Stanford

Yi Cui

Fortinet Founders Professor, Professor of Materials Science and Engineering, of Energy Science and Engineering, of Photon Science, Senior Fellow at Woods, at Precourt and Professor, by courtesy, of Chemistry

CONTACT INFORMATION

- **Sustainability Accelerator**

  Gabby Magana - Executive Assistant to Yi Cui

  Email gmagana@stanford.edu

Bio

BIO

Cui studies fundamentals and applications of nanomaterials and develops tools for their understanding. Research Interests: nanotechnology, batteries, electrocatalysis, wearables, 2D materials, environmental technology (water, air, soil), cryogenic electron microscopy.

ACADEMIC APPOINTMENTS

- Professor, Materials Science and Engineering
- Professor, Energy Science & Engineering
- Senior Fellow, Stanford Woods Institute for the Environment
- Senior Fellow, Precourt Institute for Energy
- Professor, Photon Science Directorate
- Professor (By courtesy), Chemistry
- Member, Bio-X
- Affiliate, Precourt Institute for Energy
- Principal Investigator, Stanford Institute for Materials and Energy Sciences
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Co-Director, Bay Area Photovoltaic Consortium, (2011-2018)
- Co-Director, Battery500 Consortium, (2016- present)
- Co-Director, Stanford StorageX Initiative, (2019- present)

HONORS AND AWARDS

- Battery Research Award, International Automotive Lithium Battery Association (2019)
- ECS Battery Technology Award, Electrochemical Society (2019)
- Nano Today Award, Nano Today Journal (2019)
- Inaugural Dan Maydan Prize for Nanoscience, The Hebrew University of Jerusalem (2019)

- ECS Fellow, Electrochemical Society (2018)
- Senior Fellow of Precourt Institute for Energy, Stanford University (2018)
- Blavatnik National Laureate in Physical Sciences and Engineering, Blavatnik Foundation (2017)
- MRS Fellow, Materials Research Society (2016)
- Blavatnik National Award Finalist, Blavatnik Foundation (2016)
- Top 10 World Changing Technology for His Invention on Cooling Textile, Scientific American (2016)
- MRS Fred Kavli Distinguished Lectureship in Nanoscience, Materials Research Society (2015)
- Fellow of Royal Society of Chemistry, Royal Society of Chemistry (2015)
- Small Young Innovator Award, Small Journal (2015)
- Resonate Award for Sustainability, California Institute of Technology (2015)
- Blavatnik National Award Finalist, Blavatnik Foundation (2015)
- Inorganic Chemistry Frontiers Award for Young Scientist, Inorganic Chemistry Frontiers (2015)
- Inaugural Schlumberger Chemistry Lectureship, University of Cambridge (2015)
- Top 10 World Changing Technology for His Invention on Batteries to Capture Low-Grade Waste Heat, Scientific American (2014)
- NO. 1 Ranked Materials Scientist Worldwide, Thomas Reuters (2014)
- Closs Lectureship, University of Chicago (2014)
- Inaugural Nano Energy Award, Nano Energy Journal (2014)
- Bau Family Awards in Inorganic Chemistry, ISCIC (2014)
- Blavatnik National Award Finalist, Blavatnik Foundation (2014)
- Distinguished Award for Novel Materials and Their Synthesis, IUPAC (2013)
- “Scientist in Residence” Lectureship, University of Duisburg-Essen (2013)
- Next Power Lectureship, National Tsing Hua University (2013)
- The Wilson Prize, Harvard University (2011)
- David Filo and Jerry Yang Faculty Scholar, Stanford University (2010-2014)
- Top 10 World Changing Technology for His Invention on Water Disinfection Nanofitlers, Scientific American (2010)
- Sloan Research Fellowship, Alfred P. Sloan Foundation (2010)
- Investigator Award, KAUST (2008)
- Young Investigator Award, ONR (2008)
- Innovators Award, MDV (2008)
- Terman Fellowship, Stanford University (2008)
- Top 100 Young Innovator Award, Technology Review (2004)
- Miller Research Fellowship, Miller Institute (2003)
- Distinguished Graduate Student Award in Nanotechnology, Foresight Institute (2002)
- Graduate Student Gold Medal Award, Materials Research Society (2001)

