

# Jiahao Zhu

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## Education

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<b>University of Minnesota, Twin Cities</b> (Minneapolis, MN, U.S.A.) GPA: 3.85/4.00	2018 – 2020
Master of Science in Chemical Engineering	
Research Advisors: Regent Prof. Frank S. Bates and Regent Prof. Timothy P. Lodge	
<b>University of California, Berkeley</b> (Berkeley, CA, U.S.A.) GPA: 3.97/4.00	2015 – 2017
Bachelor of Science in Chemical Engineering and Materials Science Engineering	
Research Advisor: Prof. Peidong Yang	
<b>University of California, Los Angeles</b> (Los Angeles, CA, U.S.A.) GPA: 3.99/4.00	2013 – 2015

## Research Experience

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**Graduate Student Researcher** 2018 – 2020

*University of Minnesota Twin Cities, Chemical Engineering and Materials Science Engineering*  
*Advisors: Prof. Frank S. Bates and Prof. Timothy P. Lodge*

Discovered the effect of triblock copolymer end-block asymmetry on phase behavior

- Synthesized and characterized the block copolymers with controlled chain length and dispersity
- Determined the phase behavior by small-angle X-ray scattering technique and pattern analysis skills
- Imaged block copolymer micelles by cryogenic transmission electron microscopy
- Displayed the viscoelastic behavior by rheology experiments

Investigated the effect of solvent selectivity on micelle chain exchange kinetics

- Determined the interaction parameter of core block in the solvent by cloud point measurement
- Applied dynamic light scattering technique to determine micelle size average and distribution
- Used static light scattering method to characterize micelle size, weight, and interaction with solvent

Skills: Anionic Polymerization, Proton Nuclear Magnetic Resonance ( $^1\text{H}$  NMR), Size Exclusion Chromatography (SEC), Small-Angle X-ray Scattering (SAXS), Rheology, Cryogenic Transmission Electron Microscopy (Cryo-TEM), Dynamic Light Scattering (DLS), Static Light Scattering (SLS), Time-Resolved Small-Angle Neutron Scattering (TR-SANS), Cloud Point Measurements.

### Undergraduate Student Researcher

*University of California Berkeley, College of Chemistry* 2017 – 2018

*Advisor: Prof. Peidong Yang, Mentor: Dr. Chenlu Xie*

Synthesized and characterized shape-oriented metal nanoparticles to catalyze nitrogen fixation

*Johnson & Johnson, R&D* Summer 2015

Led group research on improving industrial detergents for cosmetic production machineries

*Shanghai Fudan-zhangjiang Bio-Pharmaceutical Co. Limited, R&D* Summer 2014

Studied bio-related quality control in pharmaceutical industry and gas chromatography technique

## Publications

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1. Wang, E.; **Zhu, J.**; Bates, F. S.; Lodge, T. P. Effect of Solvent Selectivity on Chain Exchange Kinetics in Block Copolymer Micelles. *Macromolecules* **2020**, *53*, 1, 417–426.

## Awards and Fellowships

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Full Research Sponsorship from Infineum and Argonne National Laboratory, \$31000	2019 – 2020
CEMS First Year Fellowship at University of Minnesota Twin Cities, \$31000	2018 – 2019
Highest Honors in General Scholarship at University of California Berkeley	2017
University of California Dean's Honor List	2013 – 2016

## **Teaching Experience**

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**Teaching assistant**, Junior Chemical Engineering Lab (UMN CHEN 3401W)

Spring 2019

Held well-attended office hours. Took charge of lab safety and graded homework and tests. Helped undergraduate students with course materials and lab reports.