat, Amhara Regional State of Health Bureau, Ethiopia

CC12: Modeling climate change impacts on nutrients loading in a watershed in Taiwan. Chiueh, Pei-Te, Ning-Hsien Chung, Zong-Min Yang, and Shang-Lien Lo, National Taiwan University, Taiwan


2. Emerging Contaminants (EC)

EC1.1: Emerging contaminants in drinking water: Occurrence, risk, control, and regulatory approach. Craig D. Adams and Alan Roberson, University of Kansas, USA

EC1.2: How to comprehensively assess the toxicity of complex sediment contaminations or emerging materials and chemicals? Christian E.W. Steinberg, Ralph Menzel, Steffen Herrmann, and Stephen Stürzenbaum, Humboldt Universität zu Berlin, Germany


EC1.4: An integrated approach to evaluate emerging contaminants in drinking water. Wilson Jardim, Universidade Estadual de Campinas, Brazil

2.2 PPCP

Time: July 29, 1:00-3:05 PM
Chair: Sang Don Kim
Room: 125

EC2.1: Treatment and photochemical fate of pharmaceuticals in water. William J. Cooper, University of California at Riverside, USA

EC2.2: Degradation of endocrine disrupting chemicals during activated sludge reduction by ozone. Zhimin Qiang, and Yafeng Nie, Chinese Academy of Sciences, China

EC2.3: Reactions of chlorine dioxide and free chlorine with fluoroquinolone and tetracycline antibiotics under water treatment conditions. Ching-Hua Huang, Pei Wang, and Alan Roberson, University of Kansas, USA

EC2.4: Degradation of tetracycline by ozonation in combination with ultrasonic irradiation in a rectangular air-lift reactor.
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Yan Wang, Daobin Zhang, and Hui Zhang, Wuhan University, China

Time: July 29, 3:20 – 5:05 PM
Chair: Tsair-Fuh Lin
Room: 125

EC2.5: Polychlorinated dibenzo-para-dioxin (PCDDs) in fish from the Delaware River Basin. Richard Greene, Delaware Department of Environmental and Natural Resources, USA

EC2.6: Application of A2O to degradation of residual pharmaceuticals in wastewater. Jae Eun Park, Young Min Hong, Sun Kyong Shin and Hyunook Kim, University of Seoul, Korea

EC2.7: Ultrasound enhanced heterogeneous activation of persulfate by magnetite for the degradation of tetracycline in water. Liwei Hou, Daobin Zhang, and Hui Zhang, Wuhan University, China

EC2.8: Fate of nonylphenol ethoxylates in two municipal wastewater treatment plants, Northern China. Dawen Gao, Junxue Guan, Yifan Li, and Nanqi Ren, Harbin Institute of Technology, China

2.3 Nanomaterials
Time: July 30, 8:30 – 10:05 AM
Chair: Ching Hua Huang
Room: 125

EC3.1: Nanotechnology: Extending towards societal aspects. Nora Savage, US Environmental Protecting Agency, USA

EC3.2: Aggregation kinetics of TiO$_2$ nanoparticles in water. Ji Hu, D.M. Wang, and Jianmin Wang, Missouri University of Science and Technology, USA

EC3.3: Assessing the roles of iron-doping and water chemistry on the stability and antibacterial activity of ZnO nanoparticles in fresh water. Minghua Li, Suman Pokhrel, USA

EC3.4: Photocatalytic degradation of methyl orange by novel Bi-based catalyst Bi$_2$TaO$_4$ under visible-light irradiation. Jing Fan, Zhi-Guang Xie, Ke-Lei Zhang, Xing-Yun Hu, Jian-Ji Wang, and Gui-fen Zhu, Henan Normal University, China

Time: July 30, 10:20 – 12:05 PM
Chair: Say leong Ong
Room: 125

EC3.5: Particle surface effects in titanium dioxide and quartz-related nanoparticle pulmonary toxicity. David Warheit, du Pont Company, USA

