



Bianxiao Cui

Job and Gertrud Tamaki Professor of Chemistry

CONTACT INFORMATION

- **Alternate Contact**

Nancy McCarthy - Administrative Assistant

Email nancylm@stanford.edu

Tel (650)736-8120

Bio

BIO

Dr. Bianxiao Cui is the Job and Gertrud Tamaki Professor of Chemistry and a fellow of the Wu Tsai Stanford Neuroscience Institute at Stanford University. She holds a Ph.D. degree in Chemistry from the University of Chicago and a BS degree from the University of Science and Technology of China. Dr. Cui develops new tools to study the nano-bio interface, membrane curvature, electrophysiology, and signal transduction in cells at normal and disease conditions. As a scientist and a teacher, she enjoys working with young scholars to explore the natural world with scientific innovations. Research in her group spans the disciplines of biophysics, cell biology, chemistry, material science, nanotechnology, and neurobiology. Her awards and distinctions include Ono Pharma Breakthrough Science Initiative award, Barany Award from the Biophysical Society, NIH New Innovator Award, NSF CAREER award, NSF Inspire award, Packard Fellowships in Science and Engineering, Hellman Scholar, Searle Scholar Award and Dreyfus New Faculty Award.

ACADEMIC APPOINTMENTS

- Professor, Chemistry
- Member, Bio-X
- Member, Cardiovascular Institute
- Faculty Fellow, Sarafan ChEM-H
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Affiliated Faculty and Scientific Leadership Council Member, Stanford Bio-X, (2014- present)

HONORS AND AWARDS

- Ono Pharma Breakthrough Science Initiative Award, Ono Pharma foundation (2022-2025)
- Blavatnik National Awards Finalist, Blavatnik Foundation (2018)
- Michael and Kate Barany Award, Biophysical Society (2018)
- NSF INSPIRE award, National Science Foundation (2013-2017)
- NIH New Innovator Award, National Institutes of Health (2012-2017)

- NSF CAREER award, National Science Foundation (2011-2016)
- Hellman Scholar, Hellman Foundation (2011)
- Packard Fellowships for Science and Engineering, David and Lucile Packard Foundation (2009-2014)
- Searle Scholar Award, Searle Scholars Program (2009-2012)
- Dreyfus New Faculty Award, Camille & Henry Dreyfus foundation (2008)
- Terman Fellowship, Stanford University (2008)
- NIH Pathway to Independence Career Award, National Institutes of Health (2006-2011)

PROFESSIONAL EDUCATION

- Postdoc, Stanford University Department of Physics , Biophysics (2008)
- Ph.D., University of Chicago , Physical Chemistry (2002)
- B.S., University of Science & Technology of China , Material Sci. & Eng. (1998)

LINKS

- The Cui Lab: <https://cuilab.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our objective is to develop new biophysical methods to advance current understandings of cellular machinery in the complicated environment of living cells. Creative applications of biophysical technologies such as crystallography, nuclear magnetic resonance and single-molecule fluorescence imaging have significantly advanced our understanding of biomolecular interactions and functions. However, traditional approaches that analyze purified biomolecules only yield insights that are removed from the cellular context. Our approach is to develop tools that precisely manipulate and measure biomolecular functions in live cells. Currently, we are focusing on four research areas: (1) Membrane curvature at the nano-bio interface; (2) Nanoelectrode arrays (NEAs) for scalable intracellular electrophysiology; (3) Electrochromic optical recording (ECORE) for neuroscience; and (4) Optical control of neurotrophin receptor tyrosine kinases.

<https://cuilab.stanford.edu/>

Teaching

COURSES

2023-24

- Biophysical Chemistry: CHEM 185 (Spr)
- Biophysical Chemistry: CHEM 285 (Spr)
- Chemical Principles II: CHEM 31B (Win)

2022-23

- Biophysical Chemistry: CHEM 185 (Spr)
- Biophysical Chemistry: CHEM 285 (Spr)
- Chemical Principles II: CHEM 31B (Win)

2021-22

- Biophysical Chemistry: CHEM 185 (Spr)

2020-21

- Advanced Physical Chemistry: CHEM 273 (Win)
- Biophysical Chemistry: CHEM 185 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Julisia Chau, Yaereen Dho, Yi-Shiou Duh, Mark Fleck, Dashiell Grusky, Zixuan Jiang, Sarah Jones, Till Kallem, Sherry Li, Ashley Saunders, Khoi Tran

Postdoctoral Faculty Sponsor

Csaba Forro, Ching-Ting Tsai, He You, Yuecheng Peter Zhou

Doctoral Dissertation Advisor (AC)

