Yin Wang

Assistant Professor

Department of Civil and Environmental Engineering
University of Wisconsin - Milwaukee
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EDUCATION

Washington University in St. Louis, St. Louis, MO, USA 2012
Ph.D., Energy, Environmental, and Chemical Engineering

Washington University in St. Louis, St. Louis, MO, USA 2011
M.S., Energy, Environmental, and Chemical Engineering

Peking University, Beijing, China 2008
B.S., Environmental Science

APPOINTMENTS

University of Wisconsin – Milwaukee, Milwaukee, Wisconsin, 2014 – present
Assistant Professor, Dept. Civil and Environmental Engineering

University of Illinois at Urbana-Champaign, Urbana, Illinois, 2013 – 2014
Postdoctoral Research Associate, Dept. Civil and Environmental Engineering

Washington University in St. Louis, St. Louis, Missouri 2008 – 2012
Graduate Research and Teaching Assistant, Dept. Energy, Environmental, and Chemical Engineering

RESEARCH INTERESTS

Environmental Application of Advanced Materials

- Fabrication of hybrid materials for water purification application (adsorption, catalysis, membrane separation)
- Development of innovative material-based technologies for resource recovery from waste

Environmental Geochemistry

- Fate and transport of hazardous chemicals in drinking water sources
- Environmental impact of hydraulic fracturing and carbon sequestration
- Chemical methods for groundwater and subsurface remediation

Water Transmission and Distribution

- Water quality control
- Scale prevention and corrosion control

HONORS AND AWARDS

- Graduate Research Award, Washington University in St. Louis, 2012
- Best Student Paper Award at the Water Quality and Technology Conference (WQTC), Phoenix, 2011
- Envirsan Fellowship, Washington University in St. Louis, 2008

JOURNAL PUBLICATIONS

Peer Reviewed Publications

1. **Wang Y.**[+], Liu J.[+], Wang P., Werth C.J., Strathmann T.J. Palladium nanocrystals encapsulated in

core-shell silica: a structured hydrogenation catalyst with enhanced activity for reduction of oxyanion water pollutants. *ACS Catalysis*, **2014**, 4, 3551-3559. ([+]Equal contribution as noted in manuscript)

2. Noel J.D.[+], **Wang Y.**[+], Giammar D.E. Effect of water chemistry on the dissolution rate of the lead corrosion product hydrocerussite. *Water Research*, **2014**, 54, 237-246. ([+]Equal contribution as noted in manuscript)
3. **Wang Y.**, Mehta V., Welter G., Giammar D.E. Effect of connection methods on lead release from galvanic corrosion. *Journal – American Water Works Association*, **2013**, 105, E337-E351. [This work was reported by *Science Daily* and *Water Online*]
4. **Wang Y.**, Wu J., Wang Z., Terenyi A., Giammar D.E. Kinetics of lead(IV) oxide (PbO_2) reductive dissolution: Role of lead(II) adsorption and surface speciation. *Journal of Colloid and Interface Science*, **2013**, 389, 236-243.
5. Giammar D.E., Cerrato J.M., Metha V., Wang Z., **Wang Y.**, Pepping T.J., Ulrich K., Lezama-Pacheco J.S., Bargar J.R. Effect of diffusive transport limitations on UO_2 dissolution. *Water Research*, **2012**, 46, 6023-6032.
6. **Wang Y.**, Jing H., Mehta V., Welter G.J., Giammar D.E. Impact of galvanic corrosion on lead release from aged lead service lines**.** *Water Research*, **2012**, 46, 5049-5060.
7. **Wang Y.**, Wu J., Giammar D.E. Kinetics of the reductive dissolution of lead(IV) oxide by iodide. *Environmental Science & Technology*, **2012**, 46, 5859-5866.
8. **Wang Y.**, Xie Y., Li W., Wang Z., Giammar D.E. Formation of lead(IV) oxides from lead(II) compounds. *Environmental Science & Technology*, **2010**, 44, 8950-8956.
9. Xie Y., **Wang Y.**, Giammar D.E. Impact of chlorine disinfectants on dissolution of the lead corrosion product PbO_2. *Environmental Science & Technology*, **2010**, 44, 7082-7088.
10. Wu B., **Wang Y.**, Lee YH., Horst A., Wang Z., Chen DR., Sureshkumar R., Tang Y.J. Comparative eco-toxicities of nano-ZnO particles under aquatic and aerosol exposure modes. *Environmental Science & Technology*, **2010**, 44, 1484-1489.
11. Xie Y., **Wang Y.**, Singhal V., Giammar D.E. Effects of pH and carbonate concentration on dissolution rates of the lead corrosion product PbO_2. *Environmental Science & Technology*, **2010**, 44, 1093-1099.

