Amisha D. Shah

Hampton Hall 3145A, Lyles School of Civil and Construction Engineering
550 Stadium Mall Drive, West Lafayette, IN 47907-2051
Phone: 765-496-2470 / E-mail: adshah@purdue.edu

Education

Ph.D. Environmental Engineering, Georgia Institute of Technology, USA, 2002-2008.
Dissertation Title: "Assessing the Fate of Antibiotics during Chlorination and Nanofiltration in Water Treatment" (Advisors: Dr. Ching-Hua Huang and Dr. Jae-Hong Kim)

B.S. Chemical Engineering, Washington University in St. Louis, USA, 2002.

Academic Appointments

August 2022 - present	Associate Professor in Civil Engineering and Sustainability Engineering and Environmental Engineering, Purdue University
August 2014 - July 2022	Assistant Professor in Civil Engineering and Environmental and Ecological Engineering, Purdue University
Nov. 2012- May 2014	Research Associate, EAWAG, Switzerland (Advisor: Urs von Gunten)
Sept. 2008- Nov. 2012	Postdoctoral Associate, Yale University (Advisor: William Mitch)
Sept. 2002- Aug. 2008	Graduate Research Assistant, School of Civil and Environmental Engineering, Georgia Institute of Technology

Awards and Honors

1. 2026 ACS ENVR Dionysios Dionysiou Established Investigator Award
2. Lyles School of Civil and Construction Engineering Wansik Research Award (2024)
3. Division of Environmental and Ecological Engineering Instructional Excellence Award (2018)
2. President's Fellowship, Georgia Institute of Technology (2002-2006)
3. IGERT, NSF Fellowship (2002-2003)

Peer-Reviewed Journal Publications

1. Isaacson, K.P., Le. H., Verma, A., Whelton, A.J., Youngblood, J.P., Shah, A.D., * (2025) "Formation and aqueous phase leaching of organic compounds following thermal degradation of commercial drinking water plastic pipes", ***Journal of Hazardous Materials***, 489, 137562.

2. Ding, X., Jiang, J., Tasoglou, A., Shah, A.D., Jung, N. (2025) "Peracetic acid emissions and exposures during building disinfection events" ***Building and Environment***, 269, 112221.

3. Isaacson, K.P., Le. H., Verma, A., Youngblood, J.P., Shah, A.D., Whelton, A.J.* (2024) "Plastic water supply connectors: Leaching, hydrocarbon contamination, and decontamination", ***AWWA Water Scienc***e, 6 (4), 1-13, **https://doi.org/10.1002/aws2.1382**

4. Ding, X., Lu, H., Jiang, J., Tasoglou, A., Shah, A.D., Jung, N. (2023) "Real-time indoor sensing of volatile organic compounds during building disinfection events via photoionization detection and proton transfer reaction mass spectrometry" ***Building and Environment***, 246, 110953.

5. Ra, K., Proctor, C.R., Ley, C., Angert, D., Noh, Y., Isaacson, K., Shah, A.D., Whelton, A.J. (2023) "Investigating Water Safety in Multi-purpose Buildings used as an Elementary School and Plumbing Remediation Effectiveness" ***PLOS Water***, https://doi.org/10.1371/journal.pwat.0000141.

6. Mathews, C.L., Wasel, O., Isaacson, K.P., Proctor, C.R., Tariq, M., Shah, A.D., Freeman, J.L., Whelton, A.J. (2023) "Crosslinked polyethylene (PEX) drinking water pipe: Carbon leaching, impacts on microbial growth, and developmental toxicity to zebrafish" ***Environmental Advances***, 13, 100386.

7. Jankowski, C., Gustafson, L.A, Isaacson, K.P., Del Real, K.R., Noh, Y., Ehde, A.B., Larsen, M.B., Ra, K., Palmegiani, M.A., Fleming, C.E., Schmidt, W.J., Shah, A.D., Proctor, C.R., Whelton, A.J. (2023) "Residential Water Softeners Release Carbon, Consume Chlorine, and Require Remediation after Hydrocarbon Contamination" ***Environmental Science and Technology***, 57(23), 8750-8759.

8. Ding, X., Jiang, J., Tasoglou, A., Huber, H., Shah, A.D., and Jung, N. (2023) Evaluation of Workplace Exposures to Volatile Chemicals During COVID-19 Building Disinfection Activities with Proton Transfer Reaction Mass Spectrometry, ***Annals of Work Exposures and Health***, 67 (4), 546-551.

9. Modiri-Gharehveran, M. and Shah A.D. (2021) "Influence of Dissolved Organic Matter on Carbonyl Sulfide and Carbon Disulfide Formation from Dimethyl Sulfide During Sunlight Photolysis", ***Water Environment Research***, 93 (12), 2982-2997, DOI: 10.1002/wer.1650.

10. Jiang, J., Ding, X., Isaacson, K.P., Tasoglou, A., Huber, H., Shah, A.D., Jung, N., Boor, B.E. (2021) "Ethanol-based Disinfectant Sprays Drive Rapid Changes in the Chemical Composition of Indoor Air in Residential Buildings", ***Journal of Hazardous Materials Letters***, 2, 100042.

11. Haflich, H.M., Membreno, M.A.R., Jo, H., Huang, K., Toomey, M., Howarter, J. Shah, A.D. (2021) "Effects of Halides on Polyamide-based Membrane flux and Monomer Degradation during Chloramination", ***Journal of Membrane Science***, 639, 119717.

12. Jiang, J., Ding, X., Tasoglou, A., Huber, H., Shah, A.D., Jung, N., Boor, B.E. (2021) "Real Time Measurements of Botanical Disinfectant Emissions, Transformations, and Multi-Phase Inhalation Exposures in Buildings", ***Environmental Science and Technology Letters***, 8, 7, 558-566.

13. Odimayomi, T.O., Proctor, C.R., Wang, Q.E., Sabbaghi, A., Peterson, K.S., Yu, D.J., Lee, J., Shah, A.D., Ley, C.J., Noh, Y., Smith, C.D., Webster, J.P., Milinkevich, K., Lodewyk, M.W., Jenks, J.A., Smith, J.F., Whelton, A.J. (2021) "Water Safety Attitudes, Risk Perception, Experiences, and Education for Households Impacted by the 2018 Camp Fire, California" ***Natural Hazards***, published 03 May 2021, DOI: 10.1007/s11069-021-04714-9.

