

CURRICULUM VITAE

BAHNGMI (ANGELA) JUNG, Ph.D., P.E.

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BIOGRAPHY

Bahngmi Jung (She) specializes in developing and improving treatment technologies for water, wastewater, groundwater, hazardous wastes, and contaminated soils. She has developed an advanced reduction process (ARP) that combines a reducing agent with an activation method, such as UV light or solar light, and applied it to treat disinfection by-products (bromate, chlorate, etc.), nitrate, arsenic, selenium, trichloroethylene, and other contaminants. She has synthesized visible light-active photocatalyst, bismuth oxybromide, and characterized its surface properties and photocatalytic activities. Additionally, she has synthesized surface-modified nanoiron particles (SNZVI) and successfully applied them for the remediation of contaminated soil and groundwater. She has confirmed the effectiveness of SNZVI in reducing chlorinated organics and examined the stability and mobility through batch, column, and field tests. She has extensive knowledge and experience in developing treatment processes that utilize chemical redox reactions for the treatment of hazardous compounds.

SUMMARY OF QUALIFICATION

- Extensive knowledge and experience in advanced reduction processes for water or wastewater treatment, as well as remediation technologies for contaminated soil and groundwater.
- Proficient in developing experimental and analytical methods.
- Utilized MATLAB to model degradation kinetics of contaminants and transport of nanomaterials.
- Co-authored numerous peer-reviewed journals and conference publications.
- Strong project organizational and planning skills, as well as problem-solving skills.
- Mentored undergraduate and graduate students.

RESEARCH INTERESTS

Advanced reduction process treatment, Wastewater treatment, Water Chemistry, Photochemistry, Nanomaterials, Geoenvironmental chemistry, Soil and Groundwater Remediation

PROFESSIONAL EMPLOYMENT

June. 2023 ~ Present Post-Doctoral Researcher, Texas A&M University, College Station, TX, USA
Jan. 2012 ~ Sept. 2019 Assistant Research Scientist, Texas A&M University at Qatar, Doha, Qatar
Mar. 2011 ~ Dec. 2011 Research Professor, Hanyang University, Seoul, South Korea.
Dec. 2007 ~ Jan. 2011 Post-Doctoral Fellow, University of Toronto, Toronto, ON, Canada.
Nov. 2006 ~ Nov. 2007 Post-Doctoral Research Associate, Wright State University, Dayton, OH, USA.
Aug. 2001 ~ Dec. 2005 Research Assistant, Texas A&M University, College Station, TX, USA.

Mar. 1998 ~ Feb. 2000 Research Assistant, Chung-Ang University, Seoul, South Korea.

EDUCATION

- Ph.D., 2005 **Texas A&M University, College Station, TX**
 Dept. of Civil Engineering, Advisor: Prof. Bill Batchelor
Dissertation: Reductive Dechlorination of Chlorinated Aliphatic Hydrocarbons by Fe(II) in Degradative Solidification/Stabilization
- M.S., 2000 **Chung-Ang University, Seoul, South Korea**
 Dept. of Civil and Environmental Engineering, Advisor: Prof. SooSam Kim
- B.S., 1998 **Chung-Ang University, Seoul, South Korea**
 Dept. of Chemical Engineering

HONORS AND AWARDS

- 2016 Awarded "Solar-driven Advanced Reduction Processes for Destroying Persistent Contaminants in Water" by Qatar National Research Fund (\$809,694), as a Principal Investigator (PI) with a Lead-PI (Prof. Ahmed Abdel-Wahab)
- 2005 Student of Research Week Exhibition, awarded 2nd place, Texas A&M University
- 2004 Graduate Student Research and Presentation Grant, Association of Former Students and Office of Graduate Studies, Texas A&M University
- 2002-2005 Research assistantship, Texas A&M University
- 1997 Department Secondary Honor Scholarship, Chung-Ang University, South Korea
- 1994 Department Secondary Honor Scholarship, Chung-Ang University, South Korea
- 1994 Department Junior Honor Scholarship, Chung-Ang University, South Korea
- 1993 Department Secondary Honor Scholarship, Chung-Ang University, South Korea

