Wenjie Fei, Ph.D.

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Education

Columbia University, New York, NY — May 2019
Ph.D. in Chemical Engineering
Thesis: Magneto-capillary dynamics of particles at curved liquid interfaces

The Pennsylvania State University, University Park, PA — August 2016
M.S. in Chemical Engineering

University of Minnesota - Twin Cities, Minneapolis, MN — May 2014
B.S. Double Major: Chemical Engineering; Chemistry

Professional Experience

Texas Tech University, Lubbock, TX — September 2022 - Present
Instructor - Civil, Environmental, & Construction Engineering
- Teach CE 3305 – Mechanics of Fluids and CE 5310 – Numerical Methods in Engineering

PPG Industries, Pittsburgh, PA
Research Engineer — August 2019 – May 2022

Columbia University, New York, NY
Graduate Research Assistant – Bishop Research Group (formerly at Penn State University) — 2014 – May 2019
- Initiated a new research program on magnetically driven particles at liquid interfaces, which laid the foundation for projects on "active emulsions" funded by a national agency (NSF CBET #1935228)
- Synthesized and characterized colloidal particles and modify their surface chemistry
- Designed and built electromagnets for controlling magnetic colloids that fit in an optical microscope
- Mentored and trained one undergraduate and one graduate student on independent research projects

Laboratory Manager — August 2016 – May 2019
- Led the lab move from Penn State to Columbia University: managed timelines, assigned responsibilities, planned new lab layout, ordered and assisted installment of instruments, and minimized lab operations downtime
- Administered safety trainings, wrote lab procedure SOPs, and served as a point of contact for safety issues

Graduate Teaching Assistant - Chemical Engineering Essentials — September 2016 - December 2016
- Lectured weekly recitation sessions of Chemical Engineering Essentials, a graduate-level course for students who pursues a chemical engineering master's degree without an engineering background
- Hosted office hours, graded and provided feedback to homework and exams

University of Minnesota – Twin Cities, Minneapolis, MN
Undergraduate Research Assistant – Kokkoli Research Group — October 2011 – May 2014
UMN UROP Award Project: Liposomes for targeted drug delivery
- Used lipid-based nanoparticles (liposomes) as drug delivery vehicles to improve drug stability and enhance efficacy
- Fabricated PEG liposomes, saturated cells, and verified number of cells using WST-1 assay
- Prepared and purified aptamer-amphiphiles using High Performance Liquid Chromatography (HPLC)

Ecolab, Inc., Eagan, MN
Chemist Intern - Corporate Technologies Hard Surface Lab — June 2013 – August 2013
- Conducted fundamental surfactant interfacial properties tests and formulated triglyceride-oil based microemulsions

Publications

- **W Fei**, P.M. Tzelios, K.J.M. Bishop, Magneto-capillary particle dynamics at curved interfaces: Time-varying fields and drop mixing. *Langmuir*. 36, 6977−6983 (2020).
- **W. Fei**, M. Driscoll, P. Chaikin, K.J.M. Bishop, Magneto-capillary dynamics of amphiphilic Janus particles at curved liquid interfaces. *Soft Matter* 14, 4661–4665 (2018). **Cover Article**
- **W. Fei**, Y. Gu, K.J.M. Bishop, Active colloidal particles at fluid interfaces. *Curr. Opin. Colloid In. Sci.* 32, 57-68 (2017).
- Y. Dou, C.A. Cartier, **W. Fei**, S. Pandey, S. Razavi, I. Kretzschmar, K.J.M. Bishop, Directed motion of metallodielectric particles by contact charge electrophoresis. *Langmuir* 32, 13167−13173 (2016).

Conference Presentations

- **W. Fei**, M. Driscoll, P. Chaikin, K.J.M. Bishop, Magneto-capillary dynamics of amphiphilic Janus particles at curved liquid interfaces. ACS Colloids and Surface Science Symposium, State College, PA, June 2018 (talk)
- M. Driscoll, B. Delmotte, M. Youssef, **W. Fei**, S. Sacanna, K. Bishop, A. Doney, P. Chaikin, Stable clusters emerge from unstable fronts. APS Division of Fluid Dynamics Annual Meeting, Denver, CO, November 2017 (talk)
- Y. Dou, C.A. Cartier, K.J.M. Bishop, I. Kretzschmar, S. Razavi, **W. Fei**, S. Pandey, Directed Motion of Metallodielectric Particles By Contact Charge Electrophoresis. AIChE Annual Meeting, Minneapolis, MN, November 2017 (talk)
- **W. Fei**, M. M. Driscoll, P. M. Chakin, K. J. M. Bishop, Colloidal Rollers based on Magnetic Janus particles. Energy Frontier Research Centers (EFRCs) - Hub CMS PI Meeting, Washington, DC, July 2017 (poster)

Synergistic Activities

PPG Industries Science and Education Council
Volunteer 2021 - 2022

- Led virtual career discussion panel for the 2021 Pittsburgh Regional Science and Engineering Fair

AICHE Annual Meeting
Columbia Chemical Engineering Department Representative Recruiter 2019

8th Northeastern Complex Fluids and Soft Matter Workshops
Volunteer 2018

Society of Women Engineers (Columbia University Student Chapter)
Invited Workshop Speaker March 2017

- Hosted a science workshop as part of the Society of Women Engineers (SWE) Engineering Exploration Experience and interacted with 30 local high school students who explored elements of electrochemistry and light-matter interactions

Penn State University Chemical Engineering Graduate Student Association
Class Representative for 2nd year students May 2015 – May 2016

Society of Women Engineers (University of Minnesota Student Chapter)
Professional Development Director September 2013 – May 2014

- Planned SWE's professional retreat events that provided members networking opportunities
- Applied for and received student group grants from the University

Outreach Director September 2011 – May 2013

- Hosted SWE's main outreach events that encourage young girls to pursue degrees in science and engineering fields
- Invited two university professors and an alumnus to discuss their experience as women in technical fields