Haixing Li

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Education

Columbia University
Ph.D. in Applied Physics (Advisor: Latha Venkataraman) 2017
University of Science and Technology of China
B.S. in Physics (Advisor: Xianhui Chen) 2012

Professional Appointment

City University of Hong Kong, Department of Physics
Assistant Professor 2021-
Columbia University, Department of Chemistry
Charles H. Revson Senior Fellow in Biomedical Sciences (Advisor: Ruben L. Gonzalez, Jr.) 2019-2021
Postdoctoral Scholar 2017-2019
University of Oxford, Department of Physics
Undergraduate Student Researcher (Advisor: Brian J. Smith) 2011

Awards

Emerging Investigator by Chemical Communications 2024
Emerging Investigator by Journal of Materials Chemistry C 2022
ACS BIOL Division Travel Award, American Chemical Society 2021
Virtual Travel Award, The Biophysical Society 2021
Charles H. Revson Senior Postdoctoral Fellowship in Biomedical Science 2019
Chinese Government Award for Outstanding Students Abroad 4/2017
Ovshinsky Student Travel Award, American Physical Society 3/2017
Columbia Teaching Observation Fellowship 2016

Peer-reviewed Publications

† Contributed equally to this work. * Corresponding author.

25. Y. Cheng, J. Wang, Y. Shen*, **H. Li***, Protonation-Independent Charge Transport across Diphenylamine Single-Molecule Junctions, **J. Phys. Chem. Lett.** 2025, 16, 5, 1247-1252
24. W. Guo†, Y. Wu†, C. Xie, X. Tan, Z. Lu*, **H. Li***, Covalent Au-C contact formation and C-C homocoupling reaction from organotin compounds in single-molecule junctions, **J. Am. Chem. Soc.** 2024, 146, 39, 26687–26693
23. J. M. An†, X. Luo†, S. Naskar, D. Wu*, C. Herrmann, J. Xia*, **H. Li***, Acid-Mediated Modulation of the Conductance of Diazapentalene Molecular Junctions, **J. Phys. Chem. Lett.** 2024, 15, 35, 9037–9042
22. S. Han†, X. Liang†, I. Razdolski, Y. Bai, **H. Li***, D. Lei*, Optical and charge transport characteristics of photoswitching plasmonic molecular systems, **Prog. Quantum Electron.** 2024, 95, 100517
21. T. A. Su*, M. S. Inkpen*, **H. Li***, Themed Collection on Molecular Scale Electronics, **J. Mater. Chem. C.** 2024, 12, 7830-7832