LICENSURES

- 2021 Licensed as a Professional Engineer (PE)-Environmental in Texas: No. 143163
- 2020 Engineer-in-training certification

LANGUAGE

English (Bilingual proficiency) and Korean (Native)

Skills

Hands-on experiences: X-ray photoelectron spectroscopy (XPS), X-ray diffraction (XRD), Scanning electron microscopy (SEM), Transmission electron microscope (TEM), Inductively coupled plasma-optical emission spectrometry (ICP-OES), Ion chromatography (IC), High-performance liquid chromatography (HPLC), Gas chromatography (GC), UV-vis spectrometer, Quartz crystal microbalance with dissipation (QCM-D), Fourier-transform Infrared spectroscopy (FTIR), Zeta potential analyzer, Zetasizer, etc.

Statistical/Mathematical software: SAS and MATLAB

Office Computing/Graphic works: Word, Excel, PowerPoint, and Sigma plot

Other software: Visual MINTEQ

RESEARCH PROJECTS

Title: Solar-driven Advanced Reduction Processes (SARP) for Destroying Persistent Contaminants in Water (March 2016 to February 2019), funded by National Priorities Research Program, Qatar National Research Fund (NPRP No. 8-1406-2-605), Role: PI, Award Amount: \$809,694

- Designed a batch reactor system that optimizes light exposure while minimizing volatilization of chlorinated organics.
- Synthesized TiO₂-doped bismuth oxybromide (BiOBr) photocatalyst and conducted surface characterization using XPS, SEM, TEM, and XRD techniques.
- Investigated photocatalytic activities of BiOBr in the presence of reducing reagents under sunlight irradiation for the treatment of methyl orange, trichloroethylene (TCE), and chlorate.
- Conducted batch kinetic experiments using a promising SARP and determined the effects of experimental variables such as pH, reagent dose, photocatalyst dose, natural organic matter, and dissolved oxygen on the degradation kinetics of chlorate and TCE.

Title: Reductive Immobilization and Removal of Arsenic and Selenium from Contaminated Water using Advanced Reduction Processes (Jan. 2014 to Jan. 2017), funded by the National Priorities Research Program, Qatar National Research Fund (NPRP No. 6-729-2-301), Role: Prepared a proposal and managed a project as a lead researcher

- Developed an advanced reduction process (ARP) to treat arsenic and selenium
- Combined a reducing agent (e.g., sulfite, dithionite, sulfide, or ferrous iron) and an activating method (e.g., ultraviolet light) to generate highly reactive reducing free radicals for the reduction of arsenic and selenium.
- Identified a reaction mechanism for the removal of As and Se through reductive precipitation, resulting in the formation of solids.
- Conducted characterization of solid surfaces using SEM, TEM, XPS, and XRD techniques.

Title: Disinfection Byproducts Removal from Water Using Advanced Reduction Process (Jan. 2012 to Jan. 2015), funded by the National Priorities Research Program, Qatar National Research Fund (NPRP No. 4-1174-2-458), Role: Managed a project as a lead researcher

- Developed an advanced reduction process (ARP) to destroy bromate and chlorate
- Studied the reaction mechanism of destroying bromate and chlorate
- Evaluated the effects of process variables, including pH, reducing agent concentration, light intensity, and concentration of competing ions on degradation kinetics of bromate and chlorate to determine optimal conditions.
- Calculated quantum yields to compare the effectiveness of bromate removal by two UV lamps with different light spectra.

