

# Chenxi Sui (expected graduation: June 2024)

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## EDUCATION

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<b>Ph.D.</b>	The University of Chicago, Pritzker School of Molecular Engineering Advisor: Dr. Po-Chun Hsu	2022-present
<b>Ph.D.</b>	Duke University, Mechanical Engineering and Materials Science Advisor: Dr. Po-Chun Hsu	2019-2022
<b>B.S.</b>	Wuhan University, Physics Advisor: Dr. Xuejiao Hu	2015-2019

## RESEARCH EXPERIENCE

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<b>University of Chicago</b> <b>Research Assistant</b> , Advisor: Dr. Po-Chun Hsu	Present-2024
<b>Duke University</b> <b>Research Assistant</b> , Advisor: Dr. Po-Chun Hsu	2019-Present
<b>University of California, Santa Barbara</b> <b>Research Assistant</b> , Advisor: Dr. Bolin Liao	Jun. 2018-Sep. 2018
<b>Wuhan University</b> <b>Research Assistant</b> , Advisor: Dr. Qu-Quan Wang & Dr. Xuejiao Hu	2017-2019

## PUBLICATIONS (\*CORRESPONDING AUTHORS, †EQUAL CONTRIBUTION)

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- **Chenxi Sui**†, Ziyang Jiang†, Genesis Higueros†, David Carlson\*, Po-Chun Hsu\*, “Designing electrodes and electrolytes for batteries by leveraging deep learning”, *Nano Research Energy*, <https://doi.org/10.26599/NRE.2023.9120102>
- S. Liu†, **Chenxi Sui**†, M. Harbinson, M. Pudlo, H. Perera, Z. Zhang, R. Liu, Z. Ku, M. D. Islam, Y. Liu, Y. Zhu, J. Genzer, S. Khan, P.-C. Hsu\*, J. E. Ryu\*, “A scalable microstructure photonic coating fabricated by roll-to-roll “defects” for daytime subambient passive radiative cooling” *Nano Letters* (2023) DOI: 10.1021/acs.nanolett.3c00111
- **Chenxi Sui**, P. C. Hsu, “Radiative Electrochromism for Energy-efficient Buildings” *Nature Sustainability* 6 (2023): 358–359 DOI: 10.1038/s41893-022-01030-3
- **Chenxi Sui**, J. Pu, T.-H. Chen, J. Liang, Y.-T. Lai, R. Wu, Y. Han, K. Wang, X. Li, V. Viswanathan\*, P.-C. Hsu\*. “Dynamic electrochromism for all-season radiative thermoregulation.” (2023). *Nature Sustainability* 6.4 (2023): 428-437., Highlighted on [Nature Sustainability News](#), [Springer Nature Sustainability Community](#), [UChicago News](#), [Scientific American](#).
- B. Dixon, **Chenxi Sui**, A. Briley, P. C. Hsu, & C. Howell\* “Continuous, Nondestructive Detection of Microorganism Growth at Buried Interfaces with Vascularized Polymers” *ACS Applied Bio Materials* 6.2 (2023): 519-528.
- **Sui, Chenxi**†, Yao-Yu Li†, Xiuqiang Li, Genesis Higueros, Keyu Wang, Wanrong Xie, and Po-Chun Hsu\*. "Bio-Inspired Computational Design of Vascularized Electrodes for High-Performance Fast-Charging Batteries Optimized by Deep Learning." *Advanced Energy Materials* 12, no. 6 (2022): 2103044.
- Li, Xiuqiang, Boran Ma, Jingyuan Dai, **Chenxi Sui**, Divya Pande, David R. Smith, L. Catherine Brinson\*, and Po-Chun Hsu\*. "Metalized polyamide heterostructure as a moisture-responsive actuator for multimodal adaptive personal heat management." *Science advances* 7, no. 51 (2021): eabj7906.

