

Curriculum Vitae  
**WEILE YAN**

Civil and Environmental Engineering  
Texas Tech University  
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## EDUCATION

*Lehigh University, PA, United States* 2011  
Ph.D., Environmental Engineering  
Dissertation title: Surface chemistry of iron nanoparticles and reactions with environmental contaminants

*Singapore-MIT Alliance, Singapore* 2003  
M.S., Molecular Engineering of Biological and Chemical Systems

*National University of Singapore, Singapore* 2002  
B.Eng., Chemical and Environmental Engineering, 1<sup>st</sup> class honors

## RESEARCH INTERESTS

**Iron nanoparticles:** applications to environmental contaminant sequestration, surface chemistry and surface-mediated interactions, long-term nanoparticle reactivity, fate, and transport

**General:** interactions of iron or iron oxides in biogeochemical systems, catalysis materials for environmental remediation, cycling and fate of heavy metals in the environment

## ACADEMIC EXPERIENCE

Assistant Professor 2011.9-present  
*Texas Tech University, Civil and Environmental Engineering*

Post-doctoral Research Associate 2011.5-2011.8  
*Princeton University, Department of Chemical and Biological Engineering*  
Advisor: Dr. Bruce Koel

Graduate Research Assistant 2006-2011  
*Lehigh University, Department of Civil and Environmental Engineering*  
Advisor: Dr. Wei-xian Zhang, Dr. Chris Kiely (co-advisor, Material Science and Engineering)

## PROFESSIONAL EXPERIENCE

Corporate Environmental Compliance Engineer 2005-2006  
Creative Technology Asia, Singapore

Process Engineer 2003-2005  
Tech Semiconductor, Singapore

## HONORS AND AWARDS

Rossin Doctoral Fellow, Lehigh University 2008-2011  
Dean's Fellowship, Lehigh University 2006-2007  
Graduate Fellowship, Singapore-MIT Alliance 2002-2003  
Overseas Undergraduate Scholarship, Ministry of Education, Singapore 1998-2002

## PROFESSIONAL AFFILIATIONS

- American Chemical Society (ACS) Environmental Chemistry Division
- American Society of Civil Engineers (ASCE)
- Association of Environmental Engineering and Science Professors (AEESP)
- International Water Association (IWA)

## TEACHING EXPERIENCE

Teaching assistant at *Lehigh University*

- CEE170 Introduction to Environmental Engineering
- CEE275 Engineering 5

Courses taught at *Texas Tech University*

- ENVE4315/5315 Environmental Chemistry for Pollution Management
- CE5395 Solid and Hazardous Waste Management
- ENVE1100 Environmental Engineering Seminar

## SERVICE ACTIVITIES

As journal reviewer:

- *Journal of Hazardous Materials*
- *Clean - Soil, Air, Water*
- *Environmental Engineering Science*
- *Water, Air & Soil Pollution*

## JOURNAL PUBLICATIONS

1. Yan, W. L.; Lien, H. L.; Zhang, W. X. Iron nanoparticles for environmental clean-up: Recent developments and future outlook. *Environmental Science: Processes and Impacts*, 2013, 15 (1), 63-67.  
<http://dx.doi.org/10.1039/c2em30691c>

