Leslie S. Hamachi

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ACADEMIC APPOINTMENTS

Assistant Professor of Chemistry 2020-present
Chemistry and Biochemistry Department, California Polytechnic State University, San Luis Obispo

Adjunct Professor 2018
Department of Science and Mathematics, Fashion Institute of Technology
Courses Taught: SC 147, Section 301 "Forensics of Fiber Analysis"

EDUCATION

Northwestern University, Evanston, IL 2018-2020
NSF Center for Sustainable Polymers Postdoctoral Fellow
(Advisor: Prof. William Dichtel)

Columbia University, New York City, NY 2013-2018
Ph.D., Chemistry (2018), M. Phil., Chemistry (2017), M.A., Chemistry (2015)
Thesis: "Control Over Cadmium Chalcogenide Nanocrystal Heterostructures via Precursor Conversion Kinetics" (Advisor: Professor Jonathan Owen)

University of California, Berkeley 2009-2013
B.S. in Chemistry with Honors, Concentration in Materials Chemistry (2013)
(Advisor: Professor Paul Alivisatos)

AWARDS & HONORS

Postdoctoral Travel Award, Northwestern University	2020
Distinguished Young Scholar, University of Washington	2019
NSF Center for Sustainable Polymers, Postdoctoral Fellow	2018-2020
Pegram Award, Columbia University	2018
Two Photon Science Communication Grant	2018
NSF GRFP Honorable Mention	2014, 2015
Regent's and Chancellor's Scholar, UC Berkeley	2009-2013
College of Chemistry Senior Undergraduate Research Award, UC Berkeley	2013
College of Chemistry Undergraduate Summer Research Award, UC Berkeley	2011

COURSES TAUGHT

CHEM 124: General Chemistry for Physical Science and Engineering I. (F20, S21)
CHEM 127: General Chemistry for Agriculture and Life Science I. (W21)

PUBLICATIONS (Cal Poly undergraduates are underlined)

Peer-reviewed publications from postdoctoral and graduate work:

1. *Lee, K.K.*; **Hamachi, L.S.** Big Diels: 3D Printing Covalent Adaptable Networks. *Matter* **2021**, *4*, 2634-2637.

2. **Hamachi, L.S.**; Rau, D.; Arrington, C.; Sheppard, D.T.; Fortman, D.J.; Williams, C.B.; Dichtel, W.R. Dissociative Carbamate Exchange Anneals 3D Printed Acrylates. *ACS Appl. Mater. Interfaces* **2021**, *In Press.*
3. Rreza, I.; Yang, H.; **Hamachi, L.**; Campos, M.; Hull, T.; Treadway, J.; Kurtin, J.; Chan, E.M.; Owen, J.S. Performance of Spherical Quantum Well Down Converters in Solid State Lighting. *ACS Appl. Mater. Interfaces* **2021**, *13*, 12191-12197.
4. Sheppard, D.T.; Jin, K.; **Hamachi, L.S.**; Dean, W.; Fortman, D.J.; Ellison, C.J.; Dichtel, W.R. Reprocessing Postconsumer Polyurethane Foam Using Carbamate Exchange Catalysis and Twin-Screw Extrusion. *ACS Cent. Sci.* **2020**, *6*, 921-927.
5. De Roo, J.; Huang, Z.; Schuster, N. J.; **Hamachi, L. S.**; Congreve, D. N.; Tang, M. L.; Owen, J. S. Anthracene Diphosphate Ligands for Nanocrystal Surfaces; Towards Efficient Upconversion. *Chem. Mater.* **2020**, *32*, 1461-1466.
6. **Hamachi, L.S.**; Yang, H.; Jen-La Plante, I.; Saenz, N.; Qian, K.; Campos, M.P.; Cleveland, G.T.; Rreza, I.; Oza, A.; Walravens, W.; Chen, E.M.; Hens, Z.; Crowther, A. C.; Owen, J.S. Precursor Reaction Kinetics Control Compositional Grading in $CdSe_{1-x}S_x$ Nanocrystal Heterostructures. *Chem. Sci*. **2019**, *10*, 6539-6552.
7. Yang, H.; **Hamachi, L.S.**; Rreza, I.; Wang, W.; Chan, E. Design Rules for One-Step Seeded Growth of Nanocrystals: Threading the Needle Between Secondary Nucleation and Ripening. *Chem. Mater*. **2019**, *31,* 4173-4183.
8. Choi, C.; Colón-Berríos, A.R.; **Hamachi, L.S.**; Owen, J.S.; Schwartz, T.H.; Ma, H.; Kymissis, I. Localizing Seizure Activity in the Brain Using Implantable microLEDs with Quantum Dot Fluorescence. *Adv. Mater. Technol*. **2018**, 1700366.
9. **Hamachi, L.S.**; Jen-La Plante, I.; Coryell, A.C.; De Roo, J.; Owen, J.S. Kinetic Control of CdS Nanocrystal Nucleation Using a Library of Thiocarbonates, Thiocarbamates, and Thioureas. *Chem. Mater.* **2017**, *29*, 8711-8719.