Manuscripts in Review or Preparation

1. Liu J., Choe J.K., **Wang Y.**, Shapley J.R., Werth C.J., Strathmann T.J. A Bio-inspired Complex-Nanoparticle Hybrid Catalyst System for Aqueous Perchlorate Reduction: Rhenium Speciation and Its Influence on Catalyst Activity. Submitted to *ACS Catalysis*.
2. **Wang Y.**, Giammar D.E. Effect of divalent cations on the dissolution of lead(IV) oxide. In preparation for *Environmental Science & Technology*.
3. Liu J., **Wang Y.**, Choe J.K., Shapley J.R., Werth C.J., Strathmann T.J. Kinetics and stability of the heterogeneous $Re(hoz)_2$-Pd/C catalyst for efficient perchlorate reduction under water treatment conditions. In preparation for *Environmental Science & Technology*.

TECHNICAL REPORTS

1. Welter G., Giammar D.E., **Wang Y.**, Cantor A. Galvanic corrosion following partial lead service line replacement. Water Research Foundation, 2013.
2. **Wang Y.**, Xie Y., Giammar D.E. Lead(IV) oxide formation and stability in drinking water distribution systems. Water Research Foundation, 2012.

PRESENTATIONS

Invited

1. **Wang Y.**, Liu J., Werth C., Strathmann T. Encapsulation of metal nanoparticles in core-shell silica: an integrated hydrogenation catalyst for sustainable water treatment. Gordon Research Seminar on Environmental Sciences: Water, Jun 21-22, **2014**, Holderness School, New Hampshire.
2. **Wang Y.** Nanostructured catalytic material for water purification. College of Engineering & Applied Science, University of Wisconsin Milwaukee, April 22, **2014**, Milwaukee, Wisconsin.
3. Giammar D.E., **Wang Y.** Rates and mechanisms of lead(IV) oxide reductive dissolution. Goldschmidt 2012, Jun 24-29, **2012**, Montreal, Canada.

Contributed

1. **Wang Y.**, Liu J., Wang P., Werth C., Strathmann T. Design of Pd-based core-shell structured hydrogenation catalyst with enhanced activity. 248th American Chemical Society National Meeting, August 10-14, 2014, San Francisco, California
2. **Wang Y.**, Liu J., Werth C., Strathmann T. Design of Pd-based hydrogenation catalysts with novel structure and enhanced activity. Gordon Research Conference on Environmental Sciences: Water, Jun 22-27, **2014**, Holderness School, New Hampshire.
3. **Wang Y.**, Liu J., Wang P., Werth C., Strathmann T. Core-shell structured metal hydrogenation catalysts: preparation, characterization, and activity. 247th American Chemical Society National Meeting, March 16-20, **2014**, Dallas, Texas.
4. **Wang Y.**, Liu J., Wang P., Werth C., Strathmann T. Metal hydrogenation catalysts immobilized in core-shell silica materials for water purification. 246th American Chemical Society National Meeting, September 8-12, **2013**, Indianapolis, Indiana.
5. **Wang Y.**, Giammar D.E. Impact of galvanic corrosion on lead release following simulated partial lead service line replacement. 2013 Association of Environmental Engineering & Science Professors 50th Anniversary Conference, July 14-16, **2013**, Golden, Colorado.
6. **Wang Y.**, Giammar D.E. Mechanisms of PbO_2 reductive dissolution: a surface complexation modeling approach. 245th American Chemical Society National Meeting, April 7-11, **2013**, New Orleans, Louisiana.
7. **Wang Y.**, Cantor A., Welter G.J., Giammar D.E. Experimental investigation of lead release following simulated partial lead service line replacement. 2012 Water Quality and Technology Conference, Nov 4-8, **2012**, Toronto, Canada.
8. **Wang Y.**, Giammar D.E. Formation and dissolution of the corrosion product lead(IV) oxide. Gordon Research Conference on Environmental Sciences: Water, Jun 24-29, **2012**, Holderness School, New Hampshire.
9. **Wang Y.**, Wu J., Giammar D.E. Effect of oxidants and reductants on the dissolution rate of the corrosion product lead(IV) oxide. 2011 Water Quality and Technology Conference, Nov 13-17, **2011**, Phoenix, Arizona.
10. Giammar D.E., **Wang Y.**, Jing H., Cantor A., Welter G.J. Experimental investigation of lead release during connection of lead and copper pipes. 2011 Water Quality and Technology Conference, Nov 13-17, 2011, Phoenix, Arizona.
11. **Wang Y.**, Wu J., Giammar D.E. Reductive dissolution of the corrosion product lead(IV) oxide by iodide. 242nd American Chemical Society National Meeting, Aug 28-Sep 1, **2011**, Denver, Colorado.
12. **Wang Y.**, Xie Y., Li W., Wang Z., Giammar D.E. Lead(IV) oxide formation from lead(II) compounds. 2010 Water Quality and Technology Conference, Nov 14-17, **2010**, Savannah, Georgia.