EC3.6: The role of surface accumulation of toxins on nanotoxicology. D.M. Wang, Ji Hu, and Jianmin Wang, Missouri University of Science and Technology, USA

EC3.7: The effect of nano CuO and MgO on activated sludge. Liu, Guoqiang, Demin Wang, and Jianmin Wang, Missouri University of Science and Technology, USA

EC3.8: High arsenic adsorption capacity of sub-4 nanometer magnetite nanoparticles. Shu-Chi Chang, Yu-Han Yu, Chin-Ching Wu, Hao-Yun Lei, and Yao-Tung Lin, National Chung Hsing University, Taiwan

2.4 More Emerging Contaminants
Time: July 30, 1:00 – 2:40 PM
Chair: How Young Ng
Room: 125

EC4.1: Characterization and removal arsenic from groundwater in Chia-Yi, Taiwan. Yi-Fong Pan, Tsair-Fuh Lin and Husan-Hsien Yeh, National Cheng Kung University, Taiwan

EC4.2: DBP formation potential reduction by biofiltration. Hsin-hsin Tung, Gen-Shuh Wang, Bor-Jyh Chen, and Chia-Chen Wu, National Taiwan University, Taiwan

EC4.3: DBP removal: A new approach for DBP compliance. Yuefeng Xie, Pennsylvania State University, USA

EC4.4: Impact of sunlight and humic acid on the aggregation kinetics of nC$_6$0. Xiaolei Qu, Yu Sik Hwang and Qilin Li, Rice University, USA

Time: July 30, 1:00 – 2:40 PM
Chair: Yuefeng Xie
Room: 120

EC4.5: MAQUIS: A simple model of antibiotic resistance in the aquatic environment. Ferdinand L. Hellwegger, Xiaodan Ruan, and Sarah A. Sanchez, Northeastern University, USA

EC4.6: Degradation of 2,4-dinitrotoluene by persulfate activated with iron sulfides. Seok-Young Oh, Seung-Gu Kang, Jong-Gil Son, and Pei C. Chiu; University of Ulsan, Korea

EC4.7: perchlorate adsorption and electro-desorption on activated charcoal. Shih-Kai Chen, and Shi-Chern Yen, National Taiwan University, Taiwan

EC4.8: Feasibility analysis of electrocoagulation technology for removing nitrate. S.F. Cheng, Y.T. Tu, H. Chang, C.M. Kao, C.Y. Huang, and C.W. Chen, Chaoyang University of Technology, Taiwan

3. Integrated Watershed Management (IWM)

3.1 BMP
Time: July 29, 10:30 – 12:05 PM
Chair: Shaw L. Yu
Room: 122

IWM1.1: An environmental observing facility at Clear Creek, Iowa. J.V. Loperfido, M. Putney, C.L. Just, and J.L. Schnoor, University of Iowa, USA

IWM1.2: Stormwater BMP reliability for water quality treatment. Elizabeth Fassman, Auckland University, New Zealand

IWM1.3: Planning of LID-BMPs for urban runoff control: The case of Beijing Olympic Village. Haifeng Jia, Yuwen Lu, Jenny X. Zhen, and Shaw L. Yu, Qinhua University, Korea

IWM1.4: Bioretention for stormwater quality improvement in Texas: Removal effectiveness of Escherichia coli. Myung Hee Kim, Chan Yong Sung, Ming-Han Li, Kung-Hui Chu, Texas A&M University, USA

Time: July 29, 1:00 – 3:05PM
Chair: Elizabeth Fassman
Room: 122

IWM1.5: A physically-based model for bioretention cell hydrology and water quality. Shaw L. Yu, T. Andrew Earles, Yanyun Zhai, Xiaoyue Zhen and Jen-Yang Lin, University of Virginia, USA
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IWM1.6: Soil-aquifer-treatment in the mid-Atlantic: Is it disposal or reuse? A. Scott Andres, and Edward F. Walther, Delaware Geological Survey, USA

IWM1.7: Two rivers run through it: The Stony Brook Millstone Watershed Association. Michael Farewell, Farewell Mills Gatsch Architects, LLC., USA