14. Huang, K., Reber, K., Toomey, M., Howarter, J., Shah, A.D. (2021) "Reactivity of the Polyamide Membrane Monomer with Free Chlorine: Role of Bromide" ***Environmental Science and Technology***, 55, 4, 2575-2584.

15. Isaacson, K.P., Proctor, C.R., Wang, Q.E., Edwards, E.Y., Noh, Y., Shah, A.D., Whelton, A.J. (2021) "Drinking Water Contamination from the Thermal Degradation of Plastics: Implications for Wildfire and Structure Fire Response" ***Environmental Science: Water Research and Technology*** (Communication), 7, 274-284.

16. Shah, A.D. (2021) "Conducting Research during COVID-19: An Assistant Professor's Perspective", ***Susan Bulkeley Butler Center for Leadership Excellence: Working Paper Series****, 4 (Special Issue 1),* 67-72.

17. Proctor, C.R., Lee, J., Yu, D., Shah, A.D., Whelton, A.J. (2020) "Wildfire Caused Widespread Drinking Water Distribution", ***American Water Works Association (AWWA): Water Science***, 2 (4), 1-14.

18. Modiri-Gharehveran, M., Hain, E., Blaney, L., Shah, A.D.* (2020) "Influence of Dissolved Organic Matter on Carbonyl Sulfide and Carbon Disulfide Formation from Cysteine during Sunlight Photolysis", ***Environmental Science: Processes and Impacts***, 22, 1852-1864.

19. Cao, G.[G], Huang, K.[G], Whelton, A.J., Shah, A.D. (2020) "Formation and Sorption of Trihalomethanes from Cross-linked Polyethylene Pipes following Chlorinated Water Exposure", ***Environmental Science: Water Research and Technology***, 6, 2479-2491.

20. Salehi, M., Odimayomi, T., Ra, K., Ley, C., Julien, R., Nejadhashemi, A.P., Hernandez-Suarez, J.S., Mitchell, J., Shah, A.D., Whelton, A. (2020) "An investigation of spatial and temporal drinking water quality variation in green residential plumbing", ***Building and Environment***, 169, 106566.

21. Le, T. X H., Haflich, H., Shah, A.D., Chaplin, B.P. (2019) "Energy-efficient electrochemical oxidation of perfluoroalkyl substances using a Ti_4O_7 reactive electrochemical membrane anode", ***Environmental Science and Technology Letters,*** 6, 8, 504-510.

22. Huang, K., Reber, K.P., Toomey, M.D., Haflich, H., Howarter, J.A., Shah, A.D. (2019) "Reactivity of the polyamide membrane monomer with free chlorine: Reaction kinetics, mechanisms, and the role of chloride", ***Environmental Science and Technology,*** 53, 14, 8167-8176.

23. Huang, K. and Shah A.D. (2018) "Role of tertiary amines in enhancing trihalomethanes and haloacetic acids formation during chlorination of phenolic compounds and a natural organic matter extract", ***Environmental Science: Water Research & Technology***, 4, 663-679.

24. Liu, Z.Q., Shah, A.D., Salhi, E., Bolotin, J., von Gunten, U. (2018)" Formation of brominated trihalomethanes during chlorination or ozonation of natural organic matter extracts and model compounds in saline water", ***Water Research***, 143, 492-502.

25. Modiri-Gharehveran, M. and Shah A.D. (2018) "Indirect photochemical formation of carbonyl sulfide and carbonyl disulfide in natural waters: Role of organic sulfur precursors, water quality constituents, and temperature", ***Environmental Science and Technology***, 52, 9108-9117.

26. Shah A.D., Liu, Zhengqian, Salhi E., Höfer, T., and von Gunten U. (2015) "Peracetic acid oxidation of saline waters in absence and presence of H_2O_2: secondary oxidant and disinfection by-product formation", ***Environmental Science and Technology***, 49, 1698-1705.

27. Shah A.D., Liu, Zhengqian, Salhi E., Höfer, T., Werschkun, B., and von Gunten U. (2015) "Formation of disinfection by-products during ballast water treatment with ozone, chlorine, and peracetic acid: influence of water quality parameters", ***Environmental Science: Water Research & Technology***, 1, 465-480.

28. Werschkun, B., Banerji, S., Oihane C., Basurko Matej, D., Fuhr, F., Gollasch, S., Grummt, T., Haarich, M., Jha, A.N., Kacan, S., Kehrer, A., Linders, J., Mesbahi, E., Pughiuc, D., Richardson, S.D., Schwarz-Schulz, B., Shah, A.D., Theobald, N., von Gunten, U., Wieck, S., Höfer, T. (2014) "Emerging risks from ballast water treatment: The run-up to the International Ballast Water Management Convention", ***Chemophere***, 112, 256-266.

29. Shah, A.D.; Dai, N.; Mitch, W.A. (2013) "Application of Ultraviolet, Ozone, and Advanced Oxidation Treatments to Washwaters to Destroy Nitrosamines, Nitramines, Amines, and Aldehydes formed during Amine-based Carbon Capture", ***Environmental Science and Technology,*** 47, 2799-2808.

30. Dai, N.; Shah, A.D.; Hu, L.; Plewa, M.J.; McKague, B.; Mitch, W.A. (2012) "Measurement of nitrosamine and nitramine formation from NO_x reactions with amines during amine-based carbon dioxide capture for postcombustion carbon sequestration", ***Environmental Science and Technology,*** 46, 9793-9801.

31. Shah, A.D.; Krasner, S.; Lee, C.F.T.; von Gunten, U.; Mitch, W.A. (2012) "Trade-offs in Disinfection Byproduct Formation Associated with Precursor Preoxidation for Control of N-Nitrosodimethylamine Formation", ***Environmental Science and Technology,*** 46, 4809-4818.

32. Shah, A.D.; Mitch, W.A. (2012) "Halonitroalkane, halonitriles, haloamides, and N-nitrosamines: a critical review of N-nitrogenous disinfection byproduct (N-DBP) formation pathways", ***Environmental Science and Technology***, 46, 119-131.

