Exponent®
Engineering & Scientific Consulting

Songjing Yan, Ph.D.

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Professional Profile

Dr. Yan has a background in chemical and environmental engineering with emphasis on the fundamental processes that control pollutant fate and transport in sediments and aquatic environments. She uses tools like passive sampling to investigate exposure and bioavailability of hydrophobic organic contaminants (HOCs) to organisms. Dr. Yan has extensive project experience in contaminated site assessment and management, including technical support for site investigations, technical evaluation of chemical contamination, fate and transport modeling, data management and optimization, and technical review of sediment remediation alternatives and technologies.

Dr. Yan has experience working on multidisciplinary teams to address issues of environmental contamination of sediment, surface water, porewater, groundwater, and other matrices in a variety of environments. Her doctoral thesis focused on the applications and development of emerging passive sampling technologies to provide high-quality deliverables. She is experienced with a wide range of contaminants, such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), pesticides, and per- and polyfluoroalkyl substances (PFAS).

Dr. Yan has been actively involved in field work as well as lab work, including sample collection and processing, data management and analysis, and simulation modelling. She is skilled in analytical chemistry techniques including high performance liquid chromatography (HPLC), gas chromatography with electron capture detector (GC-ECD), gas chromatography with single (GC-MS), and tandem mass spectrometry (GC-MS/MS).

Recently, Dr. Yan expanded her capabilities to provide regulatory support for commercial clients to identify the presence of PFAS in their products and develop strategies to identify and eliminate the sources of PFAS.

As a Chinese native, she is fluent in English and Mandarin.

Academic Credentials & Professional Honors

Ph.D., Chemical Engineering, Texas Tech University, 2018

M.S., Chemical Engineering, Texas Tech University, 2017

Academic Appointments

Postdoctoral Research Associate, Department of Chemical, Biochemical and Environmental Engineering, UMBC, 2019–2022

Prior Experience

Postdoctoral Research Associate, University of Maryland Baltimore County, 2019–2022

Graduate Research Assistant, Texas Tech University, 2014-2018

Process Engineer, China Research Institute of Daily Chemical Industry, 2013-2014

Professional Affiliations

American Chemical Society

Society of Environmental Toxicology and Chemistry

Publications

Yan, S., Murtadha, B., Foster, G., & Ghosh, U. Development and testing of novel functionalized polymeric thin-films for equilibrium passive sampling of PFAS compounds in water. Chemical Engineering Journal, 2023; 477, 146734.

Yan S, Bokare M, Ghosh U. Equilibrium porewater measurement of PCBs and PAHs using direct water extraction and comparison with passive sampling. Environmental Science & Technology 2022; 56: 10020-10029.

Yan S, Rakowska M, …, Reible D. Bioavailability assessment in activated carbon treated coastal sediment with in situ and ex situ porewater measurements. Water Research, 2020; 185, 116259.

Wu S, Yan S, Qi W et al. Green synthesis of gold nanoparticles using aspartame and their catalytic activity for p-nitrophenol reduction. Nanoscale Research Letters, 2015; 10(1), 213.

Guilherme R.L., Michalsen M, ..., Yan S, Bokare M. Interlaboratory Study of Polyethylene and Polydimethylsiloxane Polymeric Samplers for Ex Situ Measurement of Freely-Dissolved Hydrophobic Organic Compounds in Sediment Porewater. Environmental Toxicology and Chemistry, 2022; 41: 1885-1902.

Presentations

Yan S, Cheung L, Ghosh U. Innovative Blending of Large Volume Dredged Materials to Reduce Pollutant Risk and Enable Sustainable Reuse. Platform presentation, Battelle Sediment Conference, Austin, TX, 2023.

Yan S, Cheung L, Ghosh U. Blending of Large Volume Dredged Materials to Reduce Pollutant Risk and Enable Sustainable Reuse. Poster presentation, SETAC North America Annual Meeting, Pittsburgh, PA, 2022.

Yan S, Bokare M, Ghosh U. Equilibrium porewater measurement of PCBs and PAHs using direct water extraction and comparison with passive sampling. Platform presentation, American Chemical Society Fall 2022 Meeting, Chicago, IL, 2022.

Yan S, Murtadha B, Foster G, Ghosh U. Development of Novel Functionalized Polymeric Thin Films for Equilibrium Passive Sampling of PFAS Compounds in Surface and Groundwater. Platform presentation, SETAC North America Annual Meeting, Virtual, 2021.

Yan S, Bokare M, Ghosh U. Equilibrium porewater measurement of PCBs and PAHs using direct water extraction and comparison with passive sampling. Platform presentation, SETAC North America Annual Meeting, Virtual, 2021.

Yan S, Murtadha B, Foster G, Ghosh U. Development of Novel Functionalized Polymeric Thin Films for Equilibrium Passive Sampling of PFAS Compounds in Surface and Groundwater. Platform presentation, CPRC SETAC Spring Meeting, Virtual 2021.

Yan S, Bokare M, Ghosh U. Comparison of Porewater PCB and PAH Concentrations via Passive Sampling and Direct Water Measurement. Platform presentation, SETAC North America Annual Meeting, Virtual, 2020.

Yan S, Rakowska M, Hussain T, Reible D. Spatial variations of porewater and bulk sediment concentrations in complex sediment matrices. Poster presentation, Battelle Remediation and Management of Contaminated Sediment Conference, Orleans, LA, 2017.

Yan S, Rakowska M, Hussain T, Reible D. Spatial variations of porewater and bulk sediment concentrations in complex sediment matrices. Poster presentation, SETAC North America Annual Meeting, Orlando, FL, 2016

Yan S, Rakowska M, Hussain T, Reible D. Application of Passive Sampling in Evaluating the Effectiveness of Activated Carbon Amendment in the Field. Poster presentation, SETAC North America Annual Meeting Salt Lake City, UT, 2015.

Peer Reviews

Journal of Environmental Engineering