CHONG LIU

Neubauer Family Assistant Professor
Pritzker School of Molecular Engineering, University of Chicago
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Education

Ph.D.	Materials Science & Engineering, Stanford University	2009-2015
Ph.D. Minor	Civil & Environmental Engineering, Stanford University	2011-2015
B.S.	Chemistry, Fudan University (Shanghai, China)	2005-2009

Appointments

2018-	Neubauer Family Assistant Professor, University of Chicago.
2015-2018	Postdoctoral Scholar, Stanford University, with Prof. Steven Chu
2009-2015	Ph.D., Stanford University, with Prof. Yi Cui and Prof. Alexandria Boehm

Honors and Awards

2024	Sloan Research Fellowship in Chemistry
2024	Scialog Fellow – Sustainable Minerals, Metals, and Materials
2023	Camille Dreyfus Teacher-Scholar
2023	Early Career Advisory Board of *Chemical Reviews*
2022	DOE Early Career Award
2022-2026	AMEWS EFRC Thrust 1 Lead
2022	DOE Geothermal Lithium Extraction Prize
2022	*EcoMat* (Wiley) Young Advisory Board
2021	Emerging Investigators of Sustainable Nanotechnology Organization
2020	MIT TR35
2018	Frontiers of Molecular Engineering Symposium Invited Speaker (RSC at UChicago)
2018-2023	Neubauer Family Assistant Professorship
2017	Finalist, BBC Food and Farming Awards “Global Champion”

Interests

X-ray Diffraction, X-ray Absorption, Anomalous Small Angle X-ray Scattering, Transmission X-ray Microscopy

Ideas for Advocacy for the User Community

- Collect user feedback
- Organize user workshop

Publications

H-index: 38 Total Citation: 12966

Google Scholar: https://scholar.google.com/citations?user=DtTHb9gAAAAJ&hl=en

(* denotes corresponding author; † denotes equal contribution; underline denotes undergraduate student)

Independent Work

Submitted, Under Review, and Accepted

59. L. Kong , G. Yan , K. Hu , Y. Yu , N. Conte , K. McKenzie, M. Wagner , S. Boyes , H. Chen , **C. Liu***, X. Liu. Electro-driven direct lithium extraction from geothermal brines to generate battery-grade lithium hydroxide. *Submitted*.
58. S. Zou, W. C. Jeon, M. Wang, Y. Han, G. Yan, G. T. Hill, H. Zhou, G. C. Schatz, **C. Liu***. Pinning angstrom-size channel for separation of rare earth elements. *In revision*.
57. E. Hoenig, Y. Han, M. Wang, **C. Liu***. Electric-field driven in-situ generation of (sub)nanometer pores for ion selective transport. ***Nature Communications***, ***in revision***.
56. G. Yan, J. Wei, E. Apodaca, S. Choi, P. Eng, J. Stubbs, Y. Han, S. Zou, M. Bera, R. Wu, E. Karapetrova, H. Zhou, W. Chen, **C. Liu***. Identifying critical features of iron phosphate particles for lithium extraction preference. ***Nature Communications***, ***accepted***.