Title: Electrochemical Removal of Contaminants using ZVI Packed Bed Bipolar Electrolytic Cell (March 2011 to Dec. 2011), funded by Commercialization of Patent Technologies Program of Seoul Business Agency (Grant No. PA 100095), Republic of Korea, Role: Guided graduate students

- Investigated the performance of the zero-valent iron-packed bed bipolar electrolytic cell for the removal of nitrate and trichloroethylene

Title: Development of Nanometals for Source Zone Remediation (Jan. 2008 to Jan. 2011), funded by Natural Sciences and Engineering Research Council of Canada, Role: Managed a project as a lead researcher.

- Assessed the effectiveness of nanometals and their delivery systems for the removal or conversion of chlorinated hydrocarbons into benign daughter products in porous media systems.
- Evaluated the mobility of nanometals in one- and two-dimensional column tests.
- Utilized MATLAB program to calculate interaction energies of polymer surface-modified nanoparticles.
- Employed MATLAB program to predict the transport of nanoparticles in soil columns.
- Investigated the field-scale utility of nanomaterials for NAPL (Non-Aqueous Phase Liquid) remediation.

Title: The Delivery of Reactive Nanometals for Source Zone Remediation (Dec. 2007 to Dec. 2009), funded by Ontario Centres of Excellence, Canada, Role: Managed a project as a lead researcher.

- Synthesized iron nanoparticles.
- Developed surface-modified nanoparticles using polymers to enhance transport and targeting capabilities.
- Characterized the surface properties of iron nanoparticles using SEM, TEM, XRD, or Zetasizer analysis.
- Evaluated the stability of surface-modified nanoparticles and their reactivity in reducing trichloroethylene.
- Optimized the transport of nanoiron in the porous matrices for various geochemical environments.

Title: Bioremediation of Chlorinated Ethenes in the Constructed Wetlands at WPAFB: Chlorinated solvent-degrading microbes and biogeochemical processes at the constructed wetland site and in simulated systems (greenhouse mesocosms) (Nov. 2006 to Nov. 2007), funded by Air Force Institute of Technology, USA, Role: Managed a project as a lead researcher.

- Examined degradation of chlorinated ethenes in soil column tests simulating a constructed wetland
- Analyzed redox-sensitive constituents in a constructed wetland
- Characterized the fate of chlorinated ethenes in the groundwater flowing through the WPAFB (Wright-Patterson Air Force Base) constructed wetland

Title: Degradative Solidification/Stabilization of Aliphatic Chlorinated Hydrocarbons (Aug. 2001 to Dec. 2005), funded by Gulf Coast Hazardous Substance Research Center, USA, Role: Managed a project as a lead researcher.

- Examined the applicability of the iron-based degradative solidification/stabilization (DS/S-Fe(II)) to treat chlorinated aliphatic hydrocarbons (e.g., 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, and 1,2-dichloroethane)
- Characterized dechlorination kinetics dependent on factors such as Fe(II) dose, pH, and the initial target concentration and identified the degradation products and reaction pathways
- Verified degradation kinetics of 1,1,1-TCA in a mixture of Fe(II), cement, and iron-bearing phyllosilicates

- Studied the importance of molecular properties on dechlorination kinetics by linear free energy relationships (LFER) analysis

Title: Development of Optimum Electrokinetic Remediation considering Contaminated Soil Properties (March 1999 to Feb. 2000), funded by the Ministry of Science and Technology, Republic of Korea, Role: a lead researcher.

- Designed an electrokinetic cell for environmental remediation purposes.
- Investigated the removal of Pb(II) using an electrokinetic process.
- Developed an enhanced method to increase the efficiency of lead removal.