Christina Lee, Erica Liu, Chih-Hao Lu, Pengwei Sun, Luis Valencia, Xing-Yuan Zhang

Postdoctoral Research Mentor

Lin Liu, Xiao Yang

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)

Publications

PUBLICATIONS

- **A NanoCurvS platform for quantitative and multiplex analysis of curvature-sensing proteins.** *Biomaterials science*
Lu, C. H., Tsai, C. T., Jones Iv, T., Chim, V., Klausen, L. H., Zhang, W., Li, X., Jahed, Z., Cui, B.
2023
- **A NanoCurvS platform for quantitative and multiplex analysis of curvature-sensing proteins** *Biomaterials Science*
Lu, C., et al
2023
- **Quantitative phase contrast imaging with a nonlocal angle-selective metasurface.** *Nature communications*
Ji, A., Song, J. H., Li, Q., Xu, F., Tsai, C. T., Tiberio, R. C., Cui, B., Lalanne, P., Kik, P. G., Miller, D. A., Brongersma, M. L.
2022; 13 (1): 7848
- **Dual-Color Optical Recording of Bioelectric Potentials by Polymer Electrochromism.** *Journal of the American Chemical Society*
Zhou, Y., Liu, E., Yang, Y., Alfonso, F. S., Ahmed, B., Nakasone, K., Forro, C., Muller, H., Cui, B.
2022
- **Stretchable mesh microelectronics for the biointegration and stimulation of human neural organoids.** *Biomaterials*
Li, T. L., Liu, Y., Forro, C., Yang, X., Beker, L., Bao, Z., Cui, B., Pa#ca, S. P.
2022; 290: 121825
- **Maturation and circuit integration of transplanted human cortical organoids.** *Nature*
Revah, O., Gore, F., Kelley, K. W., Andersen, J., Sakai, N., Chen, X., Li, M. Y., Birey, F., Yang, X., Saw, N. L., Baker, S. W., Amin, N. D., Kulkarni, et al
2022; 610 (7931): 319-326
- **Cardiotoxicity drug screening based on whole-panel intracellular recording.** *Biosensors & bioelectronics*
Yang, Y., Liu, A., Tsai, C., Liu, C., Wu, J. C., Cui, B.
2022; 216: 114617
- **A tissue-like neurotransmitter sensor for the brain and gut.** *Nature*
Li, J., Liu, Y., Yuan, L., Zhang, B., Bishop, E. S., Wang, K., Tang, J., Zheng, Y., Xu, W., Niu, S., Beker, L., Li, T. L., Chen, et al
2022; 606 (7912): 94-101
- **Expansion Microscopy for Imaging the Cell-Material Interface.** *ACS nano*