20. W. Guo, T. Quainoo, Z. F. Liu, **H. Li***, Robust Binding between Secondary Amines and Au Electrodes, **Chem. Commun.** 2024, 60, 3393-3396
19. B. Wu, W. Guo, J.M. An, **H. Li***, Control of Molecular Conductance by pH, **J. Mater. Chem. C** 2022, 10, 13483-13498
18. H. Gamper†, **H. Li**†, I. Masuda, M. Szanti-Kis, T. Christian, A. B. Conn, G. Blaha, E. J. Petersson, R. L. Gonzalez, Jr, Y. M. Hou, Insights into Genome Recoding from the Mechanism of a Classic +1-Frameshift-Suppressor tRNA, **Nat. Commun.** 2021, 12, 1, 1-18
17. M. Garner†, **H. Li**†, M. Neupane†, Q. Zou, T. Liu, T. A. Su, Z. Shangguan, D. W. Paley, F. Ng, S. Xiao, C. Nuckolls, L. Venkataraman, G. C. Solomon, Permethylation Introduces Destructive Quantum Interference in Saturated Silanes, **J. Am. Chem. Soc.** 2019, 141, 39, 15471-15476
16. M. S. Inkpen, Z.-F. Liu, **H. Li**, L. Campos, J. B. Neaton, L. Venkataraman, Non-chemisorbed gold-sulfur binding prevails in self-assembled monolayers, **Nat. Chem.** 2019, 11, 4, 351-358
15. **H. Li**†, M. Garner†, Z. Shangguan†, Y. Chen, Q. Zheng, T. Su, M. Neupane, T. Liu, M. Steigerwald, F. Ng, C. Nuckolls, S. Xiao, G. Solomon, L. Venkataraman, Large Variations in Single Molecule Conductance of Cyclic and Bicyclic Silanes, **J. Am. Chem. Soc.** 2018, 140, 44, 15080-15088
14. M. H. Garner†, **H. Li**†, Y. Chen†, T. A. Su, Z. Shangguan, D. W. Paley, T. Liu, F. Ng, H. Li, S. Xiao, C. Nuckolls, L. Venkataraman, G. C. Solomon, Comprehensive Suppression of Single-Molecule Conductance using Destructive σ-interference, **Nature** 2018, 558, 415-419
13. **H. Li**†, T. A. Su†, M. Camarasa-Gómez†, D. Hernangómez-Pérez, S. E. Henn, V. Pokorný, R. Korytár, M. L. Steigerwald, C. Nuckolls, F. Evers, L. Venkataraman, Silver Makes Better Electrical Contacts to Thiol Terminated Silanes than Gold, **Angew. Chem. Int. Ed.** 2017, 56, 45, 14145-14148
12. **H. Li**†, M. Garner†, T. Su†, A. Jensen, M. Inkpen, M.L. Steigerwald, L. Venkataraman, G. Solomon, C. Nuckolls, Extreme Conductance Suppression in Molecular Siloxanes, **J. Am. Chem. Soc.** 2017, 139, 30, 10212-10215
11. T. Su, **H. Li**, R. Klausen, N. Kim, M. Neupane, J. Leighton, M. L. Steigerwald, L. Venkataraman, C. Nuckolls, Silane and Germane Molecular Electronics, **Acc. Chem. Res.** 2017, 50, 4, 1088-1095
10. **H. Li**, N. Kim, T. Su, M. L. Steigerwald, C. Nuckolls, P. Darancet, J. Leighton, L. Venkataraman, Mechanism for Si-Si Bond Rupture in Single Molecule Junctions, **J. Am. Chem. Soc.** 2016, 138, 49, 16159-16164
9. N. Kim, **H. Li**, L. Venkataraman, J. Leighton, High-Conductance Pathways in Ring-Strained Disilanes by Way of Direct σ-Si-Si to Au Coordination, **J. Am. Chem. Soc.** 2016, 138, 36, 11505-11508
8. T. Su†, **H. Li**†, R. Klausen, J. R. Widawsky, A. Batra, M. L. Steigerwald, L. Venkataraman, C. Nuckolls, Tuning Conductance in $\pi - \sigma - \pi$ Single-Molecule Wires, **J. Am. Chem. Soc.** 2016, 138, 24, 7791-7795
7. **H. Li**†, M. Garner†, Z. Shangguan†, T. Su, M. Neupane, P. Li, A. Velian, M. L. Steigerwald, S. Xiao, C. Nuckolls, G. Solomon, L. Venkataraman, Conformations of Cyclopentasilane Stereoisomers Control Molecular Junction Conductance, **Chem. Sci.** 2016, 7, 5657-5662
6. T. Su†, **H. Li**†, V. Zhang, M. Neupane, A. Batra, R. S. Klaussen, B. Kumar, M. L. Steigerwald, L. Venkataraman, C. Nuckolls, Single-Molecule Conductance in Atomically Precise Germanium Wires, **J. Am. Chem. Soc.** 2015, 137, 38, 12400-12405
5. **H. Li**, T. Su, V. Zhang, M. L. Steigerwald, C. Nuckolls, L. Venkataraman, Electric Field Breakdown in Single Molecule Junctions, **J. Am. Chem. Soc.** 2015, 137, 15, 5028-5033
4. T. Su, **H. Li**, M. L. Steigerwald, L. Venkataraman, C. Nuckolls, Stereoelectronic Switching in Single-Molecule Junctions, **Nat. Chem.** 2015, 7, 215-220
3. R. Klausen, J. Widawsky, T. Su, **H. Li**, M.L. Steigerwald, L. Venkataraman, C. Nuckolls, Evaluating Atomic Components in Fluorene Circuits, **Chem. Sci.** 2014, 5, 1561-1564
2. W. Chen, **H. Li**, J. R. Widawsky, C. Appayee, L. Venkataraman, R. Breslow, Aromaticity Decreases Single-Molecule Junction Conductance, **J. Am. Chem. Soc.** 2014, 136, 918-920
1. T. Su, J. Widawsky, **H. Li**, R. Klausen, J. Leighton, M. Steigerwald, L. Venkataraman, C. Nuckolls, Silicon Ring Strain Creates High-Conductance Pathways in Single-Molecule Circuits, **J. Am. Chem. Soc.** 2013, 135, 18331