PUBLICATIONS (1: the First Author, *: Corresponding Author, §: Presenter)

Journal articles

23. **Bahngmi Jung**^{1*}, Fatima Abu-Rub, Abdellatif El Ghenymy, Wei Deng, Ying Li, Bill Batchelor, Ahmed Abdel-Wahab, “Photocatalytic reduction of chlorate in aqueous TiO₂ suspension with hole scavenger under simulated solar light”, *Emergent Materials*, 2021, 4, 435-446

22. **Bahngmi Jung**^{1*}, Wei Deng, Ying Li, Bill Batchelor, Ahmed Abdel-Wahab, “Simulated solar light-driven photocatalytic degradation of trichloroethylene in water using BiOBr promoted by sulfite addition” *Environmental Sciences Europe*, 2020, 32(8), 1-15

21. Wei Deng¹, Fuping Pan, Bill Batchelor, **Bahngmi Jung**, Peng Zhang, Ahmed Abdel-Wahab, Hong-Cai Zhou, Ying Li*, “Mesoporous TiO₂-BiOBr Microspheres with Tailorable Adsorption Capacities for Photodegradation of Organic Water Pollutants: Probing Adsorption-Photocatalysis Synergy by Combining Experiments and Kinetic Modeling”, *Environmental Science: Water Research & Technology*, 2019, 5, 769-781.

20. Yuhang Duan^{1*}, Ahmed Abdel-Wahab, **Bahngmi Jung**, Bill Batchelor, and Vishakha Kaushik, “Arsenic removal using advanced reduction process-a kinetic study”, *Journal of Water Process Engineering*, 2018, 23, 314-319

19. **Bahngmi Jung**^{1*}, Aya Safan, Yuhang Duan, Vishakha Kaushik, Bill Batchelor, Ahmed Abdel-Wahab*, “Removal of Arsenite by Reductive Precipitation in Dithionite Solution Activated by UV light”, *Journal of Environmental Science*, Vol. 74, 2018, 168-176

18. **Bahngmi Jung**^{1*}, Aya Safan, Yuhang Duan, Vishakha Kaushik, Bill Batchelor, Ahmed Abdel-Wahab*, “Removal of Se(IV) by the dithionite/UV advanced reduction process: effects of process variables,” *Environmental Engineering Science*, Vol. 35, No. 9, 2018, 927-936

17. Wei Deng¹, Huilei Zhao, Fuping Pan, Xuhui Feng, **Bahngmi Jung**, Ahmed Abdel-Wahab, Bill Batchelor, and Ying Li*, Response to comment on “Visible-Light-Driven Photocatalytic Degradation of Organic Water Pollutants Promoted by Sulfite Addition” *Environmental Science and Technology*, 2018, 52(3), 1677-1678