33. Shah, A. D.; Huang, C.-H.; Kim, J.-H. (2012) "Mechanisms of Antibiotic Removal by Nanofiltration Membranes: Model Development and Application", ***Journal of Membrane Science,*** 389, 234-244.

34. Shah, A. D.; Kim, J.-H.; Huang, C.-H. (2011) "Tertiary Amines Enhance Reactions of Organic Contaminants with Aqueous Chlorine", ***Water Research,*** 45, 6087-6096.

35. Shah, A.D.; Dotson, A.D.; Linden, K.G.; Mitch, W.A. (2011) "Impact of UV Disinfection Combined with Chlorination/Chloramination on the Formation of Halonitromethanes and Haloacetonitriles in Drinking Water", ***Environmental Science and Technology***, 45, 3657-3664.

36. Shah, A. D.; Kim, J. -H.; Huang, C. -H. (2006) "Reaction Kinetics and Transformation of Carbadox and Structurally Related Compounds with Aqueous Chlorine", ***Environmental Science and Technology,*** 40**,** 7228-7235**.**

37. Dodd, M. C., Shah, A. D., von Gunten, U. and Huang, C.-H. (2005) "Interactions of Fluoroquinolone Antibacterial Agents with Aqueous Chlorine: Kinetics, Reaction Mechanisms, and Transformation Pathways", ***Environmental Science and Technology***, 39, 7065-7076.

38. Carlsson, A.E., Shah, A.D., Elking, D.,Karpova, T.S., and Cooper, J.A. (2002) "Quantitative Analysis of Actin Patch Movement in Yeast", ***Biophysical Journal***, 82, 2333-2343.

39. Croat, T.B. and Shah, A. (2001) "New Amazonian Taxa of *Philidendron* (Araceae)", ***Novon***, 11, 381-388.

Submitted Peer-Reviewed Journal Publications

1. Zyaykina, N.N., Hua, I., Miller, C.A., VanDermark, R.J., Donohoe, B.C., Soh, L., Proctor, C., Yip, N., Wang, G., and Shah, A.D. "Presence of Critical Materials in U.S. Municipal Solid Waste Landfill Leachates", *submitted on May 12, 2026 to* ***Environmental Science & Technology***

Book Chapters and Final Reports

1. Chaplin, B., and Shah, A. Final Report: Reactive Electrochemical Membrane (REM) Reactors for the Oxidation of PFAS-Impacted Water, Strategic Environmental Research and Development Program (SERDP) Project ER18-1491,

2. Huang, C.-H., Dodd, M. C. and Shah, A. D. 2007., Reaction and Transformation of Antibacterial Agents with Aqueous Chlorine under Water Treatment Relevant Conditions, in Fate of Pharmaceuticals in the Environment and in Water Treatment Systems, edited by D. Aga, CRC Press, Taylor & Francis Books.

3. Dotson, A.D.; Shah, A.D.; Lyon, B.; Weinberg, H.S.; Mitch, W.A.; Linden, K.G. "Impact of UV Location and Sequence on Byproduct Formation", Final Report, Water Research Project # 4019.

Conference Proceedings and Extended Abstracts

1. Ding, X., Jiang, J., Tasoglou, A., Huber, H., Shah, A.D., and Jung, N. "High time-resolution monitoring of volatile organic compounds during multi-surface disinfection activities in buildings with PTR-TOF-MS", proceedings of the Indoor Air Conference, Kuopio, Finland, June 12-16, 2022.

2. Shah, A.D., Dotson, A.A., Weinberg, H.S., Linden, K.G., and Mitch, W.A., Impact of UV Disinfection Combined with Chlorination/Chloramination on the Formation of Nitrogenous Disinfection Byproducts in Drinking Water, proceedings of the International Ozone Association and International Ultraviolet Association Joint Regional Conference and Exposition, Boston, MA, May 4-5, 2009.

3. Shah, A. D., Huang, C.-H. and Kim, J.-H., Modeling Rejection of Select Antibiotics by Nanofiltration Membranes under varying Water Quality Conditions, proceedings of the AWWA Annual Conference & Exposition, Atlanta, GA, June 8-12, 2008.

4. Shah, A. D., Kim, J.-H., and Huang, C.-H., Enhanced Chlorination and Disinfection Byproduct Formation of Organic Contaminants by Tertiary Amines, 235th ACS National Meeting, Division of Environmental Chemistry, New Orleans, LA, April 6-10, 2008.

5. Shah, A. D., Kim, J.-H. and Huang, C.-H. Reaction Kinetics and Transformation of Carbadox and Structurally Related Compounds with Aqueous Chlorine, 233rd ACS National Meeting, Division of Environmental Chemistry, Chicago, IL, March 25-29, 2007.

6. Shah, A. D., Huang, C.-H. and Kim, J.-H., Effect of Varying Water Quality Conditions on Rejection of Selected Antibiotics by Nanofiltration Membranes, proceedings of Membrane Technology Conference, Tampa, FL, March 18-21, 2007.

7. Shah, A. D., McCallum, E., Do, A. T. Hyung, H., Huang, C.-H. and Kim, J.-H., Rejection of Hormones and Selected Human and Veterinary Antibiotics by Nanofiltration Membranes, proceedings of the AWWA Annual Conference & Exposition, San Antonio, TX, June 11-15, 2006.

8. Shah, A. D., Kim, J.-H. and Huang, C.-H. The Fate and Transformation of Quinoxaline N N-Dioxide Antibacterial Agents during Chlorination, the 1st International Conference on Environmental Exposure and Health, Atlanta, GA, October 5-7, 2005.

9. Kim, J.-H., Shah, A. D., McCallum, E., Hoon, H. and Huang, C.-H. Removal of Emerging Trace Contaminants by Nanofiltration Membranes, the 1st International Conference on Environmental Exposure and Health, Atlanta, GA, October 5-7, 2005.