Published

55. Y. Han, G. T. Hill, P. Smeets, X. Hu, G. Yan, S. Zou, F. Shi, H. Zhou, **C. Liu***. Uncovering the predictive pathways of lithium and sodium interchange in layered oxides. ***Nature Materials***, 2024, doi.org/10.1038/s41563-024-01862-8.
54. M. Wang, Q. Xiong, N. H. C. Lewis, M. Wang, O.-S. Lee, G. Yan, D. Ying, Y. Han, F. Shi, H. Zhou, A. Tokmakoff, G. C. Schatz*, **C. Liu***. Lanthanide transport in angstrom-scale MoS_2-based two-dimensional channels. ***Science Advances***, 2024, 10, eadh1330.
53. M. Wang, T. Sadhukhan, N. Lewis, M. Wang, X. He, G. Yan, E. Hoenig, Y. Han, G. Peng, O.-S. Lee, F. Shi, D. M. Tiede, H. Zhou, A. Tokmakoff, G. C. Schatz*, **C. Liu***. Anomalously Enhanced Ion Transport and Uptake in Functionalized Angstrom-scale Two-dimensional Channels. ***PNAS***, 2024, 121 (2) e2313616121.
52. J. Ayarza, J. Wang, H. Kim, P.-R. Huang, B. Cassaidy, G. Yan, **C. Liu**, H. M. Jaeger, S.J. Rowan, and A. P. Esser-Kahn. Bioinspired mechanical mineralization of organogels. ***Nature Communications***, 2023, 14, 8319.
51. G. Peng, J.-W. Zhao, J. Wang, E. Hoenig, S. Wu, M. Wang, W.-X. Li, J.-X. Liu*, **C. Liu***. Crystal Structures of Molybdenum Borides Dictate Electrocatalytic Ammonia Synthesis Efficiency. ***Applied Catalysis B: Environmental***, 2023, 338, 123020.
50. T. Wu, B. Liu, **C. Liu**, J. Wan, A. Yang, K. Liu, F. Shi, J. Zhao, Z. Lu, G. Chen, A. Pei, H. Y. Hwang, Y. Cui. Solar-driven efficient heterogeneous subminute water disinfection nanosystem assembled with fingerprint MoS_2. ***Nature Water***, 2023, 1, 462–470.
49. D. Wang, C. Zhou, A. S. Filatov, W. Cho, F. Lagunas, M.Wang, S. Vaikuntanathan, **C. Liu**, R. F. Klie, D. V. Talapin. Direct synthesis and chemical vapor deposition of 2D carbide and nitride MXenes. ***Science***, 2023, 379, 6638, 1242-1247.

    Featured on the cover of ***Science***, vol 379, issue 6638, 24 Mar 2023
48. A. Suresh, S. Rowan*, **C. Liu***. Macroscale fabrication of lightweight and strong porous carbon foams through template-coating pair design. ***Advanced Materials***, 2023, 2206416.
47. G. Yan, G. Kim, R. Yuan, E. Hoenig, F. Shi, X. Chen, Y. Han, Q. Chen, J.-M. Zuo, W. Chen, **C. Liu***. High-Li solid solution phases promoting Li co-intercalation competitiveness in $FePO_4$. ***Nature Communications***, 2022, 13, 4579.

    Editor Featured Article in ***Nature Communications***
46. G. Yan, G. Hill, S. Zou, M. Wang, **C. Liu***. Defining the challenge of Li extraction with 1D olivine host: the roles of competitor and spectator ions. ***PNAS***, 2022, 119 (31) e2200751119.
45. M. Wang, X. He, E. Hoenig, G. Yan, G. Peng, F. Shi, J. M. Radhakrishnan, G. T. Hill, D. M. Tiede, H. Zhou, **C. Liu***. Single-site Copper (II) Cations Enhance Graphene Oxide as Desalination Membrane. ***Iscience***, 2022, 25, 104044.
44. J. Wang, Z. Jiang, G. Peng, E. Hoenig, G. Yan, Y. Liu*, X. Du*, **C. Liu***. Surface valence state effect of MoO_{2+x} on electrochemical nitrogen reduction. ***Advanced Science***, 2022, 9, 2104857.

43. E. Barry, R. Burns, W. Chen, G. X De Hoe, J. M. Montes De Oca, J. J de Pablo, J. Dombrowski, J. W Elam, A. M Felts, G. Galli, J. Hack, Q. He, X. He, E. Hoenig, A. Iscen, B. Kash, H. H. Kung, N. HC Lewis, **C. Liu**, X. Ma, A. Mane, A. BF Martinson, K. L Mulfort, J. Murphy, K. Mølhave, P. Nealey, Y. Qiao, V. Rozyyev, G. C Schatz, S. J Sibener, D. Talapin, D. M Tiede, M. V Tirrell, A. Tokmakoff, G. A Voth, Z. Wang, Z. Ye, M. Yesibolati, N.J Zaluzec, S. B Darling. Advanced Materials for Energy-Water Systems: The Central Role of Water/Solid Interfaces in Adsorption, Reactivity, and Transport. ***Chemical Reviews***, 2021, 121, 15, 9450–9501.
42. G. T. Hill, F. Shi, H. Zhou, Y. Han, **C. Liu***. Layer spacing gradient $(NaLi)_{1-x}CoO_2$ for electrochemical Li extraction. ***Matter***, 2021, 4, 5, 1611-1624.
41. A. Suresh, G. Hill, E. Hoenig, **C. Liu***. Electrochemically mediated deionization: a review. Invited, ***Molecular Systems Design & Engineering***, 2021, 6, 25–51.
40. E. Hoenig, S. E. Strong, M. Wang, J. M. Radhakrishnan, N. J. Zaluzec, J. L. Skinner, **C. Liu***. Controlling the structure of MoS_2 membranes via covalent functionalization with molecular spacers. ***Nano Letters***, 2020, 20, 7844–7851.
39. G. Peng, J. Wu, M. Wang, J. Niklas, H. Zhou, **C. Liu***. Nitrogen-Defective Polymeric Carbon Nitride Nanolayer Enabled Efficient Electrocatalytic Nitrogen Reduction with High Faradaic Efficiency. ***Nano Letters***, 2020, 20, 4, 2879–2885
38. **C. Liu**, Y. Li, D. Lin, P.-C. Hsu, B. Liu, G. Yan, T. Wu, Y. Cui, S. Chu. Lithium Extraction from Seawater through Pulsed Electrochemical Intercalation. ***Joule***, 2020, 4, 7, 1459-1469

