

Dr Lin SU

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CURRENT POSITION

Feb 2025- **Lecturer in Engineering Biology**, Department of Biochemistry, [Queen Mary University of London](http://www.qmul.ac.uk)
Bio-hybrid systems design within Engineering Biology, studying the electron transfer at the interfaces of microorganisms and (nano)materials, for bioelectrical communications, artificial photosynthesis, etc.

PREVIOUS POSITIONS

Feb 2021- **Early Career Research Fellow**, Department of Chemistry, [University of Cambridge](http://www.cam.ac.uk)
Feb 2025 Led a subgroup interfacing living bacteria with synthetic photocatalysts for cascaded solar-to-chemical conversion. Developed protocols for coupling quantum dots to electroactive microbes and established the biological workflows that enabled seven colleagues to run microbiological projects within a chemistry-focused department.
Sept 2016- **Research Assistant**, Molecular Foundry, [Lawrence Berkeley National Laboratory](http://www.lbl.gov)
Dec 2019 Dissected the molecular mechanisms of extracellular electron transfer in both model (*Shewanella oneidensis*) and pathogenic (*Listeria monocytogenes*) bacteria, and engineered heterologous electron transfer pathways in *Escherichia coli*. Gained hands-on expertise in anaerobic microbiology, cytochrome biochemistry, bioelectrochemical characterisation, and synthetic biology.

EDUCATION

Mar 2014- **PhD Biomedical Engineering**, School of Biological Science and Medical Engineering, [Southeast University](http://www.seu.edu.cn)
Feb 2021 Topic: 'Engineering extracellular electron transport for sensing', advisors: Prof. Degang Fu, Prof. Caroline Ajo-Franklin
Engineered synthetic electron transfer pathways in *E. coli* and developed 3D-structured electrode architectures to study how material design shapes microbial electrochemical behaviour. Built core capabilities in genetic circuit construction, electrochemical characterisation, and bioelectronic device fabrication.
Sept 2011- **MSc Biophysics**, School of Biological Science and Medical Engineering, [Southeast University](http://www.seu.edu.cn)
Mar 2014 Topic: 'Nanotechnology enhanced microbial fuel cells performance', advisor: Prof. Degang Fu
Engineered nanostructured electrode surfaces, including TiO₂ nanosheets and carbon-based composites, to improve electron transfer at the biotic-abiotic interface. Developed skills in nanomaterial synthesis, electrode fabrication, and microbial fuel cell.
Sept 2006- **BSc Biotechnology**, College of Life Sciences, [Nanjing Agricultural University](http://www.njau.edu.cn)
Jun 2010 Topic: 'Microbial herbicide development', advisor: Dr. Yunzhi Zhu
Improved the weed-suppressing activity of mycotic spores through combined random mutagenesis and rational strain design, establishing early foundations in microbiology, genetic manipulation, and applied bioengineering.

HONOURS

2024 Merit award for outstanding and sustained contribution, University of Cambridge.
2019 The 14th "Chunhui Cup" innovation and entrepreneurship competition for overseas Chinese scholars, Chinese Ministry of Education and the Chinese Ministry of Science and Technology.
2016 Chinese Government Scholarship, China Scholarship Council, China.

RESEARCH FUNDING & FELLOWSHIPS

2026-2029 Research Grant (£5.3m), Advanced Research and Invention Agency, UK. (Co-I)
2026-2027 Research Grant (£50k), Engineering Biology Hub for environmental processing and recovery of metals, BBSRC, UK. (Co-I)
2026-2026 Research Grant (£49k), UK-HyRES & Henry Royce Institute SPRINT Funding Call, EPSRC, UK. (PI)
2025-2026 Research Grant (£28k), Royal Society, UK. (PI)
2022-2025 Leverhulme Early Career Fellowship, Leverhulme Trust, UK. (PI)
2022-2025 Isaac Newton Trust Grant, Isaac Newton Trust, Trinity College, University of Cambridge, UK. (PI)

MENTORING & TEACHING

(co-)Supervised **15 postgraduate students, 4 rotation student projects and 2 undergraduate projects**.
Module organiser, Tutor, and Advisor for MSc (Biotechnology, Bioinformatics), UG and Foundation in Dept. of Biochemistry, QMUL, since 2025.
Teaching Associate, NanoDTC, University of Cambridge, 2024-2025.
Supervision, Chemical Biology and Drug Discovery, Part III Chemistry, University of Cambridge, 2022-2023.