10. Shah, A. D., McCallum, E., Park, A., Huang, C.-H., and Kim, J.-H. Effect of Water Quality on Rejection of Selected Human and Veterinary Antibiotics by Nanofiltration and Reverse Osmosis Membranes, Membrane Technology Conference, Phoenix, AZ, March 6-9, 2005.

11. McCallum, E., Shah, A. D., Park, A., Huang, C.-H., and Kim, J.-H. Removal of Hormones by Nanofiltration Membranes: Effects of Hormone Concentration and Natural Organic Matter Fouling on Removal Efficiency, Membrane Technology Conference, Phoenix, AZ, March 6-9, 2005.

Conference Presentations

1. Wang, G., Zyaykina, N., Hua, I., and Shah, A.D. Presence and speciation of critical materials in U.S. municipal solid waste landfill leachates, ACS National Meeting, Division of Environmental Chemistry, Atlanta, GA, March 22-26, 2008.

2. Shah, A.D., Wang, G., Hua, I., Soh, L., Proctor, C., and NgaiYin Yip, N. (2025) "Presence of Critical Materials in U.S. Municipal Solid Waste Landfill Leachates" Association of Environmental Engineering and Science Professors (AEESP) Conference, Duke University, NC, May 20-22, 2025.

3. Shah, A.D. (2024) "Plastics and polymers in water treatment: Influence of disinfectant exposure and wildfires on water quality" American Chemical Society Fall Conference, Denver, CO, August 18-21.

4. Shah, A.D. (2024) "Developing a novel advanced oxidation process using the chlorite-ozone reaction to simultaneously form hydroxyl radical and chlorine dioxide" American Chemical Society Fall Conference, Denver, CO, August 18-21.

5. Pandey, K. Remucal, C. and Shah, A. D. (2024). "Influence of dissolved organic matter, halides, and carbonate in forming carbonyl sulfide and carbon disulfide from organic sulfur precursors in sunlit natural waters." American Chemical Society Spring Conference, New Orleans, LA, March 17-21.

6. Isaacson, K. P, Shah, A. D., Whelton, A. J (2023). "Post-wildfire drinking water contamination from thermal degradation of plastics." American Chemical Society Spring Conference, Indianapolis, IN, March 26-30.

7. Shah, A.D. (2022) "New Mechanistic Insights of Polyamide-Membrane Monomer and Polymer Reactivity following Disinfection" American Chemical Society National Conference, Chicago, Illinois, August 21-25.

8. Isaacson, K., Shah, A.D., Whelton, A.J. (2022) "POSTER: Drinking Water Contamination from the Thermal Degradation of Plastics", Association of Environmental Engineering and Science Professors (AEESP) Conference, St. Louis, USA, June 28 – 30, 2022

9. Whelton, A.J., Shah, A.D., Isaacson, K., Jankowski, C. (2022) "Post-Wildfire Drinking Water Contamination from the Thermal Degradation of Plastics", American Water Works Association Annual Conference, San Antonio, USA, June 12 – 15, 2022.

10. Isaacson, K., Proctor, C., Wang, E., Edwards, E., Shah, A.D., Whelton, A.J. (2021) "POSTER: Drinking Water Contamination from Thermal Degradation of Plastics", American Water Works Association (AWWA) Annual Conference, Virtual Conference, USA, June 13 – June 16, 2021.

11. Shah, A.D.* (2020) "Indirect Photochemical Formation of COS and CS_2 in Natural Waters", American Geophysical Union (AGU) National Conference, Carbonyl Sulfide (COS/OCS) Research Group Meeting, Virtual, December 2, 2020.

12. Haflich, H.M., Ramirez, M., Huang, K., Toomey, M., Howarter, J.A., and Shah, A.D. (2019) "POSTER: Chloramination of Polyamide-Based Reverse Osmosis Membrane in Bromide-Containing Waters",

Gordon Research Conferences: Disinfection-Byproduct Formation, South Hadley, MA, USA, July 28-August 2, 2019.

13. Modiri-Gharehvaran, M. and Shah A.D. “Dissolved organic matter mediated indirect photochemical formation of COS and CS_2 in natural waters: kinetics and reaction mechanisms” American Chemical Society National Conference, Orlando, Florida, March 31st – April 4th, 2019.

14. Huang, K. and Shah A.D. “Polyamide membrane monomer degradation kinetics and mechanisms during chlorination of halide-impacted waters” American Chemical Society National Conference, Orlando, Florida, March 31st – April 4th, 2019.

15. Modiri-Gharehvaran, M. and Shah A.D. “POSTER: Dissolved organic matter mediated indirect photochemical formation of COS and CS_2 in natural waters: kinetics and reaction mechanisms”, American Geophysical Union (AGU) Conference, Washington D.C, USA, Dec. 10-14, 2018.

16. Whelton, A.J., Salehi, M., Mitchell, J., Rose J., Nejadhashemi, A.P., Beecher, J., Dreelin, E., Shah, A.D., Syal, M., Aw, T. “Building Plumbing Safety: Right Sizing Tomorrow’s Water Systems for Efficiency, Sustainability, and Public Health” American Chemical Society National Conference, New Orleans, LA, Mar. 18-22, 2018.

17. Toomey, M., Huang, K., Kearney, L., Shah, A. and Howarter, J. “POSTER: Characterizing nanostructural degradation from accelerated aging in polymer membranes” American Chemical Society (ACS) National Conference, New Orleans, Mar. 18-21, 2018.
18. Huang, K. and Shah, A.D. “POSTER: Enhanced Trihalomethane and Haloacetic Acid formation during Chlorination of Phenolic Precursors in the Presence of Tertiary Amines” Gordon Research Conferences: Disinfection-Byproduct Formation, South Hadley, MA, USA, July 30-August 4, 2017.

19. Cao, Gaopin and Shah, A.D. “POSTER: Formation of disinfection by-products by building plastic pipes during drinking water distribution” AEESP Conference, June 20-22, 2017.

20. Modiri-Gharehvaran, M. and Shah A.D. “Indirect photochemical formation of carbonyl sulfide (COS) and carbonyl disulfide (CS_2) in natural waters: Role of organic sulfur precursors and water quality conditions” American Chemical Society National Conference, San Francisco, USA, April 2-6, 2017.

