

# Wen Li

Phone: (773)-690-3055 | Email: [wenli@uchicago.edu](mailto:wenli@uchicago.edu),

Address: 929 E 57<sup>th</sup> St, Chicago, IL, 60637, US

Website: <https://wenli-web.github.io/>

## Education

**Ph.D. in Chemistry, The University of Chicago, Chicago, IL, USA** 2021-Present

Thesis Advisor: Prof. Bozhi Tian, Expected: August 2026. Selected courses: Solids, Materials, and Surfaces; Engineering Interactive Electronics onto PCB; Scientific Computing with Python; Electronic Instrumentation in Biophysics.

GPA: 3.9/4.0

**Exchange Student, UC Berkeley, Berkeley, CA, USA** 2020

Advisor: Prof. Phillip B. Messersmith. Major courses: Properties of Materials Laboratory; Advanced Inorganic Chemistry; Biophysical Chemistry. Major GPA: 4.0/4.0

**B.S. in Chemistry with Honors, Nanjing University, Nanjing, Jiangsu, China** 2017-2021

Thesis advisor: Prof. Cheng-Hui Li. Major GPA: 4.659/5.000; Rank: 1/79.

## Research Experience

**Electrical Bio-interface for Therapy and Perception, UChicago** Chicago, IL

advisor: Prof. Bozhi Tian (Chemistry), Prof. Pedro Lopes (Computer Science).

2021-Present

(a) Contributed to the fabrication of **porous silicon photoelectrochemical devices** and photo-stimulation experiment in vitro on cardiomyocytes, ex vivo on heart tissue, and in vivo on rat hearts. (*Nature*, 2024; *Nat. Nanotechnol.*, 2025)

Experiments and expertise: Photolithography, Inorganic material characterization, Electrophysiology.

(b) Fabricated **wearable therapeutic gas** generation patches for **ischemia-reperfusion heart disease** and **pressure ulcer** (bedsore) treatment. (*Nat. Chem. Eng.*, 2025)

Experiments and expertise: Electrochemistry, PCB design, Cell culture and staining, Animal study.

(c) Developed a **wearable thermal therapy device** that delivers illusory heat or cold to target tissue without placing any thermal source on the top, by combining **electrotactile stimulation** with **thermal referral**. (*Under review, UIST*, 2026)

Experiments and expertise: Wearable electronics, Electrotactile stimulation, Human psychophysics.

**Self-healing polymers by dynamic coordination chemistry, Nanjing University** Nanjing, China

advisor: Prof. Cheng-Hui Li

2018-2021

Developed a new polymeric material by crosslinking small molecule units with metal ions. The material simultaneously possesses high mechanical properties, recyclability, and self-healing. (*CCS Chem.*, 2022)

Experiments and expertise: Organic synthesis, Coordination chemistry, Polymer characterization.

## Working Experience

**Materials Research Intern, Integrated Circuit Lab, Futurewei, San Jose, CA** June-Sept. 2024

(a) Investigated self-healing polymer coatings for buildings, electronics, and microchip radiative cooling.

(b) Developed a group of polymers for polymeric optics with tunable refractive indices in nanometer scale.

(c) Delivered two lead-author patents and two co-authored papers. Won **Outstanding Intern Award** in Futurewei Summer 2024 intern research project (3 awardees out of 30-40 interns).

**Graduate Teaching Assistant, The University of Chicago, Chicago, IL** 2021-2022

Served as TA for three classes: Organic Chemistry, Physical Chemistry experiment and Chemical Kinetics. Developed and delivered recitation classes once a week, supervised over 30 students in teaching laboratories and writing laboratory reports, and held weekly office hours.

## Academic & Community Service

**Cofounder & CTO of HPad, College New Venture Challenge (CNVC), The University of Chicago**

Co-founded a startup developing a medical device for bedsore prevention and treatment based on my Nature Chemical Engineering work. Led technical development and preclinical validation. Selected as one of 15 teams (out of ~70) to advance to CNVC Phase II; secured \$5K in seed funding.

**Team Leader in Academic Service Department, Chemistry Student Union, Nanjing University**  
Held 5+ academic discussion seminars and 2+ final exam review seminars to help students review for university chemistry courses. Won the Exceptional Team Leader in Academic Service Department and the Exceptional Freshman Mentor and Friend awards.