- Nakamoto, M. L., Forro, C., Zhang, W., Tsai, C., Cui, B.
2022
- **Nanocrown electrodes for parallel and robust intracellular recording of cardiomyocytes.** *Nature communications*
Jahed, Z., Yang, Y., Tsai, C., Foster, E. P., McGuire, A. F., Yang, H., Liu, A., Forro, C., Yan, Z., Jiang, X., Zhao, M., Zhang, W., Li, et al
2022; 13 (1): 2253
 - **Pericyte-to-endothelial cell signaling via vitronectin-integrin regulates blood-CNS barrier.** *Neuron*
Ayloo, S., Lazo, C. G., Sun, S., Zhang, W., Cui, B., Gu, C.
2022
 - **Membrane curvature regulates the spatial distribution of bulky glycoproteins** *NATURE COMMUNICATIONS*
Lu, C., Pedram, K., Tsai, C., Jones IV, T., Li, X., Nakamoto, M. L., Bertozzi, C. R., Cui, B.
2022; 13
 - **Nanotechnology Enables Novel Modalities for Neuromodulation.** *Advanced materials (Deerfield Beach, Fla.)*
Yang, X., McGlynn, E., Das, R., Pasca, S. P., Cui, B., Heidari, H.
2021: e2103208
 - **Advancing models of neural development with biomaterials.** *Nature reviews. Neuroscience*
Roth, J. G., Huang, M. S., Li, T. L., Feig, V. R., Jiang, Y., Cui, B., Greely, H. T., Bao, Z., Pasca, S. P., Heilshorn, S. C.
2021
 - **Nanoscale Surface Topography Reduces Focal Adhesions and Cell Stiffness by Enhancing Integrin Endocytosis.** *Nano letters*
Li, X., Klausen, L. H., Zhang, W., Jahed, Z., Tsai, C., Li, T. L., Cui, B.
2021
 - **Light-inducible deformation of mitochondria in live cells.** *Cell chemical biology*
Song, Y., Huang, P., Liu, X., Zhao, Z., Wang, Y., Cui, B., Duan, L.
2021
 - **New perspectives on the roles of nanoscale surface topography in modulating intracellular signaling.** *Current opinion in solid state & materials science*
Zhang, W., Yang, Y., Cui, B.
2021; 25 (1)
 - **Optical Electrophysiology: Toward the Goal of Label-Free Voltage Imaging.** *Journal of the American Chemical Society*
Zhou, Y., Liu, E., Müller, H., Cui, B.
2021
 - **Graphene Electric Field Sensor Enables Single Shot Label-Free Imaging of Bioelectric Potentials.** *Nano letters*
Balch, H. B., McGuire, A. F., Horng, J., Tsai, H. Z., Qi, K. K., Duh, Y. S., Forrester, P. R., Crommie, M. F., Cui, B., Wang, F.
2021
 - **Exploring Cell Surface-Nanopillar Interactions with 3D Super-Resolution Microscopy.** *ACS nano*
Roy, A. R., Zhang, W., Jahed, Z., Tsai, C. T., Cui, B., Moerner, W. E.
2021
 - **Towards biomimetic electronics that emulate cells** *MRS COMMUNICATIONS*
Lubrano, C., Matrone, G., Forro, C., Jahed, Z., Offenhaeusser, A., Salleo, A., Cui, B., Santoro, F.
2020; 10 (3): 398–412
 - **A hierarchically ordered compacted coil scaffold for tissue regeneration** *NPG ASIA MATERIALS*
Su, Y., Zhang, Z., Wan, Y., Zhang, Y., Wang, Z., Klausen, L., Huang, P., Dong, M., Han, X., Cui, B., Chen, M.
2020; 12 (1)
 - **Nanobar Array Assay Revealed Complementary Roles of BIN1 Splice Isoforms in Cardiac T-Tubule Morphogenesis.** *Nano letters*
Li, L., Guo, Q., Lou, H., Liang, J., Yang, Y., Xing, X., Li, H., Han, J., Shen, S., Li, H., Ye, H., Di Wu, H., Cui, et al
2020
 - **NOTCH1 is Essential for Ventricular Cardiomyocyte Differentiation of Human Induced Pluripotent Stem Cells**
Zhao, M., Ye, S., Zhang, J., Shao, N., Liu, C., Zhou, Y., Nishiga, M., Yang, Y., Cui, B., Garg, V., Wu, J. C.

LIPPINCOTT WILLIAMS & WILKINS.2020

- **Production and Isolation of Magnetic Protein Crystals in HEK293T Cells.** *Bio-protocol*
Li, T. L., Cui, B.
2020; 10 (14): e3684
- **Production and Isolation of Magnetic Protein Crystals in HEK293T Cells** *BIO-PROTOCOL*
Li, T. L., Cui, B.
2020; 10 (14)
- **Label-free optical detection of bioelectric potentials using electrochromic thin films.** *Proceedings of the National Academy of Sciences of the United States of America*
Alfonso, F. S., Zhou, Y., Liu, E., McGuire, A. F., Yang, Y., Kantarci, H., Li, D., Copenhaver, E., Zuchero, J. B., Muller, H., Cui, B.
2020
- **Optical Activation of TrkB Signaling.** *Journal of molecular biology*
Huang, P., Liu, A., Song, Y., Hope, J. M., Cui, B., Duan, L.
2020
- **Construction of Light-Activated Neurotrophin Receptors Using the Improved Light-Induced Dimerizer (iLID).** *Journal of molecular biology*
Hope, J. M., Liu, A., Calvin, G. J., Cui, B.
2020
- **Light-Inducible Generation of Membrane Curvature in Live Cells with Engineered BAR Domain Proteins.** *ACS synthetic biology*
Jones, T. n., Liu, A. n., Cui, B. n.
2020
- **Dynamic Manipulation of Cell Membrane Curvature by Light-Driven Reshaping of Azopolymer.** *Nano letters*
De Martino, S., Zhang, W., Klausen, L., Lou, H., Li, X., Alfonso, F. S., Cavalli, S., Netti, P. A., Santoro, F., Cui, B.
2019
- **Engineering a Genetically Encoded Magnetic Protein Crystal.** *Nano letters*
Li, T. L., Wang, Z., You, H., Ong, Q., Varanasi, V. J., Dong, M., Lu, B., Pasca, S. P., Cui, B.
2019
- **A nanostructure platform for live-cell manipulation of membrane curvature.** *Nature protocols*
Li, X., Martino, L., Zhang, W., Klausen, L., McGuire, A. F., Lubrano, C., Zhao, W., Santoro, F., Cui, B.
2019
- **Electron Microscopy for 3D Scaffolds-Cell Biointerface Characterization** *ADVANCED BIOSYSTEMS*
Iandolo, D., Pennacchio, F. A., Mollo, V., Rossi, D., Dannhauser, D., Cui, B., Owens, R. M., Santoro, F.
2019; 3 (2)
- **Electron Microscopy for 3D Scaffolds-Cell Biointerface Characterization.** *Advanced biosystems*
Iandolo, D., Pennacchio, F. A., Mollo, V., Rossi, D., Dannhauser, D., Cui, B., Owens, R. M., Santoro, F.
2019; 3 (2): e1800103
- **Membrane curvature underlies actin reorganization in response to nanoscale surface topography.** *Proceedings of the National Academy of Sciences of the United States of America*
Lou, H. Y., Zhao, W. n., Li, X. n., Duan, L. n., Powers, A. n., Akamatsu, M. n., Santoro, F. n., McGuire, A. F., Cui, Y. n., Drubin, D. G., Cui, B. n.
2019
- **Soft conductive micropillar electrode arrays for biologically relevant electrophysiological recording** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Liu, Y., McGuire, A. F., Lou, H., Li, T. L., Tok, J. H., Cui, B., Bao, Z.
2018; 115 (46): 11718–23
- **Cells Adhering to 3D Vertical Nanostructures: Cell Membrane Reshaping without Stable Internalization** *NANO LETTERS*
Dipalo, M., McGuire, A. F., Lou, H., Caprettini, V., Melle, G., Bruno, G., Lubrano, C., Martino, L., Li, X., De Angelis, F., Cui, B., Santoro, F.
2018; 18 (9): 6100–6105