    Highlighted in **Science** doi:10.1126/science.abd8037
37. M. Ye, M. Pasta, X. Xie, K. L. Dubrawski, J. Xu, **C. Liu**, Y. Cui, C. S. Criddle. Charge-Free Mixing Entropy Battery Enabled by Low-Cost Electrode Materials. ***ACS Omega***, 2019, 4, 11785-11790.
36. J. Xu, **C. Liu**, P.-C. Hsu, J. Zhao, T. Wu, J. Tang, K. Liu, Y. Cui. Remediation of heavy metal contaminated soil by asymmetrical alternating current electrochemistry. ***Nature Communications***, 2019, 10, 2440.
35. **C. Liu**[†], T. Wu[†], P.-C. Hsu, J. Sun, D. Lin, Y. Cui. Direct/Alternating current electrochemical method for removing and recovering heavy metal from water using graphene oxide electrode. ***ACS Nano***, 2019, 13, 6431-6437.
34. T. Wu[†], **C. Liu**[†], B. Kong, J. Sun, Y. Gong, K. Liu, J. Xie, A. Pei, Y. Cui. Amidoxime-functionalized macroporous carbon self-refreshed electrode materials for rapid and high-capacity removal of heavy metal from water, ***ACS Central Science***, 2019, 5, 719–726.

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33. K. Liu[†], **C. Liu**[†], P.-C. Hsu, J. Xu, B. Kong, T. Wu, R. Zhang, G. Zhou, W. Huang, J. Sun, Y. Cui. Core-shell nanofibrous materials with high particulate matter removal efficiencies and thermally triggered flame retardant properties. ***ACS Central Science***, 2018, 4, 894–898.
32. **C. Liu**, P.-C. Hsu, J. Xie, J. Zhao, T. Wu, H. Wang, W. Liu, J. Zhang, S. Chu, Y. Cui. A half-wave rectified alternating current electrochemical method for uranium extraction from sea water. ***Nature Energy***, 2017, 2, 17007.

    Featured on the cover of ***Nature Energy***, Vol. 2 No. 4, 2017

    Highlighted in ***Nature Energy***, 2017, 2, 17022. **Stanford News**, **Phys.org**, **China.org**, etc.
31. **C. Liu**, D. Kong, P.-C. Hsu, H. Yuan, H. W. Lee, Y. Liu, H. Wang, S. Wang, K. Yan, D. Lin, P. Maraccini, K. Parker, A. B. Boehm, Y. Cui. Rapid water disinfection by vertically aligned MoS_2 nanofilms and visible light. ***Nature Nanotechnology***, 2016, 11, 1098–1104.

    Highlighted in ***Nature***, 2016, 536, 253. ***Nature Photonics*** 2016, 10, 621. **SLAC News**, **IEEE Spectrum**, etc.