- Rao, Yunfei†, Jingyuan Dai†, **Chenxi Sui**†, Yi-Ting Lai†, Zhe Li, Haoming Fang, Xiuqiang Li, Wei Li, and Po-Chun Hsu\*. "Ultra-Wideband Transparent Conductive Electrode for Electrochromic Synergistic Solar and Radiative Heat Management." *ACS Energy Letters* 6, no. 11 (2021): 3906-3915.
- Li, Xiuqiang, Bowen Sun, **Chenxi Sui**, Ankita Nandi, Haoming Fang, Yucan Peng, Gang Tan\*, and Po-Chun Hsu\*. "Integration of daytime radiative cooling and solar heating for year-round energy saving in buildings." *Nature communications* 11, no. 1 (2020): 1-9.
- Li, Xiuqiang, Wanrong Xie, **Chenxi Sui**, and Po-Chun Hsu\*. "Multispectral thermal management designs for net-zero energy buildings." *ACS Materials Letters* 2, no. 12 (2020): 1624-1643.
- Chen, Keke, **Chenxi Sui**, Yue Wu, Zheng Ao, Shi-shang Guo\*, and Feng Guo\*. "A digital acoustofluidic device for on-demand and oil-free droplet generation." *Nanotechnology* 30, no. 8 (2018): 084001.
- **Chenxi Sui**, Hongsheng Wang\*, Xiang Liu, and Xuejiao Hu\*. "Solar thermochemical water-splitting reaction enhanced by hydrogen permeation membrane." *arXiv preprint arXiv:1808.02175* (2018).
- **Chenxi Sui**, Kai Chen, Liming Zhao, Li Zhou, and Qu-Quan Wang\*. "MoS<sub>2</sub>-modified porous gas diffusion layer with air–solid–liquid interface for efficient electrocatalytic water splitting." *Nanoscale* 10, no. 32 (2018): 15324-15331.

## PATENTS

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- P.-C. Hsu, Y. Rao, C. Sui "System for dual-mode solar heating and radiative cooling" US Provisional Patent Application 63/256,136

## PRESENTATIONS AND INVITED LECTURES

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- (Invited) "Electrochemically dynamic solar and mid-infrared synergistic radiative thermoregulation", Nano Research Energy Gold Award Seminar, Online, 2022.
- "Dynamic solar and mid-infrared synergistic radiative thermoregulation" MRS Boston, 2022.
- "Bio-Inspired Computational Design of Vascularized Electrodes for High-Performance Fast-Charging Batteries Optimized by Deep Learning" MRS Boston, 2022.
- (Invited) "Dynamic solar and mid-infrared synergistic radiative thermoregulation" Duke University Materials Research Society Seminar, Durham, USA, 2022
- "Bio-Inspired Vascularized Electrodes for High-Performance Fast-Charging Batteries Designed by Deep Learning", The 9<sup>th</sup> Annual Triangle Student Research Competition, 2021
- "A Micro-droplet Ejector by Focused Surface Acoustic Wave", The Second International Conference of Microfluidics, Nanofluidics, and Lab-on-a-Chip, Track 80206, Oral Presentation, 2019

## AWARDS

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- Fellowship for Outstanding Self-financed Students Abroad from the Chinese government, 2023
- MRS Graduate Student Award, 2023
- Nano Research Energy Young Star Researcher Gold Award, 2022
- Daoyu Liu Chancellor Fellowship (6 out of 30000), Wuhan University, 2018

## ACADEMIC SERVICES

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- Youth Editorial Board, Nano Research Energy (IF = 17.881), 02/01/2023 – Present
- Reviewer for Nano Research, Nano Research Energy (5 papers)
- Session chair, MRS 2023 spring, EN11.01: Radiative Cooling I and EN11.02: Radiative Cooling II

## TEACHING

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- [LITE](#): one-day educational event for high school students at Duke, 03/2022
- Heat and mass transfer (ME 431L), teaching assistance, Duke University, 08/2021 – 12/2021.
- Dynamics (EGR.244L), teaching assistance, Duke University, 01/2021 – 05/2021. Gave a Lecture: Lagrangian mechanics.

## REFERENCES

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- Prof. Po-Chun Hsu, Pritzker School of Molecular Engineering, University of Chicago
- Prof. Bolin Liao, Department of Mechanical Engineering, UCSB
- Prof. Willie John Padilla, Department of Electrical and Computer Engineering, Duke University
- Prof. Genevieve Lipp, Department of Electrical and Computer Engineering, Duke University
- Prof. Xuejiao Hu, School of Power and Mechanical Engineering, Wuhan University