- **The ambipolar transport behavior of WSe₂ transistors and its analogue circuits** *NPG ASIA MATERIALS*
Wang, Z., Li, Q., Chen, Y., Cui, B., Li, Y., Besenbacher, F., Dong, M.
2018; 10: 703–12
- **Optical Activation of TrkA Signaling.** *ACS synthetic biology*
Duan, L., Hope, J. M., Guo, S., Ong, Q., Francois, A., Kaplan, L., Scherrer, G., Cui, B.
2018
- **Dynamic Clustering of Dyneins on Axonal Endosomes: Evidence from High-Speed Darkfield Imaging.** *Biophysical journal*
Chowdary, P. D., Kaplan, L., Che, D. L., Cui, B.
2018
- **Constructing Highly Uniform Onion-Ring-like Graphitic Carbon Nitride for Efficient Visible-Light-Driven Photocatalytic Hydrogen Evolution** *ACS NANO*
Cui, L., Song, J., McGuire, A. F., Kang, S., Fang, X., Wang, J., Yin, C., Li, X., Wang, Y., Cui, B.
2018; 12 (6): 5551–58
- **The Role of Membrane Curvature in Nanoscale Topography-Induced Intracellular Signaling** *ACCOUNTS OF CHEMICAL RESEARCH*
Lou, H., Zhao, W., Zeng, Y., Cui, B.
2018; 51 (5): 1046–53
- **Swedish Nerve Growth Factor Mutation (NGF(R100W)) Defines a Role for TrkA and p75(NTR) in Nociception** *JOURNAL OF NEUROSCIENCE*
Sung, K., Ferrari, L. F., Yang, W., Chung, C., Zhao, X., Gu, Y., Lin, S., Zhang, K., Cui, B., Pearn, M. L., Maloney, M. T., Mobley, W. C., Levine, et al
2018; 38 (14): 3394–3413
- **Interfacing Cells with Vertical Nanoscale Devices: Applications and Characterization.** *Annual review of analytical chemistry (Palo Alto, Calif.)*
McGuire, A. F., Santoro, F. n., Cui, B. n.
2018
- **Neurospheres on Patterned PEDOT:PSS Microelectrode Arrays Enhance Electrophysiology Recordings** *ADVANCED BIOSYSTEMS*
Pas, J., Pitsalidis, C., Koutsouras, D. A., Quilichini, P. P., Santoro, F., Cui, B., Gallais, L., O'Connor, R. P., Malliaras, G. G., Owens, R. M.
2018; 2 (1)
- **Rotation of endosomes demonstrates coordination of molecular motors during axonal transport.** *Science advances*
Kaplan, L. n., Ierokomos, A. n., Chowdary, P. n., Bryant, Z. n., Cui, B. n.
2018; 4 (3): e1602170
- **Visible-Light Neural Stimulation on Graphitic-Carbon Nitride/Graphene Photocatalytic Fibers.** *ACS applied materials & interfaces*
Zhang, Z., Xu, R., Wang, Z., Dong, M., Cui, B., Chen, M.
2017; 9 (40): 34736–34743
- **Understanding CRY2 interactions for optical control of intracellular signaling** *NATURE COMMUNICATIONS*
Duan, L., Hope, J., Ong, Q., Lou, H., Kim, N., McCarthy, C., Acero, V., Lin, M. Z., Cui, B.
2017; 8: 547
- **Nanoscale manipulation of membrane curvature for probing endocytosis in live cells.** *Nature nanotechnology*
Zhao, W., Hanson, L., Lou, H., Akamatsu, M., Chowdary, P. D., Santoro, F., Marks, J. R., Grassart, A., Drubin, D. G., Cui, Y., Cui, B.
2017
- **Accurate nanoelectrode recording of human pluripotent stem cell-derived cardiomyocytes for assaying drugs and modeling disease.** *Microsystems & nanoengineering*
Lin, Z. C., McGuire, A. F., Burridge, P. W., Matsa, E., Lou, H. Y., Wu, J. C., Cui, B.
2017; 3: 16080
- **Control of cerebral ischemia with magnetic nanoparticles.** *Nature methods*
Jia, J., Chowdary, P. D., Gao, X., Ci, B., Li, W., Mulgaonkar, A., Plautz, E. J., Hassan, G., Kumar, A., Stowe, A. M., Yang, S., Zhou, W., Sun, et al
2017; 14 (2): 160–166
- **Dual-Functional Lipid Coating for the Nanopillar-Based Capture of Circulating Tumor Cells with High Purity and Efficiency** *LANGMUIR*
Lou, H., Zhao, W., Hanson, L., Zeng, C., Cui, Y., Cui, B.

