

Exponent®
Engineering & Scientific Consulting

Paige Moncure, Ph.D.

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Professional Profile

Dr. Moncure is a chemist who specializes in the characterization of the physical, optical and chemical properties of polymeric materials. She is well versed in several analytical techniques including Dynamic Mechanical Analysis (DMA), Thermogravimetric Analysis (TGA), Differential Scanning Calorimetry (DSC), Fourier Transform Infrared Spectroscopy (FTIR), Rheometry, and Optical Microscopy which she often employs to assist clients with material-related investigations.

Dr. Moncure also has extensive experience in inorganic nanomaterial synthesis and characterization. Characterization techniques she has expertise in include dynamic light scattering (DLS), nuclear magnetic resonance spectroscopy (NMR), ultraviolet-visible spectroscopy (UV-Vis), inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), interferometric scattering microscopy (iSCAT), and transmission electron microscopy (TEM).

Prior to working at Exponent, Dr. Moncure worked as a graduate research assistant within the Department of Chemistry at the University of Pittsburgh. In her graduate research she studied the interactions between polymeric materials and inorganic nanoparticles using customized optical setups. She also collaborated with the Department of Civil and Environmental Engineering and the Special Pathogens Laboratory to study the efficacy of silver point-of-use (POU) water fixtures for the prevention of opportunistic pathogens in water.

Academic Credentials & Professional Honors

Ph.D., Chemistry, University of Pittsburgh, 2023

B.S., Chemistry, University of Pittsburgh, 2017

Pittsburgh Quantum Institute Conference First Place Poster Award (2022)

Ashe Felloswhip (2019)

Mary E. Warga Predoctoral Fellowship (2018)

Chair's Scholar Summer Research Fellowship (2017)

Academic Appointments

Graduate Student Teaching Fellow (2017-2021)

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Publications

Moncure, Paige J; Millstone, Jill E; Laaser, Jennifer E. Role of Ligand Shell Density in the Diffusive Behavior of Nanoparticles in Hydrogels. Journal of Physical Chemistry B 2023; 127:9366-9377.

Strabryla, Lisa M; Moncure, Paige J; Millstone Jill E; Gilbertson, Leanne M. Particle-Driven Effects at the Bacteria Interface: A Nanosilver Investigation of Particle Shape and Dose Metric. ACS Applies Materials & Interfaces 2023; 15(33): 39027-39038.

Moncure, Paige J; Simon, Zoe C; Millstone, Jill E; Laaser, Jennifer E. Relationship between Gel Mesh and Particle Size in Determining Nanoparticle Diffusion in Hydrogel Nanocomposites. Journal of Physical Chemistry B 2022; 126:4132-4142.

Simon, Zoe C., Ann Marie N. Paterno, Kaitlyn M. McHugh, Paige J. Moncure, Riti Sen, Samuel T. Patton, Eric M. Lopato, Savannah Talledo, Stefan Bernhard, and Jill E. Millstone. Continuous nucleation of metallic nanoparticles via photocatalytic reduction. Chemical Science 2023; 14 (11): 2860-2865.

Simon, Zoe C., Eric M. Lopato, Maya Bhat, Paige J. Moncure, Sarah M. Bernhard, John R. Kitchin, Stefan Bernhard, and Jill E. Millstone. Ligand enhanced activity of in situ formed nanoparticles for photocatalytic hydrogen evolution. ChemCatChem, 2022; 14(2): e202101551.

Presentations

P Moncure, J Laaser, J Millstone The Role of Polymeric Ligand Shells in the Diffusive Behavior of Nanoparticles in Hydrogels. Oral presentation, ACS Spring Meeting, Indianapolis, IN, 2023.

P Moncure, J Laaser, J Millstone The Effect of Ligand Shell Density on the Diffusion of Nanoparticles in Hydrogel Nanocomposites. Oral presentation, APS March Meeting, Las Vegas, NV, 2023.

P Moncure, J Laaser, Z Simon, J Millstone. The Role of Gel Mesh and Particle Size in Predicting Nanoparticle Diffusion in Hydrogel Nanocomposites. Poster presentation, Pittsburgh Quantum Institute Conference, Pittsburgh, PA, 2022.

P Moncure, J Laaser, Z Simon, J Millstone. The Role of Gel Mesh and Particle Size in Predicting Nanoparticle Diffusion in Hydrogel Nanocomposites. Poster presentation, APS March Meeting, Chicago, IL, 2022.

Peer Reviews

ACS Nano