**Reviewer for journals (ACS Nano, Device, npj Biomedical Innovations, IMWUT); conferences (EuroHaptics, UIST)**

Reviewed 10+ research manuscripts since May 2024.

## Awards

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Graduate Student Gold Award, <i>Materials Research Society</i>	2025
Best Poster Award, <i>Materials Research Society</i>	2025
The Olshansky Graduate Student Travel Award, <i>The University of Chicago</i>	2025
Benjamin Ball Freud Merit Scholarship, <i>The University of Chicago</i>	2025
Outstanding Intern Award, <i>Futurewei Technologies, Inc.</i>	2024
Entrepreneurship for Science and Medicine, <i>UChicago Booth</i>	2023
McCormick Fellowship, <i>The University of Chicago</i>	2021
Merit Student of Jiangsu Province, <i>Jiangsu Province</i>	2020
Excellent Student of Nanjing University, <i>Nanjing University</i>	2019
Chow Tai Fook Scholarship, <i>Chow Tai Fook Company</i>	2019
Renmin Scholarship, <i>China's Ministry of Education</i>	2019
First Class Award, <i>Jiangsu Province</i>	2018-2021
National Scholarship, <i>China's Ministry of Education</i>	2018

## Selected Publications and Patents (\*=corresponding author)

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Google Scholar: <https://scholar.google.com/citations?user=9D4DmSUAAA&hl=en>

1. **W Li**, R Ni, B Tian, P Lopes. Electrotactile Improves Thermal Referral. **Under Review, UIST 2026.**
2. **W Li\***, J Zhang, et al., B Tian\*, Hydrogen Evolution in Portable Hydrogel Electrochemical Bioelectronics for Ischemia-Reperfusion Therapy. *Nature Chemical Engineering*, 2, 484-497, **2025.**
3. **W Li**, J Huberman-Shlaes, B Tian\*. Perspectives on Multiscale Colloid-Based Materials for Biomedical Applications. *Langmuir*, 39, 13759-13769, **2023.**
4. **W Li**, HQ Wang, et al., CH Li\*. A strong and rigid coordination adaptable network that can be reprocessed and recycled at mild conditions. *CCS Chemistry*, 4, 3781-3797, **2022.**
5. P Li, J Zhang, H Hayashi, J Yue, **W Li**, et al., B Tian\*. Monolithic silicon for high spatiotemporal translational photostimulation. *Nature*, 626, 990-998, **2024.**
6. J Zhang, P Li, J Yue, LY Meng, **W Li**, et al., B Tian\*. Engineering Silicon-based Catalysts for Intracellular Condensate Control and Oxidative Stress Management. *Nature Nanotechnology*, **2025.**
7. C Yang, P Li, et al., **W Li**, et al., B Tian\*. A bioinspired permeable junction approach for sustainable device microfabrication. *Nature Sustainability*, 7, 1190-1203, **2024.**
8. C Sun, J Yue, P Li, **W Li**, J Ma, C Yang, S Kim, B Tian\*. Sustainable conversion of husk into viscoelastic hydrogels for value-added biomedical applications. *Matter*, 8, 3, **2025.**
9. LY Meng, J Zhang, P Li, **W Li**, et al., B Tian\*. Scalable Bioelectronic Production of Extracellular Vesicles for Cardiac Tissue Regeneration. *Device*, 3, 100968, **2025.**
10. PC Zhao, **W Li**, W Huang, CH Li\*. A self-healing polymer with fast elastic recovery upon stretching. *Molecules*, 25, 597, **2020.**
11. **W Li**, Y Cao, J Wang, J Han, P Wu. Polymeric material and method of forming the same. **US Patent App.** No. PCT/US2024/058461, **2024.**
12. **W Li**, Y Cao, Z Li, J Han, J Wang, P Wu, L Peng. Polymer layer stack and methods of forming thereof. **US Patent App.** No. PCT/US2024/058694, **2024.**
13. CH Li, **W Li**, HQ Wang, WT Gao. Preparation of variable stiffness self-healing materials containing metal-thiol coordination bonds and their applications. **CN Patent** No. 2021111044501, **2021.**