2017; 33 (4): 1097-1104

- **Intracellular TG2 Activity Increases Microtubule Stability but is not Sufficient to Prompt Neurite Growth.** *Neuroscience bulletin*
Guo, S. n., Palanski, B. A., Kloeck, C. n., Khosla, C. n., Cui, B. n.
2017; 33 (1): 103–6
- **Imaging electric field dynamics with graphene optoelectronics** *NATURE COMMUNICATIONS*
Horng, J., Balch, H. B., McGuire, A. F., Tsai, H., Forrester, P. R., Crommie, M. F., Cui, B., Wang, F.
2016; 7
- **The Timing of Raf/ERK and AKT Activation in Protecting PC12 Cells against Oxidative Stress** *PLOS ONE*
Ong, Q., Guo, S., Duan, L., Zhang, K., Collier, E. A., Cui, B.
2016; 11 (4)
- **A close look at axonal transport: Cargos slow down when crossing stationary organelles** *NEUROSCIENCE LETTERS*
Che, D. L., Chowdary, P. D., Cui, B.
2016; 610: 110-116
- **A close look at axonal transport: Cargos slow down when crossing stationary organelles.** *Neuroscience letters*
Che, D. L., Chowdary, P. D., Cui, B.
2016; 610: 110-6
- **Nanoparticle-assisted optical tethering of endosomes reveals the cooperative function of dyneins in retrograde axonal transport** *SCIENTIFIC REPORTS*
Chowdary, P. D., Che, D. L., Kaplan, L., Chen, O., Pu, K., Bawendi, M., Cui, B.
2015; 5
- **A skin-inspired organic digital mechanoreceptor** *SCIENCE*
Tee, B. C., Chortos, A., Berndt, A., Nguyen, A. K., Tom, A., McGuire, A., Lin, Z. C., Tien, K., Bae, W., Wang, H., Mei, P., Chou, H., Cui, et al
2015; 350 (6258): 313-?
- **The Dual Characteristics of Light-Induced Cryptochrome 2, Homo-oligomerization and Heterodimerization, for Optogenetic Manipulation in Mammalian Cells.** *ACS synthetic biology*
Che, D. L., Duan, L., Zhang, K., Cui, B.
2015; 4 (10): 1124-1135
- **Activity-dependent BDNF release via endocytic pathways is regulated by synaptotagmin-6 and complexin.** *Proceedings of the National Academy of Sciences of the United States of America*
Wong, Y., Lee, C., Xie, W., Cui, B., Poo, M.
2015; 112 (32): E4475-84
- **Efficient Radioisotope Energy Transfer by Gold Nanoclusters for Molecular Imaging** *SMALL*
Volotskova, O., Sun, C., Stafford, J. H., Koh, A. L., Ma, X., Cheng, Z., Cui, B., Pratz, G., Xing, L.
2015; 11 (32): 4002-4008
- **Retrograde NGF Axonal Transport-Motor Coordination in the Unidirectional Motility Regime** *BIOPHYSICAL JOURNAL*
Chowdary, P. D., Che, D. L., Zhang, K., Cui, B.
2015; 108 (11): 2691-2703
- **Nanotechnology and neurophysiology** *CURRENT OPINION IN NEUROBIOLOGY*
Angle, M. R., Cui, B., Melosh, N. A.
2015; 32: 132-140
- **Vertical nanopillars for in situ probing of nuclear mechanics in adherent cells.** *Nature nanotechnology*
Hanson, L., Zhao, W., Lou, H., Lin, Z. C., Lee, S. W., Chowdary, P., Cui, Y., Cui, B.
2015; 10 (6): 554-562
- **Optogenetic Control of Molecular Motors and Organelle Distributions in Cells** *CHEMISTRY & BIOLOGY*
Duan, L., Che, D., Zhang, K., Ong, Q., Guo, S., Cui, B.
2015; 22 (5): 671-682
- **Efficient Radioisotope Energy Transfer by Gold Nanoclusters for Molecular Imaging.** *Small (Weinheim an der Bergstrasse, Germany)*

