

LIN SU

School of Biological and Behavioural Sciences, Queen Mary University of London
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Interests: 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.

PROFESSIONAL

Queen Mary University of London (School of Biological and Behavioural Sciences), UK	
Lecturer in Engineering Biology	Since 2025
University of Cambridge (Department of Chemistry), UK	
Early Career Research Fellow; advisor: Prof. Erwin Reisner	2021-2025
Fellow of Lucy Cavendish College	2022-2025
Rice University (Department of BioSciences), USA	
Research Specialist; advisor: Prof. Caroline Ajo-Franklin	2020-2021
Lawrence Berkeley National Laboratory (Molecular Foundry), USA	
Research Assistant; advisor: Prof. Caroline Ajo-Franklin	2016-2020

EDUCATION

Southeast University (School of Biological Science and Medical Engineering), China	
<i>PhD Biomedical Engineering</i> (advisors: Prof. Degang Fu, Prof. Caroline Ajo-Franklin)	2014-2021
Topic: 'Engineering extracellular electron transport for sensing'	
<i>MS Biophysics</i> (advisor: Prof. Degang Fu)	2011-2014
Topic: 'Nanotechnology enhanced microbial fuel cells performance'	
Nanjing Agricultural University (College of Life Sciences), China	
<i>BA Biotechnology</i> (advisor: Dr. Yunzhi Zhu)	2006-2010

RESEARCH FUNDING & FELLOWSHIPS

2025-2026	Research Grant, Royal Society, UK.
2022-2025	Leverhulme Early Career Fellowship, Leverhulme Trust, UK.
2022-2025	Isaac Newton Trust Grant, Isaac Newton Trust, Trinity College, University of Cambridge, UK.

AWARDS

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.
2018	1 st Place, NanoArt Image Contest, Molecular Foundry, Lawrence Berkeley National Laboratory.
2016	Chinese Government Scholarship, China Scholarship Council, China.
2014	Outstanding Volunteer, Star Volunteer, 2 nd Summer Youth Olympic Games Organizing Committee.
2014	Outstanding graduate student, Southeast University.
2012	Merit student, Southeast University.
2010	Outstanding graduate student, Nanjing Agriculture University.
2009	Outstanding student cadre, Nanjing Agriculture University.

TEACHING

Module organiser, BIO753P - Genome Editing in Biotechnology and Synthetic Biology, MSc in Biotechnology & Synthetic Biology, Queen Mary University London, since 2025.
Teaching Associate, Centre for Doctoral Training in Nanoscience and Nanotechnology (NanoDTC), University of Cambridge, since 2024.
Supervision, Chemical Biology and Drug Discovery, Part III Chemistry, University of Cambridge, 2022-2023.

Graduate student advisor, International Genetically Engineered Machine class, Rice University, 2020.
Judge, Rice Undergraduate Research Symposium (RURS), Rice University, 2020.
Teaching assistant, Modern analytical instruments and experiments, Southeast University, 2014-2016.

MENTORING

Co-supervise **10 postgraduate students**: Soleh Anderlini (PhD student, Chemistry, University of Cambridge, 2023); Marion Short (PhD student, Chemistry, University of Cambridge, 2022); Rachel Egan (PhD student, Chemistry, University of Cambridge, 2022); Melanie Miller (PhD student, Chemistry, University of Cambridge, 2021); Rodrigo Castro Ramirez (PhD student, Chemistry, University of Cambridge, 2021); Biki Kundu (PhD student, Systems/Synthetic/Phys Biology program at Rice University, 2019); Li Dong (MRes Student, School of Biological Science & Medical Engineering at Southeast University, 2015); Suo Liu (MRes Student, School of Biological Science & Medical Engineering at Southeast University, 2014); Haihua Chen (MRes Student, School of Biological Science & Medical Engineering at Southeast University, 2013); Ling Wang (MRes Student, School of Biological Science & Medical Engineering at Southeast University, 2012).

Co-supervise **3 rotation student projects**: Dhruv Menon (MRes Student, NanoDTC, University of Cambridge, 2022); Samantha Coffler (Graduate Student, Systems/Synthetic/Phys Biology program at Rice University, 2020); August Staubus (Graduate Student, Biochemistry and Cell Biology program at Rice University, 2019).

Co-supervise **1 undergraduate research program**: Weimin Cui (Southeast University, 2014).

GENERAL CONTRIBUTIONS

Co-Lead for Research Innovation & Impact, Centre for Molecular Cell Biology, QMUL, since 2025.
Council Member, Lucy Cavendish College, University of Cambridge, 2023-2025.
Governing Body Member and Trustee, Lucy Cavendish College, University of Cambridge, 2022-2025.
Committee Member, Cambridge Chem&Bio LTD, 2023-2025.
Academic Board Member, Cambridge Life Science Network, 2023-2024.
Organization Committee Member of Biophotovoltaic Workshop 2023.
Interviewer for Admissions Selection, Lucy Cavendish College, University of Cambridge, 2022-2024.
PhD and Postdoc interview panel member, Reisner Lab, University of Cambridge, since 2022.
Committee Member, Engineering Biology Interdisciplinary Research Centre, University of Cambridge, 2021-2023.
Session Chair, Biological RIG Showcase, University of Cambridge, 2021.
Peer reviewer, Postgraduate Research Scholarship, Xi'an Jiaotong-Liverpool University, 2020.