16. Wei Deng¹, Huilei Zhao, Fuping Pan, Xuhui Feng, **Bahngmi Jung**, Ahmed Abdel-Wahab, Bill Batchelor, and Ying Li*, "Visible-Light-Driven Photocatalytic Degradation of Organic Water Pollutants Promoted by Sulfite Addition" *Environmental Science and Technology*, 2017, 51(22):13372-13379.
15. Guiying Rao¹, Huilei Zhao, Jiatang Chen, **Bahngmi Jung**, Ahmed Abdel-Wahab, Bill Batchelor, and Ying Li*, "FeOOH and Fe₂O₃ co-grafted TiO₂ photocatalysts for bisphenol A degradation in water" *Catalysis Communications*, 97, 2017, 125-129.
14. Yuhang Duan^{1*}, Vishakha Kaushik, **Bahngmi Jung**, Bill Batchelor, and Ahmed Abdel-Wahab, "Kinetic study of selenium removal using advanced reduction process (ARP) with dithionite," *Environmental Engineering Science*, Vol. 35, No. 3, 2018, 169-175
13. Yuhang Duan^{1*}, Guofan Luo, **Bahngmi Jung**, Vishakha Kaushik, Bill Batchelor, and Ahmed Abdel-Wahab, "Photochemical Degradation of Arsenic and Selenium with Advanced Reduction Processes (ARPs) – Effects of Reagents", *Environmental Engineering Science*, Vol. 34, No.7, 2017, 481-488
12. **Bahngmi Jung**^{1*}, Aya Safan, Venkata Sai Vamsi Botlaguduru, Bill Batchelor, Ahmed Abdel-Wahab*, "Impact of natural organic matter on bromate removal in the sulfite/UV-L advanced reduction process," *Water Science and Technology: Water Supply*, 2017, 461-471
11. **Bahngmi Jung**^{1*}, Raghavendran Sivasubramanian, Bill Batchelor, Ahmed Abdel-Wahab*, "Chlorate reduction by dithionite/UV advanced reduction process (ARP)," *International Journal of Environmental Science and Technology*, January 2017, Vol. 14, Issue 1, 123-134
10. **Bahngmi Jung**^{1*}, Aya Safan, Bill Batchelor, Ahmed Abdel-Wahab*, "Spectroscopic study of Se(IV) removal from water by reductive precipitation using sulfide," *Chemosphere*, Vol. 163, November 2016, Pages 351-358.
9. **Bahngmi Jung**^{1*}, Hajar Farzaneh, Ahmed Khodary, Ahmed Abdel-Wahab*, "Photochemical degradation of trichloroethylene by sulfite-mediated UV irradiation," *Journal of Environmental Chemical Engineering*, Volume 3, Issue 3, September 2015, Pages 2194-2202
8. **Bahngmi Jung**^{1*}, Rana Nicola, Bill Batchelor, Ahmed Abdel-Wahab, "Effect of Low- and Medium-Pressure Hg UV Irradiation on Bromate Removal in Advanced Reduction Process," *Chemosphere*, Volume 117, December 2014, Pages 663-672
7. **Bahngmi Jung**^{1*}, Denis O'Carroll, Brent Sleep, "The influence of humic acid and clay content on the transport of polymer-coated iron nanoparticles through sand," *Science of The Total Environment*, Volume 496, October 2014, Pages 155-164
6. **Bahngmi Jung**^{1*}, Bill Batchelor, Joo-Yang Park, Ahmed Abdel-Wahab, "Linear Free Energy Relationship Analysis of Chlorinated Hydrocarbons in Cement slurries," *In. J. Environ. Res.* 8(3), Summer 2014, Pages 819-830

5. **Bahngmi Jung**¹, Ja-Won Shin, Praveen A. Ghorpade, Joo-Yang Park*, "Dechlorination of liquid wastes containing chlorinated hydrocarbons by a binder mixture of cement and slag with Fe(II)," *Science of The Total Environment*, Volume 449, April 2013, Pages 443-450
4. **Bahngmi Jung**^{1*}, Bill Batchelor, "Influence of Iron-bearing Phyllosilicates on the Dechlorination Kinetics of 1,1,1-Trichloroethane in Fe(II)/Cement Slurries", *Chemosphere*, Volume 68, Issue 7, July 2007, Pages 1254-1261
3. **Bahngmi Jung**^{1*}, Bill Batchelor, "Analysis of Dechlorination Kinetics of Chlorinated Aliphatic Hydrocarbons by Fe(II) in Cement Slurries," *Journal of Hazardous Materials*, Volume 152, Issue 1, 21 March 2008, Pages 62-70
2. **Bahngmi Jung**^{1*}, Bill Batchelor, "Dechlorination of Trichloroethylene formed from 1,1,2,2-Tetrachloroethane by Dehydrochlorination in Portland Cement Slurry including Fe(II)", *Chemosphere*, Volume 71, Issue 4, March 2008, Pages 726-734
1. **Bahngmi Jung**^{1*}, Bill Batchelor, "Kinetics of Transformation of 1,1,1-Trichloroethane by Fe(II) in Cement Slurries", *Journal of Hazardous Materials*, Volume 163, Issues 2-3, 30 April 2009, Pages 1315-1321