Volotskova, O., Sun, C., Stafford, J. H., Koh, A. L., Ma, X., Cheng, Z., Cui, B., Pratz, G., Xing, L.
2015

- **Optogenetic control of intracellular signaling pathways** *TRENDS IN BIOTECHNOLOGY*
Zhang, K., Cui, B.
2015; 33 (2): 92-100
- **U0126 Protects Cells against Oxidative Stress Independent of Its Function as a MEK Inhibitor** *ACS CHEMICAL NEUROSCIENCE*
Ong, Q., Guo, S., Zhang, K., Cui, B.
2015; 6 (1): 130-137
- **Enhancing the nanomaterial bio-interface by addition of mesoscale secondary features: crinkling of carbon nanotube films to create subcellular ridges.** *ACS nano*
Xie, X., Zhao, W., Lee, H. R., Liu, C., Ye, M., Xie, W., Cui, B., Criddle, C. S., Cui, Y.
2014; 8 (12): 11958-11965
- **Chemically defined generation of human cardiomyocytes.** *Nature methods*
Burridge, P. W., Matsa, E., Shukla, P., Lin, Z. C., Churko, J. M., Ebert, A. D., Lan, F., Diecke, S., Huber, B., Mordwinkin, N. M., Plews, J. R., Abilez, O. J., Cui, et al
2014; 11 (8): 855-860
- **Lighting up FGFR signaling.** *Chemistry & biology*
Zhang, K., Cui, B.
2014; 21 (7): 806-808
- **Divergence of the long-wavelength collective diffusion coefficient in quasi-one- and quasi-two-dimensional colloidal suspensions** *PHYSICAL REVIEW E*
Lin, B., Cui, B., Xu, X., Zangi, R., Diamant, H., Rice, S. A.
2014; 89 (2)
- **Iridium oxide nanotube electrodes for sensitive and prolonged intracellular measurement of action potentials.** *Nature communications*
Lin, Z. C., Xie, C., Osakada, Y., Cui, Y., Cui, B.
2014; 5: 3206-?
- **NANOWIRE TRANSISTORS Room for manoeuvre** *NATURE NANOTECHNOLOGY*
Lin, Z. C., Cui, B.
2014; 9 (2): 94-96
- **Iridium oxide nanotube electrodes for sensitive and prolonged intracellular measurement of action potentials.** *Nature communications*
Lin, Z. C., Xie, C., Osakada, Y., Cui, Y., Cui, B.
2014; 5: 3206-?
- **Light-Mediated Kinetic Control Reveals the Temporal Effect of the Raf/MEK/ERK Pathway in PC12 Cell Neurite Outgrowth.** *PloS one*
Zhang, K., Duan, L., Ong, Q., Lin, Z., Varman, P. M., Sung, K., Cui, B.
2014; 9 (3)
- **Hard X-ray-induced optical luminescence via biomolecule-directed metal clusters** *CHEMICAL COMMUNICATIONS*
Osakada, Y., Pratz, G., Sun, C., Sakamoto, M., Ahmad, M., Volotskova, O., Ong, Q., Teranishi, T., Harada, Y., Xing, L., Cui, B.
2014; 50 (27): 3549-3551
- **Light-mediated kinetic control reveals the temporal effect of the Raf/MEK/ERK pathway in PC12 cell neurite outgrowth.** *PloS one*
Zhang, K., Duan, L., Ong, Q., Lin, Z., Varman, P. M., Sung, K., Cui, B.
2014; 9 (3)
- **X-ray excitable luminescent polymer dots doped with an iridium(iii) complex.** *Chemical communications*
Osakada, Y., Pratz, G., Hanson, L., Solomon, P. E., Xing, L., Cui, B.
2013; 49 (39): 4319-4321
- **Defective Axonal Transport of Rab7 GTPase Results in Dysregulated Trophic Signaling** *JOURNAL OF NEUROSCIENCE*
Zhang, K., Ben Kenan, R. F., Osakada, Y., Xu, W., Sinit, R. S., Chen, L., Zhao, X., Chen, J., Cui, B., Wu, C.
2013; 33 (17): 7451-7462