Invited Talks

International conference on surface and interface science of the Chinese Chemical Society, Chengdu, Sichuan	5/2025
International conference on molecular electronics, Chongqing	4/2025
Molecular Electronic Symposium, ICCAS, Beijing	1/2024
Conference on molecular electronics in Inner Mongolia, Hohhot, Inner Mongolia	8/2023
International Seminar on Interdisciplinary Materials, Wuhan, Hubei	7/2023
College of Chemistry and Molecular Science, Wuhan University, Wuhan, Hubei	7/2023
School of Physics and Electronic Sciences, Shandong Normal University, Jinan, Shandong	6/2023
HK Tech Forum Quantum Physics and Complex Systems, CityU, Hong Kong	12/2022
Exotic Quantum Effects in Complex Materials, CityU, Hong Kong	6/2022
Annual Symposium, CityU, Department of Physics, Hong Kong	6/2022
The Revson Foundation Annual Meeting and Dinner, Virtual	5/2021
Peking University, Physics Seminar, Beijing	5/2016
Columbia University, Physical Chemistry Seminar, New York, NY	10/2015
Semiconductor Research Corporation Annual Review, Albany, NY	8/2015
Quantum Interference Workshop, Copenhagen,Denmark	7/2015

Contributed Presentations

Talk, American Chemical Society Spring Meeting, San Diego, CA	3/2025
Talk, The 33rd Chinese Chemical Society biennial meeting, Qingdao, Shandong	6/2023
Poster, American Chemical Society Fall Meeting, Atlanta, GA	8/2021
Talk, City University of New York (CUNY) - Columbia Biophysics Symposium, CUNY, New York, NY	6/2021
Talk, Platform session at the Biophysical Society 65th Annual Meeting, Virtual	2/2021
Talk, RNA club - an official RNA Salon of the RNA Society, Columbia University, New York, NY	10/2019
Talk, Protein Synthesis and Translational Control EMBO meeting, EMBL Heidelberg, Germany	9/2019
Poster, Single Molecule Approaches to Biology Gordon Research Conference, Mount Snow, VT	7/2018
Talk, American Physical Society March Meeting, New Orleans, LA	3/2017
Talk, Techcon, Austin, TX	9/2016
Poster, Conductivity & Magnetism in Molecular Materials Gordon Conference, Mount Holyoke, MA	8/2016
Poster, Women in Science at Columbia University Graduate Research Symposium, New York, NY	4/2016
Talk, American Physical Society March Meeting, Baltimore, MD	3/2016
Talk, Applied Physics and Applied Mathematics Seminar at Columbia University, New York, NY	2/2016
Poster, Frontiers of Condensed Matters Physics workshop, University of British Columbia, Canada	5/2015
Talk, Applied Physics and Applied Mathematics Seminar at Columbia University, New York, NY	4/2015
Talk, American Physical Society March Meeting, San Antonio, TX	3/2015

Teaching Experience

PHY8252 Statistical Mechanics, City University of Hong Kong	Fall 2025
PHY2213 Advanced Measurement and Instrumentation, City University of Hong Kong	Spring 2024, 2025, 2026
PHY6522 Advanced Imaging Physics, City University of Hong Kong	Spring 2023 - 2025
PHY1203 General Physics III, City University of Hong Kong	Spring 2023
PHY4283 Physics in Medicine, City University of Hong Kong	Fall 2022 - 2024
Biological & Biomedical Science, Yale Young Global Scholars, Yale University	Summer 2019
Applications of Biotechnologies (Guest Lecturer), Yeshiva University	Spring 2019
Nano: from Science to Technology (an enrichment program for high school students), Columbia University	2013-2019

Advising Experience

Current lab members

Ph.D. students: Jianming An (7/2022-), Weiyi Guo (9/2022-, best poster award in CityU PHY symposium in 2023 and 2024), Song Han (9/2023-), Yihao Zhang (9/2024-), Yaran Cheng (9/2024-), Xueling Xu (9/2024-).

Research Assistants: Yidong Xiao (10/2024-).

Alumni

Master students: Xueling Xu (9/2/23-6/2024), Yihao Zhang (9/2023-6/2024, best poster award in CityU PHY symposium in 2024).

Research Assistants: Xueling Xu (7/2023-8/2023 and 6/2024-8/2024), Yao Huo (2/2024-6/2024), Yaran Cheng (4/2024-8/2024), Yihao Zhang (6/2024-8/2024).

Undergraduate students: Hoi Kit Cheung (9/2022-5/2023), Ching Pong Chung (9/2022-5/2023), Zhao Zhang (9/2022-5/2023), Guangfu Ni (1/2023-5/2023), Mohammad Shaarib Ahamed (9/2024-5/2025)

Selected Service

University

Deputy Research Degree Coordinator (PhD degree), CityU Physics	2022-
Organizing Committee, PHY annual symposium, CityU	2023, 2025

Public

Juror, Hong Kong Young Physicists' Tournament, Island School, Hong Kong	2024
Judge, CityU Science Video Competition	2022

Professional

Guest editor for the Journal of Materials Chemistry C on themed collection of Molecular Scale Electronics	2023