Conference Proceedings

15. **Bahngmi Jung**^{1§}, Bill Batchelor, Ahmed Abdel-Wahab, "Effect of medium-pressure and low-pressure UV irradiation on bromate removal in an Advanced Reduction Process (ARP)," in the 248th American Chemical Society National Meeting, August 10-14, 2014, San Francisco, CA
14. **Bahngmi Jung**^{1§}, Bill Batchelor, Ahmed Abdel-Wahab, "Disinfection byproducts removal from water using Advanced Reduction Process," in the 3rd TAMUQ Research & Industry Showcase, April 7, 2014.
13. **Bahngmi Jung**^{1§}, Bill Batchelor, Ahmed Abdel-Wahab, "Bromate Removal from Water using Advanced Reduction Process," presented in International Conference on the "Challenges in Environmental Science and Engineering," October 29 - November 2, 2013, Daegu, Korea
12. Ahmed Abdel-Wahab^{1§}, Bill Batchelor, **Bahngmi Jung**, Nasr Ben Salah, "Advanced-Reduction Processes for Destroying Persistent Oxidized Contaminants," in the Research-Industry Partnership showcase, April 22, 2013.
11. **Bahngmi Jung**^{1§}, Dong-Suk Han, Ahmed Khodary, Ahmed Abdel-Wahab, "Reactive Contact System for Arsenic Removal Using Iron and Sulfur-Based Environment," the 2012 World Congress on Advances in Civil, Environmental, and Materials Research, COEX, Seoul, Korea, August 26-30, 2012.
10. **Bahngmi Jung**^{1§}, Denis M. O'Carroll, and Brent E. Sleep, "The Effect of Natural Organic Matter on the Stability and Mobility of Polymer-coated Iron Nanoparticles," the 240th American Chemical Society National Meeting, August 22-26, 2010, Boston, MA

9. **Bahngmi Jung^{1s}**, Denis M. O'Carroll, and Brent E. Sleep, "Surface-Modified Nanoscale Zero Valent Iron (NZVI) for Environmental Remediation," invited talk in the US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Aug. 11~15, 2010, Seattle, WA
8. **Bahngmi Jung^{1s}**, Nataphan Sakulchaicharoen, Denis M. O'Carroll, Jose E. Herrera, and Brent E. Sleep, "Characterization of Iron Nanoparticles Stabilized for Enhanced Delivery to TCE Source Zones," the 237th American Chemical Society National Meeting, March 22-26, 2009, Salt Lake City, UT
7. **Bahngmi Jung^{1s}**, Denis O'Carroll, Brent E. Sleep, "The Stability and Mobility of Surface-Modified Iron Nanoparticles in Soil Column Tests," the 13th International Conference on Surface and Colloid Science and 83rd ACS Colloid & Surface Science Symposium, June14-19 2009, Columbia University, New York
6. **Bahngmi Jung^{1s}**, Bill Batchelor, "Reductive Dechlorination of Chlorinated Aliphatic Hydrocarbons in Iron-Based Degradative Solidification/Stabilization," US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Aug. 9~12, 2007, Washington D.C.
5. **Bahngmi Jung^{1s}**, Bill Batchelor, "Transformation of 1,1,2,2-Tetrachloroethane and Trichloroethylene in Fe(II)-based Degradative Solidification/Stabilization", the 231st American Chemical Society National Meeting, Atlanta, GA, March 2006
4. **Bahngmi Jung^{1s}**, Bill Batchelor, "Transformation of 1,1,1-Trichloroethane by Fe(II) in Cement Slurries", the fourth international conference on Remediation of Chlorinated and Recalcitrant compounds, May 24-47, 2004, Monterey, California
3. **Bahngmi Jung^{1s}**, SangJae Han, SooSam Kim, "The Study of Characteristic Changes in the Sample due to Pb(II) Concentration during the Electrokinetic Remediation Process," Proceedings of the Korea Civil Engineering Society, Vol. II., p. 477-480, 1999
2. **Bahngmi Jung^{1s}**, SangJae Han, SooSam Kim, "An Experimental Study of Electrokinetic and Enhanced Process with Kaolin Specimen Contaminated with Heavy Metals," Proceedings of the Korea of Geotechnical Engineering, Korean Geotechnical Society Fall'99 National Conference, Seoul, Korea, October 30, 1999, p. 241-246
1. Sangchul Lim^{1s}, **Bahngmi Jung**, SangJae Han, SooSam Kim, "Effect of Zeta Potential on Electroosmotic Permeability of Soil Contaminated with Lead" Proceedings of the Korea Civil Engineering Society, p.443-446, 1999