30. J. Xu[†], **C. Liu**[†], P.-C. Hsu, K. Liu, Y. Liu, Y. Cui. Roll-to-roll transfer of electrospun nanofiber film for high-efficiency transparent air filter. ***Nano Letters***, 2016, 16, 1270-1275. **(**†Denotes equal contribution)
29. **C. Liu**[†], P.-C. Hsu[†], H. W. Lee, M. Ye, G. Zheng, N. Liu, W. Li, Y. Cui. Transparent air filter for high-efficiency $PM_{2.5}$ capture. ***Nature Communications***, 2015, 6, 6205. **(**†Denotes equal contribution)

    Highlighted in **Wall Street Journal**, **Stanford News**, etc.
28. **C. Liu**, X. Xie, W. Zhao, J. Yao, D. Kong, A. B. Boehm, Y. Cui. Static electricity powered copper oxide nanowire microbicidal electroporation for water disinfection. ***Nano Letters***, 2014, 14, 5603–5608.
27. **C. Liu**, X. Xie, W. Zhao, N. Liu, P. A. Maraccini, L. M. Sassoubre, A. B. Boehm, Y. Cui. Conducting nano-sponge electroporation for affordable and high-efficiency disinfection of bacteria and viruses in water. ***Nano Letters***, 2013, 13, 4288–4293.

    Highlighted in ***Nature Nanotechnology***, 2013, 8, 699
26. R. Zhang, **C. Liu**, G. Zhou, J. Sun, N. Liu, P.-C. Hsu, H. Wang, Y. Qiu, J. Zhao, T. Wu, W. Zhao, Y. Cui. Morphology and property investigation of primary particulate matter particles from different sources ***Nano Research***, 2018, 11, 3182–3192.
25. R. Zhang, B. Liu, A. Yang, Y. Zhu, **C. Liu**, G. Zhou, J. Sun, P.-C. Hsu, W. Zhao, D. Lin, Y. Liu, A. Pei, J. Xie, W. Chen, J. Xu, Y. Jin, T. Wu, X. Huang, Y. Cui. In Situ Investigation on the Nanoscale Capture and Evolution of Aerosols on Nanofibers. ***Nano Letters***, 2018, 18, 1130–1138.
24. P.-C. Hsu, **C. Liu**, A. Y. Song, Z. Zhang, Y. Peng, J. Xie, K. Liu, C.-L. Wu, P. B. Catrysse, L. Cai, S. Zhai, A. Majumdar, S. Fan, Y. Cui. A dual-mode textile for human body radiative heating and cooling. ***Science Advances***, 2017, 3, e1700895.
23. J. Zhao, L. Liao, F. Shi, T. Lei, G. Chen, A. Pei, J. Sun, K. Yan, G. Zhou, J. Xie, **C. Liu**, Y. Li, Z. Liang, Z. Bao, Y. Cui. Surface fluorination of reactive battery anode materials for enhanced stability. ***JACS***, 2017, 139, 11550–11558.
22. J. Xie, J. Zhao, Y. Liu, H. Wang, C. Liu, T. Wu, P.-C. Hsu, D. Lin, Y. Jin, Y. Cui. Engineering the surface of $LiCoO_2$ electrodes using atomic layer deposition for stable high-voltage lithium ion batteries. ***Nano Research***, 2017, 10, 3754–3764.
21. Z. Lu, G. Chen, Y. Li, H. Wang, J. Xie, L. Liao, **C. Liu**, Y. Liu, T. Wu, Y. Li, A. C. Luntz, M. Bajdich, Y. Cui. Identifying the active surfaces of electrochemically tuned $LiCoO_2$ for oxygen evolution reaction. ***JACS***, 2017, 139, 6270–6276.
20. K. Liu, A. Pei, H. R. Lee, B. Kong, N. Liu, D. Lin, Y. Liu, **C. Liu**, P.-C. Hsu, Z. Bao, Y. Cui. Lithium metal anodes with an adaptive "solid-liquid" interfacial protective layer. ***JACS***, 2017, 139, 4815–4820.
19. W. Chen, Y. Liu, Y. Li, J. Sun, Y. Qiu, **C. Liu**, G. Zhou, Y. Cui. In situ electrochemically derived nanoporous oxides from transition metal dichalcogenides for active oxygen evolution catalysts. ***Nano Letters***, 2016, 16, 7588–7596.
18. Y. Liu, H. Wang, D. Lin, J. Zhao, **C. Liu**, J. Xie, Y. Cui. A Prussian blue route to nitrogen-doped graphene aerogel as efficient electrocatalysts for oxygen reduction reaction with enhanced active sites accessibility. ***Nano Research***, 2017, 10, 1213-1222.
17. H. Wang, S. Xu, C. Tsai, Y. Li, **C. Liu**, J. Zhao, Y. Liu, H. Yuan, F. Abild-Pedersen, F. B. Prinz, J. K. Nørskov, Y. Cui. Direct and continuous strain control of catalysts with tunable battery electrode materials. ***Science***, 2016, 354, 1031-1036.
16. P.-C. Hsu, A. Song, P. Catrysse, **C. Liu**, Y. Peng, J. Xie, S. Fan, Y. Cui. Radiative human body cooling by nanoporous polyethylene textile. ***Science***, 2016, 353, 1019-1023.
15. Y. Li, **C. Liu**, Y. Cui, S. Walse, R. Olver, D. Zilberman, W. Mitch. Development of an activated carbon-based electrode for the capture and rapid electrolytic reductive debromination of methyl bromide from post-harvest fumigations. ***Environmental Science & Technology***, 2016, 50, 11200-11208.

