

POSTERS PRESENTED AT THE 2<sup>ND</sup> INTERNATIONAL SYMPOSIUM OF ENERGY  
AND ENVIRONMENT, HONG KONG, DECEMBER 8-10, 2008

<http://mageep.wustl.edu/symposium08>

**I. Aerosol Sciences**

- la. System Approach to Study the Performance of Air Cleaners (From Energy Conservation and Air Quality Control Points of View)

*Da-ren Chen<sup>1</sup>, Ruth Chen<sup>1</sup>, and Chih-Chieh Chen<sup>2</sup>*

*<sup>1</sup>Washington University in St. Louis;*

*<sup>2</sup>Institute of Occupational Medicine and Industrial Hygiene, College of Public Health, National Taiwan University*

- lb. Personal Exposure Measurements from Household and Commercial Scale Stoves in Rural Areas of Orissa, India

*Manoranjan Sahu<sup>1</sup>, John Peipert<sup>2</sup>, Timothy Severyn<sup>2</sup>, Gautam Yadama<sup>2</sup>, Jagdeesh Puppala<sup>3</sup>, Pratim Biswas<sup>1</sup>*

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- lc. Hygroscopic Properties of Inorganic Aerosols: The Relationship among Growth Factor, Size, and Relative Humidity

*Dawei Hu; Xingnan Ye; Jianmin Chen*

*Department of Environmental Science and Engineering  
Fudan University, Shanghai, China*

- ld. Physicochemical Properties of Freshly Generated Aerosols from Agricultural Residues burning

*Xingnan Ye, Hefeng Zhang, Huxiong Cui, Jianmin Chen*

*Department of Environmental Science and Engineering  
Fudan University, Shanghai, China*

- le. Infectious Diseases Monitoring in Sichuan Areas after the 5/12 Earthquake

*Maosheng Yao\*, Tong Zhu\*, Kejun Li, Yan Wu, Shuofei Dong, Xinhua Qiu, and Bo Jiang+, \*State Key Joint Laboratory of Environmental Simulation and Pollution Control, College of Environmental Sciences and Engineering, Peking University, China, and +Sichuan University, Sichuan, China*

## **II. Air Quality**

- IIa. Sustainable Urban Transport: Assessing Air Quality Impacts of Transportation Network Infrastructure Improvements

*Jay Turner, Department of Energy, Environmental and Chemical Engineering, Washington University in St. Louis, St. Louis, MO, USA;  
Tom Mathew, Department of Civil Engineering; IIT-Bombay, India*

- IIb. Collaborative Air Quality Data Analysis through Web Technologies

*Stefan Falke, Rudolf Husar, Erin Robinson, Kari Hoijarvi, and Ed Fialkowski  
Department of Energy, Environmental and Chemical Engineering  
Washington University in St. Louis*

- IIc. Comparisons of Biological Contents in the Air Samples Collected from the Ground and a TV Tower of 238m High

*Kejun Li, Maosheng Yao, Yan Wu and Shuofei Dong  
State Key Joint Laboratory of Environmental Simulation and Pollution Control, College of Environmental Sciences and Engineering, Peking University, China*

- IId. Microbial Characterization of the Air Samples Collected in Beijing Olympic Sites

*Kejun Li and Maosheng Yao  
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- IIe. Airborne and Dustborne Fungi in Two Construction Workplaces and Their Health Hazards

*Siu-Wai Chiu, Ka-Ho Lai, and Jun Gong  
Department of Biology and Environmental Science Program, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong SAR, China*

## **III. Nanoparticles**

- IIIa. Design and Manufacturing of Novel Plasmonic Nanostructured Materials for Solar Energy Harvesting

*J. Trice<sup>1</sup>, C. Favazza<sup>1</sup>, D.G. Thomas<sup>1</sup>, H.G. Garcia<sup>2</sup>, R. Kalyanaraman<sup>3</sup>,  
R. Sureshkumar<sup>1</sup>  
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- IIIb. Nanotechnology at the Intersection of Public Health and Environment

*Dong Qin  
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School of Engineering and Applied Science  
Washington University in St. Louis Missouri, USA*