IWM1.8: Optimal control of flood waters with sediment transport in Alluvial Channel. Yan Ding and Sam S.Y. Wang, University of Mississippi, USA

IWM1.9: Water environmental capacity changes and ecological environment impacts on Xiangfan reach of the Hanjiang River, China, following hydraulic projects construction. Sun Chen and Wu Hongjuan, Huazhong University of Science and Technology, China

3.2 Nutrients Management
Time: July 29, 3:20 – 5:05 PM
Chair: Kung-Hui Chu
Room: 122

IWM2.1: The dynamics of the phytoplankton speciation and distribution in subtropical reservoirs in Taiwan. Shian-chee Wu, Yu-ching Chien and Yi-jing Chen; National Taiwan University, Taiwan

IWM2.2: Long-term phosphorus dynamics at wastewater reuse sites. H.A. Elliott, and D. Jaiswal, Pennsylvania State University, USA

IWM2.3: Integrating overland fate and transport of biosolids-associated pathogens with infection risks during surface water recreational activities. Arun Kumar, Mira S. Olson, and Patrick L. Gurian, Michigan State University, USA

IWM2.4: Nitrogen removal from reject water by simultaneous endogenic carbon source exploiting from primary sludge. Jun Zhou, Shu Jun Zhang, and Liang Zhang, Beijing Drainage Group Co., LTD, China

3.3 Water quality indicators
Time: July 29, 3:20 – 5:05 PM
Chair: Pei Chiu
Room: 122

IWM3.1: User-driven data exploration in a managed lake system: Steps toward integrated watershed modeling and management tools in support of decision making and community education. Jean D. MacRae, Shaleem Jain, Andrew Reeve, and Jong-Sum Kim, University of Maine, USA

IWM3.2: Simultaneous detection of nine cyanotoxins in drinking water using dual solid-phase extraction and liquid chromatography-mass spectrometry. Hung-Kai Yin and Tsair-Fuh Lin, National Cheng Kung University, Taiwan

IWM3.3: Are water quality goals and agriculture sustainable in the Chesapeake Bay Watershed? William F. Ritter, University of Delaware, USA

IWM3.4: Advanced drainage concepts demonstration project: The Kansas City experience. Michael A. Ports, American Water Resource Institute, USA

Time: July 30, 10:20 – 12:05 PM
Chair: C. T. Tien
Room: 122

IWM3.5: Implementation of integrated water management: Plans for sustainability. P.C. Chiang and E.E. Chang, National Taiwan University, Taiwan

IWM3.6: Designing for stormwater sustainability. Robert Traver, Villanova University, USA

IWM3.7: The study on the integrated environmental indicators for the development of watershed rural community. Kai-Min Wang, Shih-Chung Lu, and Yii-Der You, National Taiwan University, Taiwan

IWM3.8: Combined sewerage system optimization. Richard Field, Anthony N. Tafuri, and Thomas O'Connor, US Environmental Protection Agency, USA

Time: July 30, 3:20-5:00 PM
Chair: Haifeng Jia
Room: 122

IWM3.9: Molecular similarity analysis as tool to prioritize research related to emerging contaminants in the environment. Chenxi Li, and Colosi, Lisa, University of Virginia, USA

IWM3.10 Creating ‘green’ stormwater with bioretention. Allen Davis, University of Maryland, USA

IWM3.11 An overview of research on non-point sources pollution modelling in China. Zhenyao Shen, and Hong Qian, Gong Yongwei, Beijing Normal University, China


4 Water Conservation/Reuse (WCR)

4.1 Reuse Programs
Time: July 29, 10:30 – 12:05 PM
Chair: Sang won Park
Room: 120

WCR1.1: Overview of the executive order 13423 and 13514 requirements on federal facilities water conservation and reuse. Ker-Chi Chang, US Department of Energy, USA

WCR1.2: Water reuse regulations in Maryland, USA. C.T. Tien, Maryland Department of the Environment, USA

WCR1.3: Water 2050: Cyber-physical infrastructure needs for water. Jeanne VanBriesen, Carnegie Mellon University, USA