- **Light-Controlled Mitogen-Activated Protein Kinase (MAPK) Signaling Pathway in Live Cells** *57th Annual Meeting of the Biophysical-Society*
Zhang, K., Duan, L., Lin, Z., Sung, K., Osakada, Y., Cui, B.
CELL PRESS.2013: 679A-679A
- **Accelerating the Development of Hippocampal Neurons using Nanopillar Structures** *57th Annual Meeting of the Biophysical-Society*
Zhao, W., Zhang, K., Xie, W., Hanson, L., Lin, Z., Cui, Y., Cui, B.
CELL PRESS.2013: 675A-675A
- **Probing the Mechanical Coupling of the Cell Membrane to the Nucleus with Vertical Nanopillar Arrays** *57th Annual Meeting of the Biophysical-Society*
Hanson, L., Urzay, J., Lin, Z., Zhao, W., Prakash, M., Cui, B.
CELL PRESS.2013: 546A-546A
- **Characterization of the Cell-Nanopillar Interface by Transmission Electron Microscopy** *NANO LETTERS*
Hanson, L., Lin, Z. C., Xie, C., Cui, Y., Cui, B.
2012; 12 (11): 5815-5820
- **Intracellular recording of action potentials by nanopillar electroporation** *NATURE NANOTECHNOLOGY*
Xie, C., Lin, Z., Hanson, L., Cui, Y., Cui, B.
2012; 7 (3): 185-190
- **Neurotrophin Signaling via Long-Distance Axonal Transport** *ANNUAL REVIEW OF PHYSICAL CHEMISTRY, VOL 63*
Chowdary, P. D., Che, D. L., Cui, B.
2012; 63: 571-594
- **Functional characterization and axonal transport of quantum dot labeled BDNF** *INTEGRATIVE BIOLOGY*
Xie, W., Zhang, K., Cui, B.
2012; 4 (8): 953-960
- **Diarylethene doped biocompatible polymer dots for fluorescence switching** *CHEMICAL COMMUNICATIONS*
Osakada, Y., Hanson, L., Cui, B.
2012; 48 (27): 3285-3287
- **Automated Image Analysis for Tracking Cargo Transport in Axons** *MICROSCOPY RESEARCH AND TECHNIQUE*
Zhang, K., Osakada, Y., Xie, W., Cui, B.
2011; 74 (7): 605-613
- **A Microfluidic Positioning Chamber for Long-Term Live-Cell Imaging** *MICROSCOPY RESEARCH AND TECHNIQUE*
Hanson, L., Cui, L., Xie, C., Cui, B.
2011; 74 (6): 496-501
- **Vertical nanopillars for highly localized fluorescence imaging** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Xie, C., Hanson, L., Cui, Y., Cui, B.
2011; 108 (10): 3894-3899
- **Vertical Nanopillars For Highly-Localized Fluorescence Imaging in Live Cells** *55th Annual Meeting of the Biophysical-Society*
Cui, B., Xie, C., Hanson, L., Ziliang, C.
CELL PRESS.2011: 188-89
- **Real-time visualization of axonal transport in neurons.** *Methods in molecular biology (Clifton, N.J.)*
Osakada, Y., Cui, B.
2011; 670: 231-243
- **Tau Reduction Prevents A beta-Induced Defects in Axonal Transport** *SCIENCE*
Vossel, K. A., Zhang, K., Brodbeck, J., Daub, A. C., Sharma, P., Finkbeiner, S., Cui, B., Mucke, L.
2010; 330 (6001): 198-U52
- **Noninvasive Neuron Pinning with Nanopillar Arrays** *NANO LETTERS*
Xie, C., Hanson, L., Xie, W., Lin, Z., Cui, B., Cui, Y.
2010; 10 (10): 4020-4024