14. R. Zhang, **C. Liu**, P.-C. Hsu, C. Zhang, N. Liu, J. Zhang, H.-R. Lee, Y. Lu, Y. Qiu, S. Chu, Y. Cui. Nanofiber air filters with high-temperature stability for efficient $PM_{2.5}$ removal from the pollution sources. ***Nano Letters***, 2016, 16, 3642-3649.
13. X. Tao, J. Wang, **C. Liu**, H. Wang, H. Yao, G. Zheng, Z. Seh, Q. Cai, W. Li, G. Zhou, C. Zu, Y. Cui. Balance of surface adsorption and diffusion of Li_2S_x species on nonconductive metal oxides for improving Li-S batteries. ***Nature Communications***, 2016, 7, 11203.
12. W. Liu, Z. Chen, Y. Sun, G. Zhou, H.-R. Lee, **C. Liu**, H. Yao, Z. Bao, Y. Cui. Three-dimensional porous sponge inspired electrode for stretchable lithium-ion batteries. ***Advanced Materials***, 2016, 28, 3578-3583.
11. Z. Liang, D. Lin, J. Zhao, Z. Lu, Y. Liu, **C. Liu**, Y. Lu, H. Wang, K. Yan, X. Tao, Y. Cui. Composite lithium metal anode by melt infusion of lithium into a 3D conducting scaffold with lithiophilic coating. ***PNAS***, 2016,113, 2862-2867.
10. D. Lin, Z. Lu, P.-C. Hsu, N. Liu, J. Zhao, **C. Liu**, Y. Cui. Beyond solvent-based assembly: densely packed silicon clusters by mechanical fabrication for lithium-ion batteries. ***Energy & Environmental Science***, 2015, 8, 2371-2376.
9. Y. Liu, H. Wang, D. Lin, **C. Liu**, P.-C. Hsu, W. Liu, W. Chen, Y. Cui. Electrochemical tuning of olivine-type lithium transition-metal phosphates as efficient water oxidation catalysts. ***Energy & Environmental Science***, 2015, 8, 1719-1724.
8. Z. Liang, G. Zheng, **C. Liu**, N. Liu, W. Li, K. Yan, H. Yao, P.-C. Hsu, S. Chu, Y. Cui. Polymer nanofiber-guided uniform lithium deposition for battery electrodes. ***Nano Letters***. 2015, 15, 2910–2916.
7. M. Alaskar, M. Ames, **C. Liu**, K. Li, R. Horne. Temperature nanotracers for fractured reservoirs characterization. ***Journal of Petroleum Science and Engineering***. 2015, 127, 212.
6. X. Xie, M. Ye, **C. Liu**, P.-C. Hsu, C. Criddle, Y. Cui. Use of low cost and easily regenerated Prussian blue cathodes for efficient electrical energy recovery in a microbial battery. ***Energy & Environmental Science***, 2015, 8, 546-551.
5. P.-C. Hsu, X. Liu, **C. Liu**, X. Xie, H. R. Lee, A. Welch, T. Zhao, Y. Cui. Personal thermal management by metallic nanowire-coated textile. ***Nano Letters***, 2015, 15, 365–371.
4. X. Xie, W. Zhao, H. R. Lee, **C. Liu**, M. Ye, W. Xie, B. Cui, C. Criddle, Y. Cui. Enhancement of the nanomaterial bio-interface by addition of mesoscale secondary features: crinkling of carbon nanotube films to create ridges at subcellular scale. ***ACS Nano***, 2014, 8, 11958–11965.
3. M. Alaskar, M. Ames, S. Connor, **C. Liu**, Y. Cui, K. Li, R. Horne. Nanoparticle and microparticle flow in porous and fractured media--an experimental study. ***SPE Journal***, 2012, 17, 1160-1171.
2. R. Stoltenberg, **C. Liu**, Z. Bao. Selective surface chemistry using alumina nanoparticles generated from block copolymers. ***Langmuir***, 2011, 27, 445-451.
1. Y. Hu, **C. Liu**, Y. Zhang, N. Ren, Y. Tang. Microwave-assisted hydrothermal synthesis of nanozeolites with controllable size. ***Microporous and Mesoporous Materials***, 2009, 119, 306–314.