13. Xie Y., **Wang Y.**, Giammar D.E. Effects of free chlorine, chloramines and phosphate on dissolution of PbO_2 and the reductive dissolution mechanism. 2010 Water Quality and Technology Conference, Nov 14-17, 2010, Savannah, Georgia.
14. **Wang Y**., Li W., Giammar D.E. Lead(IV) oxide formation from lead(0) and lead(II) oxides at conditions relevant to drinking water distribution. 239th American Chemical Society National Meeting, March 21-25, **2010**, San Francisco, California.
15. Xie Y., **Wang Y.**, Giammar D.E. Rates and mechanisms of lead(IV) oxide formation and dissolution. 239th American Chemical Society National Meeting, March 21-25, 2010, San Francisco, California.
16. Xie Y., **Wang Y.**, Singhal V., Giammar D.E. Rates and mechanisms of lead(IV) oxide dissolution. 2009 Water Quality and Technology Conference, November 15-19, 2009, Seattle, Washington.
17. Giammar D.E., Noel J., Xie Y., Nelson K., **Wang Y.**, Singhal V. Influence of water chemistry on the dissolution rates of lead corrosion products. 2009 Water Quality and Technology Conference, November 15-19, 2009, Seattle, Washington.
18. Wu B., **Wang Y.**, Sahu M., Huang R., Feng Y., Biswas P., Tang Y.J. Assessment of toxicity of metal oxide nanoparticles to microbial species. 2009 AIChE Annual Meeting, November 8-13, 2009, Nashville, Tennessee.
19. **Wang Y.**, Xie Y., Li W., Giammar D.E. Lead(IV) oxide formation at conditions relevant to drinking water distribution. 14th Mid-America Environmental Engineering Conference, October 24, **2009**, Saint Louis, Missouri.
20. Wu B., **Wang Y.**, Lee YH., Horst A., Chen DR., Tang Y.J. New investigation of nano-ZnO antimicrobial activity. 2009 Association of Environmental Engineering and Science Professors Conference, July 26-28, 2009, Iowa City, Iowa.

TEACHING EXPERIENCE

University of Wisconsin – Milwaukee, Milwaukee, Wisconsin,

Courses Taught

- CE 413 Environmental Engineering — Spring 2015
- CE 614 Hazardous Waste Management — Fall 2014

Guest Lectures

- CE 413 Environmental Engineering — Fall 2014

University of Illinois at Urbana-Champaign, Urbana, Illinois,

Guest Lectures

- CEE 437 Water Quality Engineering — Spring 2014

University of Houston, Houston, Texas

Guest Lectures

- CIVE 6377 Environmental Chemistry — Fall 2013

Washington University in St. Louis, St. Louis, Missouri

Teaching Assistant

- ChE 525 Industrial and Environmental Catalysis — Fall 2010
- ChE 262 Introduction to Environmental Engineering — Spring 2010
- ChE 351 Engineering Analysis of Chemical Systems — Fall 2009

PROFESSIONAL SERVICE

Chair: 2010 Faculty Search Student Committee for the Department of Energy, Environmental and Chemical Engineering at the Washington University in St. Louis

Reviewer for Scholarly Journals

- Applied Surface Science
- Bioresource Technology
- Chemical Engineering Journal
- Corrosion: The Journal of Science and Engineering
- Ecotoxicology and Environmental Safety
- Environmental Engineering Science
- Environmental Science and Pollution Research
- Environmental Science & Technology
- Frontiers of Environmental Science & Engineering
- International Journal of Environmental Science and Technology
- Journal of Environmental Engineering
- Journal of Hazardous Materials
- Science of the Total Environment
- Water Environment Research
- Water Research
- Water Science and Technology

PROFESSIONAL AFFILIATIONS

- Member, American Chemical Society 2009 – present
- Member, American Water Works Association 2010 – 2013
- Member, Association of Environmental Engineering & Science Professors 2013 – present