21. Huang, K. and Shah, A.D. Enhanced Trihalomethane and Haloacetic Acid formation during Chlorination of Phenolic Precursors in the Presence of Tertiary Amines, Water Quality Technology Conference, Indianapolis, November 13-17, 2016.

22. Shah, A.D. Enhancing Learning of Analytical Chemistry Techniques for Environmental Applications at the Graduate Level. American Chemical Society, Philadelphia, August 21-25, 2016.

23. Shah, A.D. Formation of Disinfection By-products during Ballast Water Treatment with Chlorine, Ozone, and Peracetic Acid: Influence of Water Quality Parameters. Natural Organic Matter 6 Conference, Malmö, Sweden September 7-10, 2015.

24. Shah, A.D. Tradeoffs in DBP Formation during Chloramination following Pre-Oxidation for Nitrosamine Control, AWWA Annual Conference & Exposition, Washington DC, June 12-16, 2011.

23. Shah, A.D. Impact of UV Disinfection Combined with Chlorination/Chloramination on the Formation of Nitrogenous Disinfection Byproducts in Drinking Water, International Ozone Association and International Ultraviolet Association Joint Regional Conference and Exposition, Boston, MA, May 4-5, 2009.

24. Shah, A. D. Mechanisms of Antibiotic Removal by Nanofiltration (NF) Membranes, AWWA Annual Conference & Exposition, Atlanta, GA, June 8-12, 2008.

25. Shah, A. D. Enhanced Chlorination and Disinfection Byproduct Formation of Organic Contaminants by Tertiary Amines, 235th ACS National Meeting, Division of Environmental Chemistry, New Orleans, LA, April 6-10, 2008.

26. Shah, A. D. Reaction Kinetics and Transformation of Carbadox and Structurally Related Compounds with Aqueous Chlorine, 233rd ACS National Meeting, Division of Environmental Chemistry, Chicago, IL, March 25-29, 2007.

27. Shah, A. D. Effect of Varying Water Quality Conditions on Rejection of Selected Antibiotics by Nanofiltration Membranes, Membrane Technology Conference, Tampa, FL, March 18-21, 2007.

28. Shah, A. D. The Fate and Transformation of Quinoxaline N N-Dioxide Antibacterial Agents during Chlorination, the 1st International Conference on Environmental Exposure and Health, Atlanta, GA, October 5-7, 2005.

29. Shah, A. D. Removal of Emerging Trace Contaminants by Nanofiltration Membranes, the 1st International Conference on Environmental Exposure and Health, Atlanta, GA, October 5-7, 2005.

30. Shah, A. D. Effect of Water Quality on Rejection of Selected Human and Veterinary Antibiotics by Nanofiltration and Reverse Osmosis Membranes, Membrane Technology Conference, Phoenix, AZ, March 6-9, 2005.

Invited Seminars

1. Shah, A.D. “Plastics and Polymers in Water Treatment: Influence of Disinfectant Exposure and Wildfires on Water Quality”, Seminar Series Presentation, University of Cincinnati, April 11, 2025.

2. Shah, A.D. “The Amine Dilemma: Evaluating tradeoffs between carbon capture and toxic by-product formation in the aqueous phase” W+T department, Swiss Federal Institute of Aquatic Science and Technology (Eawag), April 28, 2024.

3. Shah, A.D. “New Mechanistic Insights of Polyamide-based Membrane Monomer and Polymer Reactivity following Disinfection”, Seminar Series Presentation, Rice University, October 22, 2021.

4. Shah, A.D.* “The Matrix Matters: Influence of Water Matrices on Aqueous Phase Chemical Interaction in Small Scale Engineered Systems to Large Scale Global Processes”, Seminar Series Presentation, Notre Dame University, IN, October 25, 2018.

5. Shah, A. D.* “Moving Past Freshwater: The Disinfection of Ballast Waters and Beyond, Purdue Water Community Presentation”, Purdue University, October, 2014.

External and Internal Support

1. NSF/Collaborative: ECO-CBET: Integrated Biochemical and Physicochemical Process to Recover Critical Metals from Municipal Solid Waste in Landfills, 08/01/24-07/31/28, $1,700,000, PI; $914,999, Caitlin Proctor (co-PI; Purdue; 25%), Inez Hua (co-PI; Purdue; 25%), Ngai Yin Yip (co-PI; Columbia; 25%), Lindsay Soh (co-PI; Lafayette College: 25%).

2. Indiana Department of Transportation (INDOT): SPR-4808: Reducing the Dependency on Chlorides and Impacts, 01/01/24–12/31/24, $112,982, Co-PI; $30,000, David Yu (PI; Purdue; 50%), Samuel Labi (co-PI; Purdue; 30%).

3. EPA P3/ Enhancing the Anion-Exchange Capacity of Biochar for Per- And Polyfluoroalkyl (PFAS) Stabilization in Contaminated Soils, 07/01/22–06/31/23, $25,000, Co-PI; $11,000, Wenqing Xu (PI; Villanova; 80%)

4. RAPID: Water Contamination Response and Recovery for the 2021 Colorado Wildfires, 01/01/22-01/31/24, $200,000, Co-PI; $40,000, Andrew Whelton (PI; Purdue; 20%), Jeffrey Youngblood (co-PI; Purdue; 20%), Amy Marconnet (co-PI; Purdue; 20%)

5. NSF/ Collaborative: Evaluation of the fundamental photochemical mechanisms driving carbonyl sulfide and carbon disulfide formation in sunlit natural waters, 09/01/21-08/31/24, $406,971, PI; $319,266, Christy Remucal (co-PI; University of Wisconsin-Madison; 15%).

6. Onsite Field Support for the Response and Recovery due to Petroleum Drinking Water Contamination, 01/01/22-01/31/22, $3,743, Co-PI; $1000, Andrew Whelton (PI; Purdue; 80%).

7. Onsite Field Support for the Response and Recovery due to Petroleum, Drinking Water Contamination, 12/01/21-01/31/22, $25,000, Co-PI; $5000, Andrew Whelton (PI; Purdue; 80%)

8. Shah Family Global Innovation Lab (Internal): Technology for Water Defluoridation Pumping Systems for Tribal Community Members in Dungarpur, Rajasthan, 06/01/21-05/31/22, $32,000, PI; $11,000, Chad Jafvert (co-PI; Purdue; 33%), George (Zhi) Zhou (co-PI; Purdue; 33%).