US PATENTS (Cal Poly undergraduates are underlined)

Completed at Columbia University

1. Hendricks, M.P.; Campos, M.P.; **Hamachi, L.S.**; Cleveland, G.T.; Jen-La Plante, I.; Owen, J.S. "Methods of Producing Metal Sulfides, Metal Selenides, and Metal Sulfides/Selenides Having Controlled Architectures Using Kinetic Control" PCT Int. Appl. (2016), WO 2016115416 A1 20160721.

PROFESSIONAL EXPERIENCE

Zetasizer Nano-ZS Superuser, New York City, NY 2014-2018
Columbia University Shared Materials Characterization Lab

Lawrence Berkeley National Lab, Berkeley, CA 2011
Summer Undergraduate Laboratory Intern, Department of Energy
(Advisor: Prof. Delia Milliron)

Oxonica Materials, Inc., Mountain View, CA 2009, 2010
Laboratory Assistant
(Advisor: Dr. Michael Natan)

PROFESSIONAL SERVICE

Pacifichem Symposium Organizer: *Excitonic Nanomaterials: Synthesis and Applications* 2021
Mentor: Chemistry Women Mentorship Network 2020-present

Skype a Scientist 2018-present
NSF Center for Sustainable Polymers 4H Curriculum Reviewer 2019-2020
National Center for Women & Information Technology (NCWIT) Reviewer 2018-2019
Ad hoc Manuscript Reviewer: (https://publons.com/a/1587257/) *2018*-present
ACS Material Letters, Chemistry of Materials, Journal of Materials Chemistry C, Polymer Chemistry, Crystals, Catalysts,

SERVICE AT CAL POLY

Scheduling and Curriculum Committee (Chemistry & Biochemistry Department) 2020-present

PROFESSIONAL DEVELOPMENT ACTIVITIES

Cal Poly Effective Teaching Practices Program – Early Career Faculty Cohort 2020-present
CTLT Faculty Peer Coaching Program 2020
American Chemical Society New Faculty Workshop 2020
Associate, Northwestern Center for the Integration of Research, Teaching, and Learning 2019

RECENT TALKS AND PRESENTATIONS (undergraduate student authors are underlined)