Poster Presentation

19. **Bahngmi Jung^{1s}**, and Ahmed Abdel-Wahab, "Removal of arsenic by UV photoreduction in the presence of dithionite," in the 253rd American Chemical Society National Meeting, April 2-6, 2017, San Francisco, CA

18. Aya S. Safan¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "The elimination of selenium from contaminated water using sulfide or dithionite activated by UV light," Qatar Foundation Annual Research Conference 2016 (ARC'16), March 22-23, 2016, Doha, Qatar
17. **Bahngmi Jung**¹⁵, Aya S. Safan, Ahmed Abdel-Wahab, "Removal of arsenic and selenium from contaminated water using advanced reduction process," in the second international conference on desalination and environment, January 23-26, 2016, Doha, Qatar
16. Aya S. Safan¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Removal of selenium by advanced reduction processes," in the 4th TAMUQ Research & Industry Showcase, April 23, 2015, Doha, Qatar.
15. Mohamed Soliman¹⁵, Aya S. Safan, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Impact of humic acid on bromate removal in advanced reduction processes," in the 4th TAMUQ Research & Industry Showcase, April 23, 2015, Doha, Qatar.
14. Raghavendran Sivasubramanian¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Quantum yield calculations to evaluate the efficiency of bromate reduction," in the 4th TAMUQ Research & Industry Showcase, April 23, 2015, Doha, Qatar.
13. **Bahngmi Jung**¹⁵, Bill Batchelor, Ahmed Abdel-Wahab, "Photochemical degradation of inorganic disinfection byproducts using advanced reduction process (ARP), in the second international conference on desalination using membrane Technology, July 26-29, 2015, Singapore, Singapore.
12. Farzaneh Hajar¹, **Bahngmi Jung**⁹, Ahmed Khodary, Ahmed Abdel-Wahab, "Reductive dechlorination of trichloroethylene in a sulfite-mediated UV photochemical system," in the 248th American Chemical Society National Meeting, August 10-14, 2014, San Francisco, CA
11. Farzaneh Hajar¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Degradation of trichloroethylene using Advanced Reduction Processes," in the 3rd TAMUQ Research & Industry Showcase, April 7, 2014.
10. Raghavandran Sivasubramanian¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Removal of Chlorate by Advanced Reduction Process," in the 3rd TAMUQ Research & Industry Showcase, April 7, 2014.
9. Syed Faisal Mustafa¹⁵, **Bahngmi Jung**, Ahmed Abdel-Wahab, "Chloride removal by electrocoagulation and lime-softening," in the 3rd TAMUQ Research & Industry Showcase, April 7, 2014.
8. **Bahngmi Jung**¹⁵, Bill Batchelor, Ahmed Abdel-Wahab, "An ATR-FTIR Spectroscopic Approach for Measuring Active Functional Groups in Arsenic and Selenium Stabilization in Sulfur Environment", in 2013 American Institute of Chemical Engineers (AIChE) Annual Meeting, November 3-8, 2013, San Francisco, CA
7. **Bahngmi Jung**¹⁵, Nasr Bensalah, Ahmed Abdel-Wahab, "Bromate Removal from Water using UV-M/sulfite Advanced Reduction Process," Research and Industry: Fostering Synergy, Qatar National Convention Center, Doha, Qatar, 22 April 2013.