WCR1.4: Impact of a sustainable energy policy in Delaware on water savings and equity. Young-Doo Wang, Sunggoo Kang and Zachary Schafer, University of Delaware, USA

Time: July 29, 1:00 – 3:05 PM
Chair: Pei Chiu
Room: 120

WCR1.5: A study on saline wastewater reuse by nano membrane processes. Sang Won Park, Jae Eun Heo, Ji Hye Kim, Byung Joo Park, and Yong Il Shin; Keimyung University, Korea

WCR1.6: Water usage and sustainable water supply for ethanol production. Jianpeng Zhou, Mark Grinter, and Brian Wrenn, South Illinois University, USA

WCR1.7: Wastewater treatment and reuse options for groundwater protection and water supply extension, Cedar City, Utah. R. Ryan Du Pont, Utah State University, USA

WCR1.8: A study on the assessment of the public perception on the sustainable water resource use for the Taiwan
metropolitan area. Shih-Chung Lu, Szu-Hsien Peng, and Hwong-Wen Ma, National Taiwan University, Taiwan

4.2 Chemical Oxidation
Time: July 29, 3:20 –5:05 PM
Chair: Rao Surampalli
Room: 120
WCR2.1: Fenton oxidation of petroleum hydrocarbons adsorbed to soil particles in the effluent of a biosurfing process. Jong Un Gwak, Jaewoo Lee, Kwan Hyung Lee, Young Kim, and Suung-Il Choi, Korea University, Korea
WCR2.2: Electrochemical oxidation of industrial wastewater with the tube type electrolysis module system. Jongsk Jeong and Jaobok Lee, Kyungsung University, Korea
WCR2.3: UV disinfection of various microbial contaminants for drinking water treatment. Jiangyong Hu, National University of Singapore, Singapore
WCR2.4: Supercritical water oxidation processes for treatment of organic wastes. Development of a mobile SCWO plant. Vladimir Anikeev, Boreskov Institute of Catalysis, Russia

Time: July 30, 8:30 – 10:05 AM
Chair: Suung-II Choi
Room: 120
WCR2.5: Highly effective buoyant photocatalyst prepared with a novel layered-TiO₂ configuration on polypropylene fabric and the degradation performance for methyl orange dye under UV/Vis lights. Hui Han, Renbi Bai, National University of Singapore, Singapore
WCR2.6: Evaluation at laboratory level of the photocatalytic destruction of cyanides in galvanic effluents from industries in Colombia. Rosalina Gonzales Forero, Adier Barrios Cicery, and Juan Gil Donato, Lasalle University, Colombia
WCR2.7: Photocatalytic degradation of diethyl phthalate using titanium dioxide and artificial ultraviolet light in a quartz slurry type reactor. A. D. Kulkarni, Dhananjay S., and Bhatkhande, Bharati Vidyapeeth University, India
WCR2.8: Bisphenol A removal by ferrate oxidation. Panyue Zhang, Guangming Zhang, Jinhua Dong, and Maohong Fan, Beijing Forestry University, China

Time: July 30, 10:20 –12:05 PM
Chair: J. C. Liu
Room: 120
WCR2.9: UV and visible light-activated non-metal doped TiO₂ photocatalysis: Application to the destruction of the Cyanotoxin Microcystin-LR. Dionyssios D. Dionysiou, University of Cincinnati, USA
WCR2.10: Sulfate radical-based advanced oxidation processes: Applications on the destruction of organic contaminants and disinfection. Dionyssios D. Dionysiou, University of Cincinnati, USA
WCR2.11: Degradation of pentachlorophenol by ozonation. Menghao Sung, Hui Ling Chan, Tunghai University, Taiwan
WCR2.12: Commercial zero-valent iron (ZVI) and nano-scale ZVI for drinking water applications. Chunjian Shi, Dan Pomeroy, and Pei C. Chiu, University of Delaware, USA
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4.6 Biological technologies
July 31, 8:30-10:05 AM
Chair: Daniel Cha
Room: 121
WCR6.1: Activated sludge clarification using downflow sludge blanket formed by micro-bubbles. Ki-Yong Lee, Kyung-jin Kim, Jin Heo, Pugazhendi Arulagahasan, and Iek-Tae Yeom, Sungkyukwan University, Korea
WCR6.2: Double approaches to extend a limitation of aerobic wastewater treatment by controlling oxygen transfer rate and submerged membrane bioreactor. Sang-Min Lee, and Mi-Hyung Kim, Kongju National University, Korea
WCR6.4: An innovative integrated reactor system for simultaneous removal of carbon, sulfur and nitrogen based on biological niches. Aijie Wang, Chuan Chen, Chunshuang Liu, Nanqi Ren, and Duu-Jong Lee, Harbin Institute of Technology, China