1. **Hamachi, L.S**. "Polymer Recycling." Skype a Scientist Live, January 22, 2021. *(invited)*
2. **Hamachi, L.S.**; …; Owen, J.S. "Control over Cadmium Chalcogenide Nanocrystal Heterostructures via Precursor Conversion Kinetics." Distinguished Young Scholars Seminar, University of Washington, Seattle, WA, United States, August 5, 2019. ***(invited)***
3. **Hamachi, L.S.**; …; Owen, J.S. "Control over Cadmium Chalcogenide Nanocrystal Heterostructures via Precursor Conversion Kinetics." Barnard College, New York, NY, United States, June 10, 2019. ***(invited)***
4. **Hamachi, L.S.**; …; Owen, J.S. "Kinetic Control over Chalcogen Distributions in the Synthesis of $CdSe_{1-x}S_x$ Nanoparticles and Nanoplatelets." Semiconductor Nanocrystals Gordon Research Seminar, Smithfield, RI, United States, July 14, 2018. ***(invited)***
5. **Hamachi, L.S.**; …; Owen, J.S. "Colloidal Nanomaterials Synthesis and Characterization Using Electron Microscopy." Materials Research REU Program Seminar, New York City, NY, United States, July 12, 2018. ***(invited)***
6. **Hamachi, L.S.**; …; Owen, J.S. "Kinetic Control of One-Pot Core/Shell Nanoparticles and Nanoplatelets using Thio- and Selenoureas." 255th ACS National Meeting & Exposition, New Orleans, LA, United States, March 20, 2018.
7. The Graduate School Experience: What to Expect, 255th ACS National Meeting & Exposition, New Orleans, LA, United States, March 18, 2018. ***(invited panelist)***
8. **Hamachi, L.S.**; …; Owen, J.S. "Watching Neuronal Activity with Fluorescent Nanocrystals." Columbia University Neuroscience Outreach, New York, NY, United States, November 6, 2017.
9. **Hamachi, L.S.**; …; Owen, J.S. "Kinetic Control of Core/Shell Nanoparticle Heterostructures and Nanoplatelets using Thio- and Selenoureas." Columbia University Chemistry Department Friday Synthesis Symposium, New York, NY, United States, November 3, 2017.
10. **Hamachi, L.S.**; De Roo, J.; Owen, J.S. "Chalcogenide Precursor Design and II-VI/IV-VI Nanoparticle Synthesis" International Grant Midterm Meeting – COMPASS project 691185, Camogli GE, Italy, September 25, 2017. ***(invited)***
11. **Hamachi, L.S.**; Jen-La Plante, I.; Owen, J.S. "Beyond Thioureas: Highly Monodisperse CdS Nanocrystal Syntheses via Thiocarbonates, Thiocarbamates, and Thioureas." 253rd ACS National Meeting & Exposition, San Francisco, CA, United States, April 6, 2017, INOR-1564.

12. **Hamachi, L.S.**; Jen-La Plante, I.; Owen, J.S. "One-step Synthesis of Core/Shell Nanocrystals with a Graded Interface." 251st ACS National Meeting & Exposition, San Diego, CA, United States, March 16, 2016, INOR-1160.
13. **Hamachi, L.S.**; Jen-La Plante, I.; Owen, J.S. "One-pot Core/Shell Nanocrystal Synthesis Using Thio- and Selenoureas." Columbia University Chemistry Department Friday Synthesis Symposium, New York, NY, United States, February 12, 2016.

MENTORED CAL POLY STUDENTS

Students engaged in research in my laboratory: **11** (*1 thesis students*)
Student presentations mentored: **8** (*3 external presentations at regional, national, or international conferences)*

Current:
Kathryn Lee, MS Polymers and Coating Science (expected 2022)
Amanda Tsai, BS Materials Engineering + MS Polymers and Coatings Science (expected 2022)
André Lagron, BS Chemistry (expected 2022)
Dean Kim, BS Biochemistry (expected 2022)
Donna Tran, BS Biochemistry (expected 2022)
Alison Chew, BS Materials Engineering (expected 2022)
Daisy Kamp, BS Materials Engineering (expected 2022)
Brandon Ngo, BS Chemistry (expected 2023)
Sachi Ottoes, BS Chemistry (expected 2024)

Previous:
Brendan Posson, MS Polymers and Coatings Science (2021)
Ethan Nogle, BS Chemistry (expected 2024)

GRANTS (PI)

External/Internal Funding
Grant Applications
1) Primary investigator. "ERI: Morphology-Dependent Studies of 3D Covalent Organic Frameworks as Adsorbents." National Science Foundation, Engineering Research Initiation. Applied JUN 2021. Pending.
2) Co-investigator. "Cal Poly Polymers and Coatings Science Program Funding Proposal for NIST GMSE Fellowships." National Institute of Standards and Technology (NIST) Graduate Student Measurement Science and Engineering (GMSE) Fellowship Program. Applied MAR 2021. Denied.
3) Co-investigator. "Polymers and Coatings Science Master's Degree Fellowship Grant Proposal." Department of Education, Graduate Assistance in Areas of National Need. Applied MAR 2021. Pending.
4) Primary investigator. "Mechanical Properties of Bacterial Cellulose/SiO_2 Composites." California State University Program for Education and Research in Biotechnology (CSUPERB), New Investigator Grant Program. Applied FEB 2021. Awarded.
5) Primary investigator. "Development of Isocyanurate Exchange Reactions for a New Class of Covalent Organic Frameworks." American Chemical Society Petroleum Research Fund, Undergraduate New Investigator. Applied OCT 2020. Denied.