9. Water Research Foundation: Post-Wildfire Distribution System Water Quality Impacts and Potential Responses, 01/01/21-12/31/22, $245,000, Co-PI; ~$122,500, Andrew Whelton (PI; Purdue; 50%)

10. Protect Purdue Innovation Faculty Grants Competition (internal), 10/01/20-01/15/21, $20,000, Co-PI; ~$6700, Nusrat Jung (PI; 33%; Purdue) and Brandon Boor (co-PI; 33%; Purdue).

11. Onsite Field Support for the Paradise Irrigation District (PID) Response and Recovery due to the 2018 Camp Fire, Paradise Irrigation District (PID), 02/10/19-02/14/19, $12,000, Total Budget: $12,000, Amisha Shah Budget: $3000 (PI: Andy Whelton, Purdue University, David Yu, Purdue University, and Junesook Lee, Manhattan College)

12. Reactive electrochemical membrane (REM) reactors for the oxidation of perfluoroalkyl compound contaminated water, Department of Defense (DOD)-Environmental Protection Agency (EPA)-Department of Energy (DOE)-Strategic Environmental Research and Development Program (SERDP), 7/1/18-6/30/19, Total Budget: $200,000 , Amisha Shah Budget, $49,350 (PI: Brian Chaplin, University of Illinois-Chicago)

13. Assessing Hydraulics and Water Quality in Residential Water Heaters (internal), $10,000, Co-PI: Inez Hua, Antoine Aubeneau, and James Braun, 06//01/17-08/01/17.

14. Right Sizing Tomorrow's Water System for Efficiency, Sustainability, and Public Health, Environmental Protection Agency, 01/01/17 – 12/31/19, Total Budget: $1,989,000, Amisha Shah Budget: $30,000 (PI: Andy Whelton, Purdue University, Co-PIs: Joan Rose (Michigan State), Jade Mitchell (Michigan State), Janice Beecher (Michigan State), Amirpouyan Nejadhashemi (Michigan State), Juneseok Lee (San Jose State))

15. Evaluation of the Chemical Drivers behind Membrane Integrity Loss in Halide Impaired Waters during Chemical Disinfection to Advance Optimal Membrane Structural Design, US National Science Foundation (NSF) CBET Program, $261,963, 7/16-6/19 (co-PI: John Howarter (Purdue University))

16. Formation and Adsorption of Toxic Disinfection By-products by Building Plastic Pipes during Drinking Water Distribution, Ralph W. and Grace M. Showalter Research Trust, 07/01/16 – 06/30/17, $70,500, co-PI: Andrew Whelton (Purdue University)

17. Laboratory and University Core Facility Research Equipment Program/ Proposal for an Ion Chromatography Instrument (internal), $99,995, 12/16/15-no end date, (Amisha Shah: major contributor; PI: Chad Jafvert, co-PI: Ron Turco)

18. Pleasant Run Creek Site Evaluation, August Mack Environmental, $107,457, 11/01/15-08/15/16, Total Budget: $107,457, Amisha Shah Budget: $21,491 (PI: Chad Jafvert)

19. National Science Foundation/Workshop: Natural Organic Matter and its Impact on Drinking Water, 12/15/15-04/15/16, $48,060, Total Budget: $48,060, Amisha Shah Budget: $8,500 (PI: Michael Gonsior; Participants: Lee Blaney, Olya Keen, Alex Chow Julie Korak, and Haizhou Liu)

20. Membrane Pre-treatment using Chemical Disinfectants in Halide-Impaired Waters (internal), 06//01/15-08/01/15, $10,000 (co-PI: John Howarter)

21. Investigating the Photochemical Pathways of Organic Sulfur in forming COS and CS_2 in Natural Waters: Implications to the Global Radiation Budget (internal), Purdue Climate Change Research Center, 06/01/15-12/31/15, $7,000 (co-PI: Michael Gonsier)

Current and Past Students

Ph.D. and MS Students

Student Name	Degree	Graduation Date	Name of Co-Chair
Gaopin Cao	MS (CE)	12/17	-
Kun Huang	PhD (CE)	12/18	-
Mahsa Modiri-Gharehveran	PhD (CE)	07/19	-
Holly Haflich	MS (EEE)	07/19	John Howarter (MSE/EEE)
Mackenzie Davies	MS (EEE)	05/20	Inez Hua (CE/EEE)
Kris Isaacson	PhD (EEE)	05/24	Andrew Whelton (CE/EEE)
Kartikeya Pandey	MS (CE) and PhD (CE)	12/22 (non-thesis) and 05/27 (PhD) 05/29	
Guanchun Wang	PhD (EEE)	05/26	Inez Hua (CE/EEE)
Sruthi Dasika	PhD (EEE)	05/30	Chad Jafvert (CCE/EEE)
Donghao Hu	PhD (EEE)		

Undergraduate Students

1.	Holly Haflich	Jan 2015-Aug 2015	Purdue University
2.	Celeste Bronston	May 2016-Aug 2016	Purdue University (co-chaired: Chad Jafvert)
3.	Marko Popovich	Sept 2016-Spring 2017	Purdue University

4.	Christian A. Guerrero	May 2017-Aug 2017	Visiting Undergraduate from Universidad San Francisco de Quito
5.	Maria Ramirez	May 2019-Aug 2019	Purdue University
6.	John Paul Pieper	Aug 2020 – Aug 2021	Purdue University
7.	Rashmika Manipati	Nov 2022 – May 2023	Purdue University
8.	Mariana Maranon	Aug 2024 – Feb 2025	Visiting Undergraduate from the Universidad Nacional de Colombia
9.	Julianna Gutierrez	May 2025 – Aug 2025	Visiting Undergraduate from the Universidad de los Andes
10.	Ethan Connolly	May 2025 – Aug 2025	Purdue University
11.	Heather Murillo	May 2025 – Aug 2025	Oregon State University

Service

Professional Service

1. American Chemical Society (ACS) (2005 – present)
2. American Water Works Association (AWWA) (2003-present)
3. Association of Environmental Engineering & Science Professors (2014-present)

Proposal and Journal Article Reviewer

Reviewer for Indiana Water Resources Research Center Proposals, Dec 2015.