Time: July 31, 10:15 – 11:55 AM
Chair: D. M. Wang
Room: 121
WCR6.5: Construction of multi-function wetland for ecosystem restoration. Y.T. Fu, C.Y. Wu, C.M. Kao, C.E. Lin, and B.M. Yang, National Sun Yat-Sen University, Taiwan
WCR6.6: Combination of shredded tire biofilters and membrane bioreactors for reclamation of graywater. Meng Hu, and Tian C. Zhang, University of Nebraska-Lincoln, USA
WCR6.7: Cometabolic degradation of pyrene by indigenous white-rot fungi Pseudotrametes gibbosa from the northeast China. Dawen Gao, and Jiwei Wen, Northeast Forestry University, China
WCR6.8: Domestic wastewater treatment using anoxic/oxic membrane bioreactor: Effect of hydraulic retention time. Dawen Gao, Yu Tao, Rui An, Yuan Fu, and Nanqi Ren, Harbin Institute of Technology, China

4.7 Infrastructure
Time: July 30, 10:20 – 12:05 PM
Chair: H. A. Elliott
Room: 124
WCR7.1: Sustainable and resilient urban infrastructure design: A holistic approach. Hyunju Jeong, Arka Pandit, John Crittenden and John Xu, Georgia Institute of Technology, USA
WCR7.2: Domestic wastewater treatment in a denitrifying biocathode based microbial fuel cell system. A. Al-Mamun and How Yong Ng, National Singapore University, Singapore
WCR7.3: Assessment of human health risk and water safety: Chemical and microbial risks. Satoshi Okabe, Hokkaido University, Japan
WCR7.4: Status and development proposal for municipal wastewater reuse in China. Jun Li, Chein-Chi Chang, Yannian Zhou, Su Wei, Zhejiang University of Technology, China

4.8 Separation
Time: July 30, 1:00 -2:40 PM
Chair: Dionyssios D. Dionysiou
Room: 124
WCR8.1 Desalination by pervaporation for irrigation. M.R. Templeton and M. Tonkin, Imperial College London, UK
WCR8.2: Extraction of azo dyes from water using ionic liquids. Jianji Wang, Jing Fan, Yunchang Fan and Sheli Zhang, Henan Normal University, China
WCR8.3: Increasing the sustainable reuse of wastewater by developing aeration control. Bo-chuan Cho and Cheng Nan Chang, Tunghai University, Taiwan
WRC8.4: Recycle wasted activated sludge as immobilized pellets to upgrade water quality. Han-Hsien Huang, Cheng-Nan Chang and Ying-Chih Chiu, Tunghai University, Taiwan

5.0 Water Infrastructures
Time: July 29, 10:30 – 12:05 PM
Chair: Adrienne T. Cooper
Room: 124
WIS1: Sustainability and the American Water Works Association: Defining a path for the future. Cynthia Lane, American Water Works Association, USA
WIS2: Evaluation of duckweed as a cost-effective technology for management of phosphorous in municipal wastewater systems. R. Ryan Dupont, Jonathan Farrell, Maureen Kessano, and Jong-Su Eun, Utah State University, USA
WIS3: Towards sustainable water use in the paper industry. Daphne Hermosilla, Ignacio San Pio and Angeles Blanco, Universidad Complutense de Madrid, Spain
WIS4: Assessing the greenhouse gas impacts of water infrastructure. Parikhit Sinha, O’Brien & Gere, USA