- **Hydrodynamic interactions in ribbon channels: From quasi-one-dimensional to quasi-two-dimensional behavior** *PHYSICAL REVIEW E*
Novikov, S., Rice, S. A., Cui, B., Diamant, H., Lin, B.
2010; 82 (3)
- **Spreading of colloid clusters in a quasi-one-dimensional channel** *JOURNAL OF CHEMICAL PHYSICS*
Xu, X., Lin, B., Cui, B., Dinner, A. R., Rice, S. A.
2010; 132 (8)
- **Single-molecule imaging of NGF axonal transport in microfluidic devices** *LAB ON A CHIP*
Zhang, K., Osakada, Y., Vrljic, M., Chen, L., Mudrakola, H. V., Cui, B.
2010; 10 (19): 2566-2573
- **Optically Resolving Individual Microtubules in Live Axons** *STRUCTURE*
Mudrakola, H. V., Zhang, K., Cui, B.
2009; 17 (11): 1433-1441
- **The Quasi-One-Dimensional Colloid Fluid Revisited** *JOURNAL OF PHYSICAL CHEMISTRY B*
Lin, B., Valley, D., Meron, M., Cui, B., Ho, H. M., Rice, S. A.
2009; 113 (42): 13742-13751
- **Structure of quasi-one-dimensional ribbon colloid suspensions** *PHYSICAL REVIEW E*
Stratton, T. R., Novikov, S., Qato, R., Villarreal, S., Cui, B., Rice, S. A., Lin, B.
2009; 79 (3)
- **The coming of age of axonal neurotrophin signaling endosomes** *JOURNAL OF PROTEOMICS*
Wu, C., Cui, B., He, L., Chen, L., Mobley, W. C.
2009; 72 (1): 46-55
- **Pair diffusion in quasi-one- and quasi-two-dimensional binary colloid suspensions** *JOURNAL OF CHEMICAL PHYSICS*
Valley, D. T., Rice, S. A., Cui, B., Ho, H. M., Diamant, H., Lin, B.
2007; 126 (13)
- **Correlated particle dynamics in concentrated quasi-two-dimensional suspensions** *JOURNAL OF PHYSICS-CONDENSED MATTER*
Diamant, H., Cui, B., Lin, B., Rice, S. A.
2005; 17 (49): S4047-S4058
- **Hydrodynamic interaction in quasi-two-dimensional suspensions** *International Workshop on Physics of Soft Matter Complexes*
Diamant, H., Cui, B., Lin, B., Diamant', H.
IOP PUBLISHING LTD.2005: S2787-S2793
- **Anomalous behavior of the depletion potential in quasi-two-dimensional binary mixtures** *PHYSICAL REVIEW E*
Cui, B., Lin, B., Frydel, D., Rice, S. A.
2005; 72 (2)
- **From random walk to single-file diffusion** *PHYSICAL REVIEW LETTERS*
Lin, B. H., Meron, M., Cui, B. X., Rice, S. A., Diamant, H.
2005; 94 (21)
- **Neuronal network in a microfluidic device** *49th Annual Meeting of the Biophysical-Society*
Cui, B. X., Wu, C. B., Mobley, W., Chu, S.
CELL PRESS.2005: 519A-520A
- **Anomalous hydrodynamic interaction in a quasi-two-dimensional suspension** *PHYSICAL REVIEW LETTERS*
Cui, B. X., Diamant, H., Lin, B. H., Rice, S. A.
2004; 92 (25)
- **Structure and phase transitions in confined binary colloid mixtures** *JOURNAL OF CHEMICAL PHYSICS*
Cui, B., Lin, B., Rice, S. A.
2003; 119 (4): 2386-2398

- **Screened hydrodynamic interaction in a narrow channel** *PHYSICAL REVIEW LETTERS*
Cui, B. X., Diamant, H., Lin, B. H.
2002; 89 (18)
- **Hydrodynamic coupling in diffusion of quasi-one-dimensional Brownian particles** *EUROPHYSICS LETTERS*
Lin, B. H., Cui, B. X., Lee, J. H., Yu, J.
2002; 57 (5): 724-730
- **Equilibrium structure and effective pair interaction in a quasi-one-dimensional colloid liquid** *JOURNAL OF CHEMICAL PHYSICS*
Cui, B. X., Lin, B. H., Sharma, S., Rice, S. A.
2002; 116 (7): 3119-3127
- **Dynamical heterogeneity in a dense quasi-two-dimensional colloidal liquid** *JOURNAL OF CHEMICAL PHYSICS*
Cui, B. X., Lin, B. H., Rice, S. A.
2001; 114 (20): 9142-9155

PRESENTATIONS

- CellPress Webinar: New Probes and Sensors in Neurobiology - CellPress (2015)