Invited proposal reviewer for National Science Foundation (NSF) Chemical, Bioengineering, Environmental and Transport Systems (CBET) Program and Major Research Instrumentation (MRI) Proposal Review Panels

Journal article reviewer: *Chemosphere, Environmental Science & Technology, Water Research Environmental Science: Water Research and Technology, Journal of Environmental Engineering, Environmental Toxicology and Chemistry, Current Opinion in Environmental Health and Science, and Science.*

Symposium and Conference Session Organization

1. Served as a session co-chair at the 2026 Spring ACS Conference in Atlanta, GA, March, Title: Advancing Resource Recovery for Critical Minerals, Co-Workshop Organizers: Ching-Hua Huang (Georgia Tech), Young-Shin Jun (Washington University in St. Louis), and Yanzhi Tang (Georgia Tech)
2. AEESP Conference, Durham, NC, USA, May 20-22, 2025, Title: Dumping our Data: Challenges Faced in Municipal Solid Waste Data Management and Implications for Public Policy and Health, Co-Workshop Organizers: Caitlin Proctor (lead organizer; Purdue), Inez Hua (co-organizer; Purdue) Ngai Yin Yip (co-organizer; Columbia University), Lindsay Soh (co-organizer; Lafayette College).
3. 252nd American Chemical Society National Meeting and Exposition, Philadelphia, Pennsylvania, August 21-25, 2016, Title: Advancing Teaching and Learning in Environmental Chemistry Courses: Innovative Tools and Techniques, Co-Workshop Organizers: John Sivey (Towson University) and Ning Dai (University at Buffalo)

Mentoring of Students

Purdue University, Environmental and Ecological Engineering, *Faculty Mentor*, Aug. 2014-present.

Amisha Shah has and is currently mentoring 15 students at Purdue University within the EEE program. This mentoring process includes a formal mentoring meeting (~ 30 min) in which she and the student discuss future career goals, academic strengths and weaknesses, future class enrollment, plans for outside activities including internships and study abroad programs, overall work/life balance, and other general wellness issues. This mentoring meeting occurs during the middle of each semester. Amisha Shah has mentored the following undergraduate students: Sangukta Gokhale, BSEEE, graduated; Jason Hawes, BSEEE, graduated; Huiyue Shi, BSEEE, graduated; Scott Wothke, BSEEE, graduated; Gyu Tak, Jang, BSEEE, graduated; Anna Belovic, BSEEE, graduated; Cory Tatarzyn, BSEEE, graduated; Kwang, Lee, dropped; Audrey Whitmire, BSEEE, graduated; Muhammad Syafi Abdullah Sani, BSEEE, in progress; Elizabeth Eboli, BSEEE, in progress; Kayla Reiser, BSEEE, in progress; Emerson Ringger, BSEEE, in progress; Emily Summers, BSEEE, in progress; Anne Warner, BSEEE, in progress; Bennett, Kidd, BSEEE, in progress; Ryan Leahy, BSEEE, in progress; Amy Santos, BSEEE, in progress.

Amisha Shah is and has also advised and mentored a total of 10 graduate students at Purdue in their academic progress. These graduate students include: Kun Huang, PhDCE; Mahsa Modiri Gharehvaran, PhDCE; Gaopin Cao, MSCE; Holly Haflich, MSEEE; Mackenzie Davies, MSEEE; Kris Isaacson, PhDEEE, and Kartikeya Pandey, PhDCE, Guanchun Wang, PhDEEE, Sruthi Dasika, PhDEEE, and Donghao Hu, PhDEEE.

University Service Activities

Thesis Committee	Degree	Dates	Advisor
Margaret Busse	MS and PhD	05/16 (MS), PhD in progress	Ernest Blatchley
Karen Casteloes	MS	05/16	Andrew Whelton
Moshan Chen	MS	05/18	Ernest Blatchley
Xiangning Huang	PhD	07/18	Andrew Whelton
Utami Irawati	PhD	08/18	Chad Jafvert
Kehui Zhang	MS and PhD	05/18 (MS), PhD in progress	Ernest Blatchley
Jianghanyang Li	PhD	In progress	Greg Michalski (EAPS)
Sruthi Dasika	PhD	In progress	Chad Jafvert
Christian Ley	PhD	In progress	Andrew Whelton
Soohyun Yang	PhD	08/19	Suresh Rao
Hsin-Yin Yu	MS	05/21	Zhou Zhi
Shreya Gupta	MS	05/21	Zhou Zhi
Rachel Gehr	PhD	05/24	Linda Lee
Taymee Brandon	PhD	12/24	Chad Jafvert and Inez Hua
Jinglin Jiang	PhD	12/23	Brandon Boor and Nusrat Jung
Tristin Pratt	MS	08/23	Inez Hua
Qianyu Fan	MS	05/23	Zhou Zhi
Rui Li	MS	05/23	Zhou Zhi
Xiaosu Ding	PhD	12/24	Nusrat Jung
Paula Coelho	PhD	05/26	Andrew Whelton
Addrita Haque	PhD	05/30	Caitlin Proctor
Jorge Del'Angel	PhD	05/30	Caitlin Proctor
Yuxin Jiang	PhD	05/30	Zhou Zhi
Avanthi Sidhar	MS	05/26	Ernest Blatchley
Wanyue Hui	PhD	05/27	Zhou Zhi

University and Department Committee Assignments

1. Purdue University, Environmental and Ecological Engineering, *Faculty Search Committee*, Member, Aug. 2014-May 2015.

2. Purdue University, Environmental and Ecological Engineering, *Space and Facilities Committee*, Member, Aug. 2014-May 2016 and Aug 2024 - onwards

3. Purdue University, Environmental and Ecological Engineering, *Seminar Committee*, Member, Aug. 2016-Dec 2016.

4. Purdue University, Civil Engineering, *Recruitment Committee*, Member, Aug. 2016-present.

5. Purdue University, Environmental and Ecological Engineering, *Academics Committee*, Member, Aug. 2018-present.

6. Purdue University, Civil Engineering, *CE Undergraduate Curriculum Review Committee*, Member, Aug 2022-present.

7. Purdue University, Environmental and Ecological Engineering, *Faculty Search Committee*, Member, Aug. 2022-May 2023.

8. Purdue University, College of Engineering, Faculty Affairs Committee, Environmental and Ecological Engineering, Fall 2022-Spring 2023.