Time: July 29, 3:20 – 5:05 PM
Room: 124
WIS5: Measuring sustainability and resilience of urban infrastructure. Adrienne T. Cooper and Kwasi Densu, Florida A&M University, USA
WIS6: The economic value of water: Sustainable watershed funding around the Pacific Rim. Gerald J. Kauffman, University of Delaware, USA
WIS7: Prediction of organic solvents permeation through PVC pipes using a nondestructive evaluation technique. Chu-Lin Cheng, Thomas C. Chioi, Say Kee Ong, and Feng Mao, Iowa State University, USA
WIS8: Stormwater phosphorus removal using adsorptive filtration media. Jia Ma, James Lenhart, John Pedrick, and Karel Tracy, Contech Construction Products, Inc. USA

Time: July 29, 1:00 – 3:05 PM
Chair: Jiangyong Hu
Room: 124
WIS10: Water and energy efficient systems for water reclamation. L.Y. Lee, Say Leong Ong, How Young Ng and Jiayong Hu, National University of Singapore, Singapore
WIS11: Disposing treated wastewater in rapid infiltration basins: Simulations to optimize soil-aquifer-treatment. Maryam Akhavan, Paul T. Imhoff, and Scott Andres, University of Delaware, USA

WIS12: Well field resource optimization, six years of successful aquifer storage and recovery (ASR) cycles from the Delaware Coastal plain. Peter M. Demicco, and Robert Pennman III, Artesian Water Company, Inc., USA

WIS13: Implementing a water and wastewater operator training program via international partnerships. Jerry Williams and Steve Rohm, Delaware Technology Community College, USA

Time: July 30, 8:30 – 10:05 AM
Chair: Gerald Kauffman
Location: 124

WIS14: Strategies for Sustainable Development of the municipal sewage treatment in Guangdong, China. Yong-hong Wang, Lu Huan-liang, Ye Xiang-dong, Huang Zhi-hua, Guangdong Academy of Environmental Science, China


WIS16: Beneficial Reuse of Reclaimed Water in Delaware. R. Graeber and M. Baust, Delaware Department of Natural Resource and Environment, USA.

WIS17: The study of effect time series of ecological restoration in shallow eutrophic lakes: Zi Yang Lake. Hongjuan Wu, Tiqiang Zhang and Ziyang Yang, Huazhong University of Science and Technology, China
POSTER SESSION
Time: 5:00 – 7:00 PM, July 29 (posting)
Time: 5:00 – 7:00 PM, July 30 (presentation)
Location: Atrium Clayton Hall and Room C101B

1. Climate Change
CCP1: Climate change impacts on water infrastructure. Fitzpatrick, Velvet, Monique Long, Samuel Labi, Purdue University, USA
CCP2: Frequency analysis of heavy rainfall events and its relationship with water resources management and disaster prevention strategy. Peng, Szu-Hsien, Shih-Chung Lu, Su-Chin Chen, Rulin Lin, Chienkuo Technology University, Taiwan
CCP3: Impact of wastewater treatment processes on global climate change- Results of field-scale monitoring and global climate modeling. Sohl, Linda, and Kartik Chandran, Columbia University, USA
CCP4: Reservoir capacity planning with respect to hydrological features and environmental quality. Chen, Ho-Wen, Ni-Bin Chang, Shu-Fen Cheng, and Chu-Kuang Ning, Chaoyang University of Technology, Taiwan
CCP5: Survey of simple water treatment plants in Taiwan. Ng, Kok-Kwang, Angela Yu-Chen Lin, and Cheng-Fang Lin, National Taiwan University, Taiwan
CCP6: Modeling climate change impacts on nutrients loading in a watershed in Taiwan. Chueh, Pei-Te, Ning-Hsin Liu, and Tianmei Li, Huqiao University, China