Book Chapters

1. **C. Liu**, X. Xie, Y. Cui. Antimicrobial nanomaterials for water disinfection, in *Nano-Antimicrobials*, 2012, 465-494, Springer.

Patents (4 patents licensed)

10. **C. Liu**, Y. Han. Methods for the Controlled Synthesis of Layered Lithium and Sodium Transition Metal Oxides Using Electrochemically Assisted Ion-Exchange. UCHI 22-T-122-001.
9. **C. Liu**, G. Yan. Pre-seeding Lithium in 1D Olivine Hosts for Li Extraction. UCHI 22-T-029
8. **C. Liu**, G. T. Hill. Mixed Li and Na Layered Oxides for Electrochemical Li Extraction from Dilute Li Sources. UCHI 21-T-063
7. **C. Liu**, E. Hoenig. Surface functionalized MoS_2 membranes for filtration. PCT/US21/40606

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6. **C. Liu**, Y. Cui, S. Chu. Lithium extraction through pulsed electrochemical intercalation method. S20-114/PROV
5. J. Xu, **C. Liu**, Y. Cui. Remediation of heavy metal contaminated soil by asymmetrical alternating current electrochemistry. S18-064/US
4. **C. Liu**, T. Wu, Y. Cui. Electrochemical Deposition for Metal Ion Extraction/Removal from Water. S16-223/PCT.
3. **C. Liu**, Y. Cui. Molybdenum disulfide for photocatalytic water disinfection. PCT/US2016/052937.
2. **C. Liu**, P.-C. Hsu, R. Zhang, S. Chu, Y. Cui. Air filter for high-efficiency $PM_{2.5}$ capture. WO2016094906.
1. **C. Liu**, S. Jeong, A. Boehm, Y. Cui. Water sterilization devices and uses. WO2013151704.

Teaching

2019- MENG 25300 Molecular Science and Engineering of Water
2020- MENG 21400 Molecular Engineering Thermodynamics

Professional Experience and Service

- Proposal review: NSF, DOE BES, DOE EERE, ACS PRF
- Reviewers: Nature Communications, Nature Sustainability, Joule, Matter, Science Advances, Nano Letters, JACS, Angewandte Chemie, Advanced Materials, Environmental Science & Technology, ACS Central Science, Chem Catalysis, ACS Applied Nano Materials, Environmental Science: Nano, The Journal of Physical Chemistry Letters, Separation and Purification Technology.
- 2020 - present: graduate student admission committee.
- 2018-2020: faculty search committee.
- 2019-present: faculty host for Pritzker School of Molecular Engineering Research Experiences for Undergraduates (REU).
- Faculty liaison to create a fully equitable and inclusive research environment for women, minorities, and international students in Pritzker School of Molecular Engineering
- 2019- present: graduate student admission committee
- Undergraduate student course development committee for Climate and Energy Institute of UChicago
- Conference Organizer: MRS 2023 Spring Meeting; ACS 2023 Fall Meeting; MRS 2024 Fall Meeting.
- Session Chair: MRS 2017 Spring Meeting; MRS 2022 Fall Meeting.
- Membership: ACS, MRS, AIChE.