2. Yan, W. L.; Vasic, R.; Frenkel, A.; Koel, B. E. Intra-particle reduction of arsenite (As(III)) by nanoscale zerovalent iron (nZVI) investigated with *in situ* X-ray absorption spectroscopy. *Environmental Science & Technology*, 2012, 46, 7018-7026.  
<http://dx.doi.org/10.1021/es2039695>
3. Yan, W. L.; Ramos, M. A. V.; Koel, B. E.; Zhang, W. X. As(III) Sequestration by Iron Nanoparticles: Study of Solid-phase Redox Transformations with X-ray Photoelectron Spectroscopy. *Journal of Physical Chemistry C*, 2012, 116, 5303-5311.  
<http://dx.doi.org/10.1021/jp208600n>
4. Yan, W.; Herzing, A. A.; Kiely, C. J.; Zhang, W. X. Nanoscale zero-valent iron (nZVI): Aspects of the Nanoparticle Structure and Reactions with Inorganic Species in Water. *Journal of Contaminant Hydrology*, 2010, 118, 96-104.  
<http://dx.doi.org/10.1016/j.jconhyd.2010.09.003>
5. Yan, W. L.; Ramos, M. A. V.; Koel, B. E.; Zhang, W. X. Multi-tiered distributions of arsenic in iron nanoparticles: observation of dual redox functionality enabled by a core-shell structure. *Chemical Communications*, 2010, 46, 6995-6997.  
<http://dx.doi.org/10.1039/C0CC02311F>
6. Yan, W. L.; Herzing, A. A.; Li, X. Q.; Kiely, C. J.; Zhang, W. X. Structural evolution of Pd-doped nanoscale zero-valent Iron (nZVI) in aqueous media and implications for particle aging and reactivity. *Environmental Science & Technology*, 2010, 44, 4288-4294.  
<http://dx.doi.org/10.1021/es100051q>
7. Li, S. L.; Yan, W. L.; Zhang, W. X.; Solvent-free production of nanoscale zero-valent iron (nZVI) with precision milling. *Green Chemistry*, 2009, 11, 1618-1626.  
<http://dx.doi.org/10.1039/B913056J>
8. Ramos, M. A. V.; Yan, W. L.; Li, X. Q.; Koel, B. E.; Zhang, W. X., Simultaneous Oxidation and Reduction of Arsenic by Zero-Valent Iron Nanoparticles: Understanding the Significance of the Core-Shell Structure. *Journal of Physical Chemistry C* 2009, 113, 14591-14594.  
<http://dx.doi.org/10.1021/jp9051837>
9. Martin, J. E.; Herzing, A. A.; Yan, W. L.; Li, X.; Koel, B. E.; Kiely, C. J.; Zhang, W. X. . Determination of the Oxide Thickness in Core-Shell Zero-Valent Iron nanoparticles. *Langmuir*, 2008, 24, 4329-4334.  
<http://dx.doi.org/10.1021/la703689k>
10. Yan, W. L.; Bai, R.B. Adsorption of Lead and Humic acid on Chitosan Hydrogel Beads. *Water Research*, 2005, 39, 688-698.  
<http://dx.doi.org/10.1016/j.watres.2004.11.007>

## CONFERENCE PRESENTATIONS

1. Han, Y. L.; Yan, W. L. In situ groundwater remediation with iron-based bimetallic nanoparticles. 22<sup>nd</sup> annual conference of the Society of Environmental Journalist, Oct 17-21, Lubbock, TX.
2. Yan, W. L.; Vasic, R.; Frenkel, A.; Koel, B. E. Investigation of intra-particle contaminant transformations in nanoscale zero-valent iron with in situ X-ray absorption spectroscopy (XAS). American Chemical Society 243rd National Meeting, Colloid and Surface Science Division, Mar 25-29, 2012, San Diego, CA.
3. Yan, W. L.; Herzing, A. A.; Kiely, C. J.; Zhang, W. X. Structural transformation of Pd/Fe bimetallic nanoparticles in water and implications for particle reactivity. American Chemical

- Society 243rd National Meeting, Environmental Chemistry Division, Mar 25-29, 2012, San Diego, CA.
4. Yan, W. L., Ramos, M. A. V.; Koel, B. E.; Zhang, W. X. Core-shell structure of nanoscale zero-valent iron (nZVI): Multi-faceted reactivity for As(III) sequestration. Gordon Research Conference - Environmental Nanotechnology, May 29 - June 3, 2011, Waterville Valley, New Hampshire.
  5. Yan, W. L.; Ramos, M. A. V.; Koel, B. E.; Zhang, W. X. Spectroscopic Investigations of Arsenic Redox Transformations by Nanoscale Zero-Valent Iron (nZVI). American Chemical Society 240th National Meeting, Environmental Chemistry Division, Aug 22-26, 2010, Boston, MA.
  6. Yan, W. L.; Li, X. Q.; Martin, J. E.; Herzing, A. A.; Koel, B. E.; Kiely, C. J.; Zhang, W. X. The core-shell structure of zero-valent iron nanoparticles (nZVI): Applications in contaminant sequestration. American Chemical Society 238th National Meeting, Colloid and Surface Science Division, Aug, 2009, Washing D.C.
  7. Yan, W. L., Ramos, M. A. V.; Koel, B. E.; Zhang, W. X. Nanoscale zero-valent iron (nZVI): Characterizations and environmental and energy applications. Pennsylvania Infrastructure Technology Alliance Open House, May 2009, Bethlehem, PA.
  8. Ramos, M. A. V.; Yan, W. L.; Martin, J. E.; Herzing, A. A.; Koel, B. E.; Kiely, C. J.; Zhang, W. X. Determination of the oxide layer thickness in core-shell zero-valent iron nanoparticles. Gordon Research Conference - Chemical Reactions at Surfaces, Feb 8-13, 2009, New Hampshire.
  9. Yan, W. L.; Li, X. Q.; Zhang, W. X. Nanoscale zerovalent iron (nZVI): The core-shell structure and reactions with heavy metal ions. International Environmental Nanotechnology Conference, Oct 6-9, 2008, Chicago, IL.