GENERAL CONTRIBUTIONS

Organization Committee, 2nd International SynBYSS Conference, Spain, 2026.
Co-Lead for Research Innovation & Impact, Centre for Molecular Cell Biology, QMUL, since 2025.
Fellow, Governing Body Member and Trustee, Lucy Cavendish College, University of Cambridge, 2022-2025.
Organization Committee, 1st International SynBYSS Conference, USA, 2024.

Associate Editor/ Editorial Board Member for: [Biotechnology for Food Future](http://www.frontiersin.org) (since 2025), [Frontiers in Microbiology](http://www.frontiersin.org) (since 2025), [Frontiers in Synthetic Biology](http://www.frontiersin.org) (since 2026), [Essays in Biochemistry](http://www.frontiersin.org) (since 2026).

Youth Editorial Board Member for: [Green Carbon](#) (since 2023), [ENGINEERING Environment](#) (2023-2024), [Carbon Capture Science & Technology](#) (since 2026).

Reviewer for: *Chemical Reviews*, *JACS*, *Angewandte Chemie*, *Science Advances*, *ACS Nano*, *Current Opinion in Microbiology*, *Microbial Biotechnology*, *Biotechnology for Biofuels and Bioproducts*, *ACS ES&T Water*, *STAR Protocols*, *Frontiers of Environmental Science & Engineering*, *Frontiers in Bioengineering and Biotechnology*, *Frontiers in Microbiology*, *Biomolecules*, *International Journal of Molecular Sciences*.

Reviewer for: Green Future Fellowships (Royal Academy of Engineering, UK); BBSRC Standard Research Grant (UK Research and Innovation, UK); Postgraduate Research Scholarship (Xi'an Jiaotong-Liverpool University, China).

PRESENTATIONS (Total: >25 oral presentations and invited lectures)

Selected oral research presentations since 2022:

- Keynote, 2026 Japan-UK Engineering Biology training workshop, Oxford, 2026.
- Invited Oral, 2nd International SynBYSS Conference, Barcelona, 2026.
- Invited Oral, IEEE-NANOMED 2025, Hong Kong, 2025.
- Invited Oral, 2nd International Conference on Green Carbon, Qingdao, 2025.
- Invited Oral, 5th International Solar Fuels Conference, Newcastle, 2025.
- Invited Oral, Synthetic Biology Young Speaker Series (SynBYSS), online, 2023.
- Oral, 8th International Society for Microbial Electrochemistry and Technology, Chania, 2022.
- Invited Oral, Engineering Biology Research Consortium 2022 Annual Meeting, Berkeley, 2022.

PUBLICATIONS (Total: 30 publications)

<https://biohybrids.group/publications/>

Citation metrics (google scholar): Citations >1800, h-index = 19

Representation ones ([†]Contributed equally, *Corresponding author):