Selected Invited Presentations

26. ECS Spring 2024, San Francisco, CA
25. Frontiers in Chemical Engineering seminar series, Department of Chemical Engineering, Caltech, 2/29/2024
24. Inorganic Seminar, Department of Chemistry and Biochemistry, UCLA, 2/28/2024
23. AIChE Annual Meeting, Electrochemical separations toward sustainability: analytical techniques and emerging applications, Orlando, FL, 2023
22. ACS Fall, Separations Chemistry for Critical Materials, Division of Industrial and Engineering Chemistry, San Francisco, CA, 2023
21. ACS Fall, Critical Materials: Perspectives from the industry, government, and research communities, San Francisco, CA, 2023
20. ACS Fall, Early Career Women in Environmental Science and Engineering, San Francisco, CA, 2023
19. APS Workshop User Meeting. New Opportunities in Chemistry & Materials Sciences w/Anomalous X-ray Scattering. Argonne National Laboratory, Chicago, May 3, 2023

18. APS March Meeting Energy Workshop, Las Vegas, NV, 2023.
17. International Battery Association Conference, Austin, TX, 2023.
16. Materials Research Lecture, Department of Materials Science and Applied Physics, Caltech, 1/2023.
15. Materials Chemistry Seminar, Department of Chemistry, Purdue University, 9/2022.
14. Mechanical Engineering and Materials Science Department Seminar, Duke University, 02/2022.
13. Environmental Engineering Department Seminar, The George Washington University, 2/15/2022
12. Science for a Circular Economy Series, Argonne National Laboratory, 1/6/2022
11. ACS National Meeting & Expo, Spring, San Diego, CA, 2022.
10. Emerging Investigators in Sustainable Nanotechnology. SNO Conference, Virtual, 2021.
9. MRS, Fall, Boston, MA, 2021.
8. ACS National Meeting & Expo, Fall, Atlanta, GA, Virtual, 2021.
7. Energy Frontier Research Center (ICDC), Virtual, 4/13/2021.
6. Materials Today Nano, Young Women's Day, Virtual, 3/7/2021.
5. ACS National Meeting & Expo, Fall, Virtual, 2020.
4. ACS National Meeting & Expo, Fall, San Diego, CA, 2019.
3. Frontiers of Molecular Engineering Symposium, Chicago, IL, 2018.
2. Telluride Science Research Center (TSRC), Water: Grand Challenges for Molecular Science and Engineering, Telluride, CO, 2018.
1. Emerging Technologies Review, University of California, Santa Barbara, 2017.

Thesis Advisor and Postgraduate Scholar Sponsor

Current

- PhD Students: Grant Hill, Adarsh Suresh, Ian Yan (***MRS Graduate Student Award Gold***), Yu Han, Siqi Zou, Leeann Sun, Dongchen Yin, Suin Choi, Jiadong Liu, Seonwoo Kim, Jingyi Li, Xiaolin Yue, Xiaolong Zhu
- Postdoctoral Scholars: Mingzhan Wang, Kangli Xu
- Undergraduate Students: Raphael Stone (Quad Scholar, UChicago), Emory Apodaca (Quad Scholar, UChicago), Kiernan Schumacher (UChicago), Eva Lim (UChicago)

Alumni

- PhD Students: Eli Hoenig (2018-2023, MRSEC Fellowship, Current Position: postdoctoral researcher at University of Manchester)
- Postdoctoral Scholars: Guiming Peng (2018-2021, Current Position: faculty at Jiangxi Normal University, China). Youwen Warren Zhang (2023, Current Position: faculty of Chemistry at Rutgers University-Camden)
- Visiting Scholars: Jiaqi Wang (2019-2021, Current Position: Postdoctoral Fellow)
- Undergraduate Students: An Li (UChicago), Keda Song (UChicago), Julia Radhakrishnan (UChicago), Leeann Sun (REU, UC Berkeley), Jiawen Wu (Fudan University), Kelsey Gilchrist (UChicago), Martin Ayala (REU, University of Texas at San Antonio), Jon Shao (Quad Scholar, UChicago), Jamie Moore (REU, UC Santa Cruz), Sohaila Abdelhamid (UChicago), Gabriel Velazquez-Quintana (REU)
- High School Students: Jeffery Huang (Lab School), Corona Chen (Lab School), Matthew Lavichant