2. Emerging Contaminants
ECP1: Cometabolic degradation of pyrene by indigenous white-rot fungi Pseudotrametes gibbosa from the northeast China. Gao, Dawen, and Jiwei Wen, Northeast Forestry University, China
ECP2: Effects of different suspended particulate matter concentrations on the growth and photosynthetic physiological responses of Chlorella pyrenoidosa. Li, Shanshan, Peiyong Guo, and Tianmei Li, Huqiao University, China
ECP3: Fate of nonylphenol ethoxylates in two municipal wastewater treatment plants. Northern China. Gao Dawen, Junxue Guan, Yifan Li, and Nanqi Ren, Harbin Institute of Technology, China
ECP4: Monitoring of estrogenic chemicals using biological and chemical approaches in South Korean surface and waste waters. Ra, Jin, Sung, Sun Hong Lee, Jiho Lee, Junho Jeon, Hyun Y. Kim, Sang D. Kim, Hoon K. Choi, and Yongchun Dong, Gwangju Institute of Science and Technology, Korea
ECP5: Spatial distribution of heavy metals in contaminated agricultural soils exemplified by Cr, Cu, and Zn. Yao-Tung Lin, National Chung Hsing University, Taiwan
ECP8: Evaluation of sediment toxicity in Kaohsiung Harbor, Taiwan. Chih-Feng Chen, Chih-Ming Kao, Cheng-Di Dong, and Chiu-Wen Chen, National Kaohsiung Marine University, Taiwan
ECP9: Bonding fractionation of anionic/cationic chromium in soil and influence of pH on soil washing efficiency. Shu-Fen Cheng, Yao-Ting Tu, Chin-Yuan Huang, Jimmy Kao, and Jian-Ming Chen, Chaoyang University of Technology, Taiwan
ECP10: Spatial distribution of heavy metals in contaminated agricultural soils exemplified by Cr, Cu, and Zn. Yao-Tung Lin, National Chung Hsing University, Taiwan

3. Integrated Watershed Management
IWMP1: Bioretention for stormwater quality improvement in Texas: Removal effectiveness of Escherichia coli. Kim, Myung Hee, Chan Yong Sung, Ming-Han Li, and Kung-Hui Chu, USA, Texas A&M University
IWMP2: The study on the integrated environmental indicators for the development of watershed rural community. Wang, Kai-Min, Shih-Chung Lu, and Yi-der You, National Taiwan University, Taiwan
IWMP3: Water environmental capacity changes and ecological environment impacts in Xiangfan Reach of the Hanjiang River, China, following hydraulic projects construction. Chen, Sun, and Wu Hongjian, Huazhong University of Science and Technology, China

4. Water Conservation/Reuse
WCRP1: A study on the assesment of the public perception on the sustainable water resource use for the Taiwan metropolitan area. Lu, Shih-Cheng, Szu-Hsien Peng, and Hwong-Wen Ma, Chienkuo Technology University, Taiwan
WCRP2: Activated sludge clarification using downflow sludge blanket formed by micro-bubbles. Lee, Ki-Yong, Kyung-jin Kim, Jin Heo, Pugazhendi Arulzahagam, and Ick-Tae Yeom, Sungkyunkwan University, Korea
WCRP3: Selenium Removal from Water by FeOOH, Sharrad, Mustafa, Maohong Fan, and Huijuan Liu, University of Wyoming, USA
WCRP4: Degradation of azo dye in water by heterogeneous Fenton reaction using Cu-Fe bimetallic amido amide PAN fiber complexes under visible light irradiation. Dong, Yongchun, Zhenbang Han, Suting Sun, Chunyan Liu, Tianjin Polytechnic University, China
WCRP5: Degradation of chlorophenol by electrochemical process. Huang, Jui-Yuan, Wing-Ping Liao, and Siou-Mei Lai, University of California, USA
WCRP6: Dyebath water renovated using a heterogeneous Fenton system based on Fe(III)-modified PAN fiber complex for the coloration of wool woven fabric with acid dyes. Dong, Yongchun, Chunyan Lie, Baohua Zhang, and Taisen Zhao, Tianjin Polytechnic University, China
WCRP7: Environmental application of nano-scale emulsion. Lin, Ching-Lin, Yu-Hao Lin, Shu-Chi Chang, and Min-Der Lin, National Chung Hsing University, Taiwan
WCRP8: Evaluation at laboratory level of the photocatalytic destruction of cyanides in galvanic effluents from industries in Colombia. Gonzales-Forero, Rosalina,
Adier Barrios Cicery, and Juan Gil Donato, La Salle University, Colombia