9. Purdue University, Civil and Construction Engineering, Undergraduate Committee, Spring 2025-present.

Teaching

Courses Taught

1.	CE 597	Environmental Analytical Chemistry (3 credits)	Fall 2014, 2015, 2016, 2022, 2024 and Spring 2017, 2019
2.	CE 497	Water Treatment (3 credits)	Spring 2018, 2020, 2022
3.	EEE 300	Environ. and Ecolog. Systems Modeling (3 credits)	Spring 2015, 2016, 2017, 2022, 2023, 2025, 2026
4.	EEE 595	Discovering Green Chemistry (1 credit)	Spring 2016
5.	EEE 360	Environ. and Ecolog. Eng. Laboratory (3 credits)	Fall 2017, 2018, 2019, 2025
6.	EEE 690	Environ. and Ecolog. Graduate Seminar (3 credits)	Fall 2017 and Spring 2017, 2018
7.	EEE 595	Analysis of Water Contaminants (1 credit)	Spring 2019
8.	EEE 595	Contaminant Analysis (1 credit)	Spring 2023

Courses Evaluations

Year	Course	Number	# of responses/# enrolled in class	Course Eval. Score	Prof. Eval. Score	Dept. Avg. Prof. Eval. Score*
F14	Environmental Analytical Chemistry	CE 597	13/16	3.8	3.9	4.6
S15	Environmental and Ecological Systems Modeling	EEE 300	32/36	3.2	3.4	
F15	Environmental Analytical Chemistry	CE 597	10/10	4.7	4.7	4.6
S16	Environmental and Ecological Systems Modeling	EEE 300	37/41	4.0	4.0	
S16	Discovering Green Chemistry	EEE 595	11/15	3.9	4.1	
S17	Environmental Analytical Chemistry	CE 597	8/14	4.1	4.1	4.4
S17	Environmental and Ecological Systems Modeling	EEE 300	40/44	3.8	3.9	
S17	Environmental and Ecological Graduate Seminar	EEE 690	16/22	4.6	4.6	
F17	Environmental and Ecological Engineering Laboratory	EEE 360	19/34	4.0	3.9	
F17	Environmental and Ecological Graduate Seminar	EEE 690	22/35	4.1	4.4	
S18	Water Treatment	CE 497	12/21	3.8	4.0	4.0
S18	Environmental and Ecological Graduate Seminar	EEE 690	11/22	4.6	4.7	
F18	Environmental and Ecological Engineering Laboratory	EEE 360	21/40	3.6	3.6	
S19	Environmental Analytical Chemistry	CE 597	9/13	4.4	4.6	
S19	Analysis of Water Contaminants	EEE 595	8/11	4.2	4.5	
F19	Environmental and Ecological Engineering Laboratory	EEE 360	25/48	3.8	3.7	

*Based on student evaluations, the average median scores in response to overall rating of the instructor are computed for each course level based on all courses taught by CE faculty in a given semester. These average scores are reported as “Dept. Ave. Prof. Score” in the table above.

SEM/YEAR	COURSE TITLE	COURSE NUMBER	RESPONSIBILITY (% & STATE IF WITH ADMIN OR SUPERVISORY RESP)	# OF RESPONSES/# ENROLLED IN CLASS	INDIVIDUAL INSTRUCTOR AVERAGE OF AVERAGES* (MIN VALUE, MAX VALUE)
S20	Water Treatment	CE 497	100%, responsible for preparation and presentation of all instructional material	10/18	N/A
S22	Water Treatment	CE 497	100%, responsible for preparation and presentation of all instructional material	5/14	N/A
S22	Environmental and Ecological Systems Modeling	EEE 300	100%, supervised one TA who assisted with answering student questions and completing all grading	30/70	N/A
F22	Environmental Analytical Chemistry	CE 597	100%, responsible for preparation and presentation of all instructional material	9/14	N/A
S23	Environmental and Ecological Systems Modeling	EEE 300	100%, supervised one TA who assisted with answering student questions and completing all grading	29/62	N/A
S23	Contaminant Analysis	EEE 560	100%, responsible for preparation and presentation of all instructional material	18/25	N/A
F24	Environmental Analytical Chemistry	CE 597	100%, responsible for preparation and presentation of all instructional material	6/8	4.5 (3.83/4.83)
F24	Environmental and Ecological Graduate Seminar	EEE 690			
S25	Environmental and Ecological Systems Modeling	EEE 300	100%, supervised one TA who assisted with answering student questions and completing all grading	27/55	4.14(3.89/4.48)
S25	Environmental and Ecological Graduate Seminar	EEE 690			4.69 (4.35/4.82)
F25	Water Quality and Treatment Laboratory	EEE 360	100%, supervised one TA who assisted with answering student questions and sets up each lab and supervised one peer TA who assisted with setting up each lab and graded the lab reports		4.69 (4.3/4.9)

S25	Environmental and Ecological Systems Modeling	EEE 300	100%, supervised one TA who assisted with answering student questions and completing all grading	21/46	4.24(3.85/4.62)

*The Individual Instructor AVERAGE OF AVERAGE is calculated by averaging the average scores on 10 core questions. These questions include: the instructor clearly explains material so that I can understand it; the instructor is open to my questions and effectively answers them; the instructor seems to care that I learned this material; the instructor willingly makes time to help other students and me; the instructor is fair and consistent in evaluating my performance in the course; the instructor created a welcoming and inclusive classroom environment; the class activities are well prepared and organized; the assignments aid me in achieving the class objectives; the projects or laboratories aid me in achieving the class objectives; the examinations aid me in achieving the class objectives. MIN/MAX VALUE is the lowest/highest among the average scores on 10 core questions.

Last Updated: 19 June 2026