Associate Editor for: *Biotechnology for Food Future* (since 2025), *Frontiers in Microbiology* (since 2025).

Youth Editorial Board Member for: *Green Carbon* (since 2023), *Frontiers of Environmental Science & Engineering* (2023-2024).

Reviewer for: *Chemical Reviews*, *Science Advances*, *ACS Nano*, *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*.

CONFERENCE PRESENTATIONS

Invited Oral, 2nd International Conference on Green Carbon, Qingdao, China, 2025.
Invited Oral, 5th International Solar Fuels Conference, Newcastle, UK, 2025.
Invited Oral, 3rd International Outstanding Young Scholars Environment Forum, Beijing, China, 2024.
Invited Oral, The 3rd Europe-China Eco-Environmental Forum for Young Scholars, online, 2024.
Poster, *Molecular Basis of Microbial One-Carbon Metabolism* Gordon Research Seminar and Gordon Research Conference, New Hampshire, USA, 2024.
Invited Oral, Synthetic Biology Young Speaker Series (SynBYSS), online, 2023.
Invited Oral, The 2nd Europe-China Eco-Environmental Forum for Young Scholars, Leuven, Belgium, 2023.
Invited Oral, 1st International Conference on Green Carbon, Qingdao, China, 2023.
Oral, 8th International Society for Microbial Electrochemistry and Technology, Chania, Greece, 2022.

Invited Oral, *Engineering Biology Research Consortium 2022 Annual Meeting*, Berkeley, USA, 2022.
 Oral, *5th Asia-Pacific International Society for Microbial Electrochemistry and Technology*, Harbin, China, 2021.
 Oral, *1st Virtual International Society for Microbial Electrochemistry and Technology Meeting*, online, 2020.
 Oral, *7th International Society for Microbial Electrochemistry and Technology*, Okinawa, Japan, 2019.
 Poster, *Bioelectronics Gordon Research Conference*, Andover, USA, 2019.
 Poster and 90-second oral, *Synthetic Biology: Engineering, Evolution, and Design*, Scottsdale, USA, 2018.
 Oral, *Bioenergetics seminar*, Berkeley, USA, 2018.
 Oral, *Materials Research Society Meeting*, Boston, USA, 2017.
 Poster and 90-second oral, *Synthetic Biology: Engineering, Evolution, and Design*, Vancouver, USA, 2017.
 Oral, *Taiwan and Mainland Conference on Microbial fuel cells*, Taichung, Taiwan, China, 2015.

PUBLICATIONS

Representative ones:

1. **Su, L.** †, Rodríguez-Jiménez, S. †, Short, M. I. M. and Reisner, E. Adapting Gas Fermenting Bacteria for Light-driven Domino Valorization of CO₂. *Chemical Science*. (2025) **(Cover article) (†Contributed equally)** <https://doi.org/10.1039/D5SC00764J>
2. 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). **(†Contributed equally)** <https://doi.org/10.1038/s41586-022-05356-y>
3. **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>
4. 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>

Full publication (peer-reviewed) list:

Google Scholar profile: <https://scholar.google.com/citations?user=XBwfd50AAAAJ> (Citations = 1480, h-index = 16)

1. **Su, L.** †, Rodríguez-Jiménez, S. †, Short, M. I. M. and Reisner, E. Adapting Gas Fermenting Bacteria for Light-driven Domino Valorization of CO₂. *Chemical Science*. (2025) **(Cover article) (†Contributed equally)** <https://doi.org/10.1039/D5SC00764J>
2. Liu, Y., Rodríguez-Jiménez, S., Song, H., Pannwitz, A., Kim, D., Coito, A. M., Manuel, R. R., Webb, S., **Su, L.**, Bonke, S. A., Milton, R. D., Pereira, I. A. C., Bonnet, S., Hammarström, L. & Reisner, E. Bio-Inspired Self-Assembly of Enzyme-Micelle Systems for Semi-Artificial Photosynthesis. *Angew. Chem. Int. Ed.*, (2025). <https://doi.org/10.1002/anie.202424222>
3. Cobb, S.J., Pornrunroj, 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>
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). **(* Corresponding author)** <https://doi.org/10.1016/j.greenca.2024.05.001>
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). **(†Contributed equally)** <https://doi.org/10.1002/adfm.202302204>
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). **(†Contributed equally)** <https://doi.org/10.1038/s41586-022-05356-y>
7. Pichler, C. M. †, Bhattacharjee, S. †, Lam, E., **Su, L.**, Collauto, A., Roessler, M. M., Cobb, S. J., Badiani, V. M., Rahaman, M. & Reisner, E. Bio-Electrocatalytic Conversion of Food Waste to Ethylene via Succinic Acid as the Central Intermediate. *ACS Catal.* 12, 13360–13371 (2022). <https://doi.org/10.1021/acscatal.2c02689>