WCRP9: Investigation on flocculation process of composite poly-Si-Fe coagulant. Fu, Ying, University of Jinan, China

WCRP10: Rapid infiltration system for enhanced removal of nitrate from secondary effluent. Maeng, M.H., Cha, D.K., Ritter, WF, Deputy, M., and Carbaugh, B., University of Delaware, USA

WCRP11: Recycle wasted activated sludge as immobilized pellets to upgrade water quality. Huang, Han-Hsien, Cheng-Nan Chang, and Ying-Chih Chiu, Tunghai University, Taiwan

WCRP12: Study on the treatment of polluted river water by constructed rapid infiltration system. Li, Chao, Wu Weizhong, and Hou Chenglin, Peking University, China

WCRP13: The adsorption study of copper and nickel using chitosan immobilized on bentonite. Shun-Lone Li, Meng-Wei Wan, Cybelle M. Futalan, Kuang-Chung Yu, and Maria Lourdes P. Dalida, Chia Nan University of Pharmacy and Science, Taiwan

WCRP14: The effects of ultrasound assisted pre-coagulation process applied on PTFE-MF membrane cleaning. Kan, Chi-Chuan, Meng-Wei Wan, and Hui-Ling Yang, Chia-Nan University of Pharmacy and Science, Taiwan

WCRP15: The study of effect time series of ecological restoration in shallow eutrophic lakes: Zi Yang Lake. Wu, Hongjuan, Tiqiang Zhang; and Ziyi Yang, Huazhong University of Science and Technology, China

WCRP16: Variation of the changes of H$_2$O$_2$/OH$^-$ concentrations in NTFC system. Hsieh, Wen-Pin, Chihpin Huang, and Jill Ruhsing Pan, National Chiao Tung University, Taiwan

WCRP17: UV disinfection of various microbial contaminants for drinking water treatment. Hu. Jiangyong, National University of Singapore, Singapore

WCRP18: Oxidation of aniline by titanium dioxide activated by visible light. A.J. Jevprasesphant, Anotai, Y.M. Lin and M.C. Lu; Chia-Nan University of Pharmacy and Science, Taiwan

WCRP19: Reclamation of back-side grinding wastewater using membrane systems. B.M. Yang, C.M. Kao, C.J. Huang, W.L. Lai, C.W. Chen C.D. Dong. National Sun Yetsen University, Taiwan

5. Water Infrastructure

WISP1: Aeration effect on the performance of a double-chamber sediment microbial fuel cell. Huang, Chih-An, Cheng-Nan Chang, Ying-Chih Chiu, National ILan University, Taiwan

WISP2: Disposing treated wastewater in rapid infiltration basins: Simulations to optimize soil-aquifer-treatment. Akhavan, Maryam, Paul T. Imhoff, and Scott Andres, University of Delaware, USA

WISP3: Implementing a water and wastewater operator training program via international partnerships. Williams, Jerry, and Steve Rohm, Delaware Technology Community College, USA

WISP4: One-dimensional simulation of Sandy River after Marmot Dam removal. Elgohry, Moustafa, Yan Ding, and Sam S.Y. Wang, University of Mississippi, USA

WISP5: Production of biodiesel from wastewater treatment plant microorganisms. Kiracofo, Nathan S., Scott R. Loughery, Daniel K. Cha, Nack Joo Kim, and Dong Wook Kim, University of Delaware, USA

WISP6: Impact of a sustainable energy policy in Delaware on water savings and equity. Young-Doo Wang, Sunggoo Kang, University of Delaware, USA