6. **Bahngmi Jung**^{1§}, Bill Batchelor, Joo-Yang Park, Ahmed Abdel-Wahab, "Linear Free Energy Relationships on Reductive Dechlorination of Chlorinated Aliphatic Hydrocarbons in Cement/Fe(II) Slurries," Research and Industry: Fostering Synergy, Qatar National Convention Center, Doha, Qatar, 21 May 2012
5. **Bahngmi Jung**^{1§}, Denis M. O'Carroll, and Brent E. Sleep, "Stabilization of Nanoscale Zero Valent Iron with Green Tea," the 240th American Chemical Society National Meeting, August 22-26, 2010, Boston, MA
4. **Bahngmi Jung**^{1§}, Denis O'Carroll, Brent E. Sleep, "Enhanced transport of biodegradable polymer-coated nanoiron particles in sand columns," the American Geophysical Union (AGU) Joint Assembly, May 24-27, 2009, Toronto, Ontario, Canada
3. **Bahngmi Jung**^{1§}, Dibyendu Mukherjee, Abinash Agrawal, "Characterization of Degradation of Chlorinated Ethenes and Redox-Sensitive Constituents in Column Reactors Simulating Constructed Wetland Conditions", Partners in Environmental Technology Technical Symposium & Workshop sponsored by SERDP and ESTCP, Dec. 4-6, 2007, Washington, D.C
2. **Bahngmi Jung**^{1§}, Bill Batchelor, "Transformation of 1,1,1-Trichloroethane in Fe(II)-Based Degradative Solidification/Stabilization", the 231st American Chemical Society National Meeting, Atlanta, GA, March 2006
1. **Bahngmi Jung**^{1§}, Bill Batchelor, "Transformation of 1,1,1-Trichloroethane by Fe(II) in Cement Slurries", the fourth international conference on Remediation of Chlorinated and Recalcitrant compounds, Monterey, CA, USA, 2004

PROFESSIONAL AFFILIATIONS

American Water Works Association

American Chemical Society

Association of Environmental Engineering and Science Professors

MAJOR TECHNICAL REPORTS

"Solar-driven Advanced Reduction Processes (SARP) for Destroying Persistent Contaminants in Water," Final Technical Report (NPRP 8-1406-2-605), submitted to Qatar National Research Fund, Doha, Qatar, 2019

"Reductive Immobilization and Removal of Arsenic and Selenium from Contaminated Water using Advanced Reduction Processes," Final Technical Report (NPRP 6-729-301), submitted to Qatar National Research Fund, Doha, Qatar, 2017

"Disinfection Byproducts Removal from Water using Advanced Reduction Processes," Final Technical Report (NPRP 4-1174-2-458), submitted to Qatar National Research Fund, Doha, Qatar, 2015

“Degradative Solidification/Stabilization of Aliphatic Chlorinated Hydrocarbons,” Final Report, submitted to Gulf Coast Hazardous Substance Research Center, USA, 2005.

“Contaminated Soil Remediation Technologies and Regulations Development,” Final Report, submitted to the Ministry of Environment, the Republic of Korea, 1998.

MENTORING EXPERIENCE

Masters at Texas A&M University at Qatar

Aya Safan, Thesis title “Selenium removal from water using advanced reduction process,” graduated in August 2016.

Raghavendran Sivasubramanian, Thesis title “Chlorate removal using advanced reduction processes,” graduated in August 2015.

Syed Faisal Mustafa, Thesis title “Removal of chloride from water by advanced softening process using electrochemically generated aluminum,” graduated in August 2014.

Hajar Farzaneh, Thesis title “Trichloroethylene removal using UV-Sulfite based Advanced Reduction processes,” graduated in December 2014.

Masters at Hanyang University

Yuri Park, thesis title “Reductive dichlorination of trichloroethylene using converter slag and wustite amended with Fe(II),” graduated in February 2012.

Hanki Kim, thesis title “Electrochemical removal of nitrate and ethanolamine using packed bed zero-valent iron bipolar electrode reactor,” graduated in February 2012.

Ran Kim, thesis title “Treatment of ethanolamine wastewater using granular activated carbon as particle electrodes,” graduated in February 2013.