8. Campbell, I. J., Atkinson, J. T., Carpenter, M. D., Myerscough, D., **Su, L.**, Ajo-Franklin, C. M. & Silberg, J. J. Determinants of Multiheme Cytochrome Extracellular Electron Transfer Uncovered by Systematic Peptide Insertion. *Biochemistry* 61, 1337–1350 (2022).
<https://doi.org/10.1021/acs.biochem.2c00148>
9. Baruch, M., Tejedor-Sanz, S., **Su, L.** & Ajo-Franklin, C. M. Electronic control of redox reactions inside Escherichia coli using a genetic module. *PLoS ONE* 16, e0258380 (2021).
<https://doi.org/10.1371/journal.pone.0258380>
10. Bird, L. J., Kundu, B. B., Tschirhart, T., Corts, A. D., **Su, L.**, Gralnick, J. A., Ajo-Franklin, C. M. & Glaven, S. M. Engineering Wired Life: Synthetic Biology for Electroactive Bacteria. *ACS Synth. Biol.* 10, 2808–2823 (2021).
<https://doi.org/10.1021/acssynbio.1c00335>
11. **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>
12. **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) (†Contributed equally)**
<https://doi.org/10.1021/acssynbio.9b00379>
13. **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>
14. 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). **(†Contributed equally)**
<https://doi.org/10.7554/eLife.48054>
15. Yang, M., Zhong, Y., Zhang, B., Shi, J., Huang, X., Xing, Y., **Su, L.**, Liu, H. & Borthwick, A. G. L. Enhanced sulfide removal and bioelectricity generation in microbial fuel cells with anodes modified by vertically oriented nanosheets. *Environ. Technol.* 40, 1770–1779 (2019).
<https://doi.org/10.1080/09593330.2018.1429496>
16. Tian, T., Fan, X., Feng, M., **Su, L.**, Zhang, W., Chi, H. & Fu, D. Flavin-mediated extracellular electron transfer in Gram-positive bacteria Bacillus cereus DIF1 and Rhodococcus ruber DIF2. *RSC Adv.* 9, 40903–40909 (2019).
<https://doi.org/10.1039/C9RA08045G>
17. **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>
18. 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>
19. Yin, T., **Su, L.**, Li, H., Lin, X., Dong, L., Du, H. & Fu, D. Nitrogen doping of TiO₂ nanosheets greatly enhances bioelectricity generation of S. loihica PV-4. *Electrochimica Acta* 258, 1072–1080 (2017).
<https://doi.org/10.1016/j.electacta.2017.11.160>
20. Zhang, C., Cui, H., He, Z., **Su, L.** & Fu, D. Fractals in carbon nanotube buckypapers. *RSC Adv.* 6, 8639–8643 (2016). <https://doi.org/10.1039/C5RA23465D>
21. Yin, T., Li, H., **Su, L.**, Liu, S., Yuan, C. & Fu, D. The catalytic effect of TiO₂ nanosheets on extracellular electron transfer of Shewanella loihica PV-4. *Phys. Chem. Chem. Phys.* 18, 29871–29878 (2016).
<https://doi.org/10.1039/C6CP04509J>
22. Wang, L., **Su, L.**, Chen, H., Yin, T., Lin, Z., Lin, X., Yuan, C. & Fu, D. Carbon paper electrode modified by goethite nanowhiskers promotes bacterial extracellular electron transfer. *Mater. Lett.* 141, 311–314 (2015).
<https://doi.org/10.1016/j.matlet.2014.11.121>
23. **Su, L.**, Fan, X., Yin, T., Chen, H., Lin, X., Yuan, C. & Fu, D. Increasing power density and dye decolorization of an X-3B-fed microbial fuel cell via TiO₂ photocatalysis pretreatment. *RSC Adv.* 5, 83906–83913 (2015).
<https://doi.org/10.1039/C5RA16043J>
24. Yin, T., Lin, Z., **Su, L.**, Yuan, C. & Fu, D. Preparation of Vertically Oriented TiO₂ Nanosheets Modified Carbon Paper Electrode and Its Enhancement to the Performance of MFCs. *ACS Appl. Mater. Interfaces* 7, 400–408 (2015). <https://doi.org/10.1021/am506360x>
25. Ma, X., Shu, C., Guo, J., Pang, L., **Su, L.**, Fu, D. & Zhong, W. Targeted cancer therapy based on single-wall carbon nanohorns with doxorubicin in vitro and in vivo. *J. Nanoparticle Res.* 16, 2497 (2014).
<https://doi.org/10.1007/s11051-014-2497-9>