

Kevin W. Gao

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Education

University of California, Berkeley

2017 – present

Ph.D. Candidate in Chemical Engineering

California Institute of Technology

2013 – 2017

B.S. Chemical Engineering (Process Systems) – 3.9/4.0 GPA

Experience

Graduate Student, University of California, Berkeley

2017 – present

Advisor: Professor Nitash P. Balsara

- Characterizing ion transport and phase behavior in block copolymer and polymer blend electrolytes for application in lithium batteries; lab safety coordinator.

Summer Undergraduate Research Fellow, Massachusetts Institute of Technology

June 2016 – August 2016

Advisor: Professor Klavs F. Jensen

- Developed a novel chemical reaction optimization strategy via on-demand synthesis in microliter droplets; implemented a MINLP algorithm that reduced experiments needed for optimization by 57%

Undergraduate Research Fellow, California Institute of Technology

June 2014 – November 2015

Advisor: Professor Brian M. Stoltz

- Synthesized and characterized intermediates for the total synthesis of the natural product jorumycin

Intern, Los Alamos National Laboratory: P-24 Plasma Physics

May 2012 – August 2013

Advisor: Dr. Thomas P. Intrator

- Adapted design and constructed a fiber optic-positioning trigger to detect light emission from flux ropes

Graduate Student Instructor, University of California, Berkeley

CBE154 – Chemical Engineering Laboratory (Spring Semester 2019-20)

CBE162 – Process Dynamics and Controls (Fall Semester 2018-19)

Teaching Assistant, California Institute of Technology

ChE101 – Chemical Reaction Engineering (Winter Term 2016-17)

ChE9 – Chemical Synthesis and Characterization for Chemical Engineering Lab (Spring Term 2015-16)

Ch3a – Introduction to Chemistry Lab (Fall Term 2015-2016, Winter Term 2015-16)

Publications

1. **K. W. Gao**, X. Jiang, Z. Hoffman, G. Sethi, S. Chakraborty, N. Balsara. "Optimizing the monomer structure of polyhedral oligomeric silsesquioxane for ion transport in hybrid organic-inorganic block copolymers," *J. Polym. Sci.* 2020. 58, 363-371. DOI: 10.1002/pol.20190073
2. L. Baumgartner, C. Coley, B. Reizman, **K. W. Gao**, K. Jensen. "Optimum catalyst selection over continuous and discrete process variables with a single droplet microfluidic reaction platform," *React. Chem. Eng.* 2018. 3, 301-311. DOI: 10.1039/C8RE00032H
3. J. Sears, T. Intrator, Y. Feng, H. Swan, J. Klarenbeek, **K. W. Gao**. "Investigating the momentum balance of a plasma pinch: An air-side stereoscopic imaging system for locating probes," *Rev. Sci. Instrum.* 2014. 85, 103509. DOI: 10.1063/1.4898176

Skills

Programming: MATLAB, Python, C, HTML, CSS

Software: Microsoft Office, EC-Lab, Igor, ChemDraw, MestReNova

Laboratory: EIS, DSC, GPC, NMR, SAXS, TGA, glovebox, schlenk line, cell assembly

Activities

- Co-founder of Ultra Seltzer of America | ultraseltzer.org
- Member of Tau Beta Pi, AIChE, APS, BERC
- Four-year starter for Caltech's Men's Soccer Team

Awards and Honors

2017 National Defense Science & Engineering Graduate Fellowship

2014 Samuel and Berta Spalter Summer Undergraduate Research Fellowship

2013 US National Chemistry Olympiad Top 20 Study Camp Finalist

LANL Foundation \$20,000 Gold Scholarship