1. **Su, L.[†]**, Yeung, C. W. S.[†], Milshtein, E., Low, B. Q. L., Liu, Y., Milo, R., Reisner, E. Towards solar-powered growth of autotrophic *Escherichia coli* using photoelectrochemistry. *JACS*, (2026, in press).
<https://doi.org/10.1021/jacs.6c03677>
2. **Su, L.[†]**, Rodríguez-Jiménez, S.[†], Short, M. I. M. & Reisner, E. Adapting gas fermenting bacteria for light-driven domino valorization of CO₂. *Chemical Science*. (2025) (**Cover article**)
<https://doi.org/10.1039/D5SC00764J> (citation: 8)
3. Cobb, S.J., Pornrungraj, C., Andrei, V., Badiani, V.M., **Su, L.**, Manuel, R.R., Pereira, I.A. and Reisner, E. A photoelectrochemical-thermoelectric device for semi-artificial CO₂ fixation employing full solar spectrum utilization. *Device*, (2024).
<https://doi.org/10.1016/j.device.2024.100505> (citation: 22)
4. Fang, S., Wei, R., Cui, Y. * and **Su, L.** * Advancing AI protein structure prediction and design: From amino acid “bones” to new era of all-atom “flesh”. *Green Carbon*, (2024).
<https://doi.org/10.1016/j.greenca.2024.05.001> (citation: 11)
5. Zhang, H. [†], Casadevall, C. [†], Wonderen, J. H. van, **Su, L.**, Butt, J. N., Reisner, E. & Jeuken, L. J. C. Rational design of covalent multiheme cytochrome-carbon dot biohybrids for photoinduced electron transfer. *Adv. Funct. Mater.*, 33(40), p.2302204 (2023).
<https://doi.org/10.1002/adfm.202302204> (citation: 17)
6. Atkinson, J. T. [†], **Su, L.** [†], Zhang, X., Bennett, G. N., Silberg, J. J. & Ajo-Franklin, C. M. Real-time bioelectronic sensing of environmental contaminants. *Nature* 611, 548–553 (2022).
<https://doi.org/10.1038/s41586-022-05356-y> (citation: 244)
7. **Su, L.**, Fukushima, T. & Ajo-Franklin, C. M. A hybrid cyt c maturation system enhances the bioelectrical performance of engineered *Escherichia coli* by improving the rate-limiting step. *Biosens. Bioelectron.* 165, 112312 (2020).
<https://doi.org/10.1016/j.bios.2020.112312> (citation: 54)
8. **Su, L.** [†], Fukushima, T. [†], Prior, A., Baruch, M., Zajdel, T. J. & Ajo-Franklin, C. M. Modifying cytochrome c maturation can increase the bioelectronic performance of engineered *Escherichia coli*. *ACS Synth. Biol.* 9, 115–124 (2020). (**Cover article**)
<https://doi.org/10.1021/acssynbio.9b00379> (citation: 75)
9. **Su, L.**, Yin, T., Du, H., Zhang, W. & Fu, D. Synergistic improvement of *Shewanella loihica* PV-4 extracellular electron transfer using a TiO₂@TiN nanocomposite. *Bioelectrochemistry* 134, 107519 (2020).
<https://doi.org/10.1016/j.bioelechem.2020.107519> (citation: 27)
10. Mevers, E. [†], **Su, L.** [†], Pishchany, G., Baruch, M., Cornejo, J., Hobert, E., Dimise, E., Ajo-Franklin, C. M. & Clardy, J. An elusive electron shuttle from a facultative anaerobe. *eLife* 8, e48054 (2019).
<https://doi.org/10.7554/eLife.48054> (citation: 91)
11. **Su, L.** & Ajo-Franklin, C. M. Reaching full potential: bioelectrochemical systems for storing renewable energy in chemical bonds. *Curr. Opin. Biotechnol.* 57, 66–72 (2019).
<https://doi.org/10.1016/j.copbio.2019.01.018> (citation: 49)
12. Light, S. H., **Su, L.**, Rivera-Lugo, R., Cornejo, J. A., Louie, A., Iavarone, A. T., Ajo-Franklin, C. M. & Portnoy, D. A. A flavin-based extracellular electron transfer mechanism in diverse Gram-positive bacteria. *Nature* 562, 140–144 (2018).
<https://doi.org/10.1038/s41586-018-0498-z> (citation: 701)