IIIc. Microwave-assisted Synthesis of Monodispersed Silver@Phenol Formaldehyde Resin Core/Shell Nanostructures

*Juncai Jia, Jimmy C. Yu, and Xianluo Hu  
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Department of Chemistry  
Chinese University of Hong Kong*

IIIId. Synthesis of Hollow Carbon Nanospheres and Carbon Nanotubes through a Silver@Phenol Formaldehyde Resin Core/Shell Template Route

*Juncai Jia, Jimmy C. Yu, and Jiangtao Zhu  
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**IV. Clean Coal**

IVa. Distributed Power Generation Options for Rural China

*Melissa L. Holtmeyer<sup>1</sup>, Dr. Shuxiao Wang<sup>2</sup>, Dr. Richard Axelbaum<sup>1\*</sup>  
<sup>1</sup>Laboratory for Advanced Combustion and Energy Research, Department of Energy, Environmental, and Chemical Engineering, Washington University in St. Louis  
<sup>2</sup>Department of Environmental Science and Engineering, Tsinghua University*

IVb. An Integrative Economic Model of Electricity Generation from Non-renewable and Renewable Energy Sources: Demand and Supply Factors, Environmental Constraints and Policy Evaluations

*Ramesh Agarwal, Ping Wang, and Lee Chusak, Washington University in St. Louis, USA; B. B. Bhattacharya, V. K. Jain, Ujjwal Kumar and Amit Prakash, Jawaharlal Nehru University, New Delhi, India  
Professor Hung-Ju Chen, National Taiwan University, Taipei, Taiwan  
Professor Jun Zhang, Chinese University of Hong Kong, China*

**V. Climate Change**

Va. Global Climate Change: Control Theory Methods for a Coupled Climate Model with Carbon-cycle Feedbacks

*Justin Ruths<sup>1</sup>, Ching-Pin Tung<sup>2</sup> and Jr-Shin Li<sup>1</sup>  
<sup>1</sup>Washington University in St. Louis  
<sup>2</sup>National Taiwan University*

Vb. A Long-term Energy Vision and Pathway to 2050

*Nami Kitamura  
Integrated Research System for Sustainability Sciences  
University of Tokyo*

- Vc. Whitney R. Harris World Law Institute Global Initiatives: Climate Change and Crime Against Humanity

*Climate Change Initiative: Maxine Lipeles and Leila Nadya Sadat;  
Crimes Against Humanity Initiative, Leila Nadya Sadat  
Washington University in St. Louis School of Law, St. Louis, MO, USA*

## **VI. Solar Energy**

- Vla. Aerosol Processing for Solar Energy Harvesting

*Elijah Thimsen and Pratim Biswas  
Department of Energy, Environmental and Chemical Engineering, Washington  
University in Saint Louis, Missouri, USA*

- Vlb. Computational Modeling of High-efficiency Bio-hybrid and Multi-junction Photovoltaic Devices

*Cynthia Lo  
Department of Energy, Environmental and Chemical Engineering  
Washington University in St. Louis. St. Louis, MO, USA*

- Vlc. Hierarchical Mesoporous Grape-Like Titania with Superior Recyclability and Photoactivity

*Guisheng Li and Jimmy C. Yu  
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Department of Chemistry  
Chinese University of Hong Kong*

- Vld. Thermally Stable Ordered Mesoporous CeO<sub>2</sub>/TiO<sub>2</sub> Visible-Light Photocatalysts

*Guisheng Li, Dieqing Zhang, and Jimmy C. Yu  
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- Vle. Sol-Gel Synthesis of TCO Coating for PV cells

*Ido Winer, Uri Ash-Kurlander, Gennady E. Shter, and Gideon Grader  
Technion Energy Program, the Wolfson Department of Chemical Engineering  
Technion IIT, Haifa. Israel*

## **VII. Bioenergy**

- VIIa. Exploring the Structure and Function of a Minimal Photosynthetic Antenna Complex

*Robert E. Blankenship, Jianzhong Wen, Xianglu Li, Departments of Biology and  
Chemistry, Washington University, St. Louis, USA; Noam Adir, Department of  
Chemistry, Technion – Israel Institute of Technology, Israel; Min Chen, School of  
Biological Sciences, University of Sydney, NSW 2006, Australia*

VIIb. Can Brazil Replace 10% of the 2025 Gasoline World Demand with Ethanol?

*Rogério Cezar de Cerqueira Leite, Manoel Regis Lima Verde Leal, and  
Luis Augusto Barbosa Cortez  
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State University of Campinas - UNICAMP, Brazil*

VIIc. Discovery and Improvement of Enzymes and Microbes for Deconstruction of Lignocellulosic Materials

*Tuan-hua David Ho, Department of Biology, Washington University in St. Louis,  
St. Louis, MO USA; Sumay Yu, Institute of Molecular Biology, Academia Sinica,  
Taipei, Taiwan*

VIIId. Novel Reactor Design for Clean Alternative Fuels Synthesis

*Ahmed A. Youssef, Milorad P. Dudukovic, and Muthanna Al-Dahhan  
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VIIe. Zeolites for Cleaner Technologies

*S.V. Nayak, P.A. Ramachandran, and M.P. Dudukovic  
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VIIIf. Biomass to Bioenergy

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## **VIII. Water Resources**

VIIIa. Taiwan Kuroshio Power Generation

*Si-chen Lee and Falin Chen  
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National Taiwan University, Taiwan*

VIIIb. Aftershocks: The Post-Disturbance Institutionalization of Policy Change

*William Lowry, Washington University; Andrew Mertha, Cornell University;  
In collaboration with Shi Zongkai, Qinghua University and Di Ping Tibetan  
Prefecture*

## **IX. Water Quality**

IXa. Treatment of a High-solids Synthetic Domestic Wastewater Stream with High-rate Anaerobic Digesters

*Zeynep Aydinkaya<sup>1,2</sup>, Orhan Yenigun<sup>2</sup>, Turgut T. Onay<sup>2</sup>, Chackrit Nuengjamnong<sup>3</sup> and Largus T. Angenent<sup>1,4</sup>*

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IXb. Impact of Water Chemistry on the Formation, Stabilization, and Dissolution Rate of Pb (IV) Oxides

*Yanjiao Xie, James D. Noel, Katherine Nelson, and Daniel E. Giammar  
Department of Energy, Environmental and Chemical Engineering, Washington University in St. Louis*

IXc. The Influence of Water Chemistry on Dissolution Rates of Lead(II) Carbonate Solids Found in Water Distribution Systems

*James D. Noel,<sup>1</sup> Yanjiao Xie,<sup>1</sup> Jill D. Pasteris,<sup>2</sup> Vivek Shah,<sup>3</sup> Akkihebbal K. Suresh,<sup>3</sup> and Daniel E. Giammar<sup>1</sup>*

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## **X. Sustainable Campuses**

Xa. Danforth Campus Carbon Footprint: Using the Campus as a Living Laboratory

*E. Robinson\*, R. B. Husar\*, and M. Malten+*

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Xb. PCM Members in Architectural Enclosures

*Paul J. Donnelly<sup>1</sup>, Rachel Becker<sup>2</sup>, Donald Fedorko<sup>3</sup>*

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*<sup>3</sup>HOK Architects, St. Louis, Missouri, USA*

Xc. Sustainable Design at Home and Abroad: Lessons Learned from Washington University in St. Louis' new Engineering Campus

*Steven Gifford & Mitch Green  
RMJM Hillier, New York, NY, USA*

- Xd. New Initiatives for Sustainable University Community  
*Ki-ho Kim  
Graduate School of Environmental Studies  
Seoul National University, Seoul, Korea*

**XI. Education**

- XIa. Collaboratory for Developing Course Content in Aerosol Science and Engineering

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Department of Energy, Environmental and Chemical Engineering,  
Washington University in St. Louis, St. Louis, MO, USA*

- XIb. International Experience in Energy, Environmental and Chemical Engineering in Air Pollution Control for the Beijing Olympics

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