PROFESSIONAL EDUCATION

- PhD, Harvard University (2002)

LINKS

- Cui Lab: https://web.stanford.edu/group/cui_group/

- Energy Innovation and Emerging Technologies Certificate: https://online.stanford.edu/programs/energy-innovation-and-emerging-technologies-certificate
- StorageX Initiative: https://energy.stanford.edu/storagex-initiative

Teaching

COURSES

2025-26

- Principles, Materials and Devices of Batteries: MATSCI 303 (Spr)

2024-25

- Principles, Materials and Devices of Batteries: MATSCI 303 (Spr)

2023-24

- Principles, Materials and Devices of Batteries: MATSCI 303 (Spr)

2022-23

- Principles, Materials and Devices of Batteries: MATSCI 303 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Tony Dong, Kenzie Sanroman Gutierrez

Postdoctoral Faculty Sponsor

Yu Cao, Yuxuan Chen, Xiwen Chi, John Holoubek, Sathya Jagadeesan, Jinlei Li, Junyan Li, Yuqi Li, Zaichun Liu, Xueer Xu, Zhichen Xue, Qi Zheng, Shiyuan Zhou

Doctoral Dissertation Advisor (AC)

Angela Cai, Xin Chen, Zhouyi Chen, Guoliang Hu, Junyoung Lee, Tony Li, Chenwei Liu, Emily Miao, Ajay Ravi, Prasanna Sarkar, Chad Serrao, Jerry Su, Jing Wang

Doctoral Dissertation Co-Advisor (AC)

Pin-Hung Chung, Jeffrey Heo, Carina Yi Jing Lim, Luca Mondonico, Charles Yang, Xiaoyu Yang, Elizabeth Zhang

Publications

PUBLICATIONS

- **Household Materials Selection for Homemade Cloth Face Coverings and Their Filtration Efficiency Enhancement with Triboelectric Charging.** *Nano letters*
  Zhao, M., Liao, L., Xiao, W., Yu, X., Wang, H., Wang, Q., Lin, Y. L., Kilinc-Balci, F. S., Price, A., Chu, L., Chu, M. C., Chu, S., Cui, et al
  2020
- **Incorporating the nanoscale encapsulation concept from liquid electrolytes into solid-state lithium-sulfur batteries.** *Nano letters*
  Gao, X., Zheng, X., Wang, J., Zhang, Z., Xiao, X., Wan, J., Ye, Y., Chou, L., Lee, H. K., Wang, J., Vila, R. A., Yang, Y., Zhang, et al
  2020
- **Stretchable electrochemical energy storage devices.** *Chemical Society reviews*
  Mackanic, D. G., Chang, T., Huang, Z., Cui, Y., Bao, Z.
  2020
- **Electrode roughness dependent electrodeposition of sodium at the nanoscale** *NANO ENERGY*
  Zeng, Z., Barai, P., Lee, S., Yang, J., Zhang, X., Zheng, W., Liu, Y., Bustillo, K. C., Ercius, P., Guo, J., Cui, Y., Srinivasan, V., Zheng, et al

2020; 72

- **An approaching-theoretical-capacity anode material for aqueous battery: Hollow hexagonal prism Bi2O3 assembled by nanoparticles** *ENERGY STORAGE MATERIALS*
  Zan, G., Wu, T., Hu, P., Zhou, Y., Zhao, S., Xu, S., Chen, J., Cui, Y., Wu, Q.
  2020; 28: 82–90
- **Can N95 Respirators Be Reused after Disinfection? How Many Times?** *ACS nano*
  Liao, L., Xiao, W., Zhao, M., Yu, X., Wang, H., Wang, Q., Chu, S., Cui, Y.
  2020
- **Electrolytes for microsized silicon** *NATURE ENERGY*
  Wang, J., Cui, Y.
  2020
- **A High-Rate Lithium Manganese Oxide-Hydrogen Battery.** *Nano letters*
  Zhu, Z., Wang, M., Meng, Y., Lin, Z., Cui, Y., Chen, W.
  2020
- **Advanced Textiles for Personal Thermal Management and Energy** *JOULE*
  Peng, Y., Cui, Y.
  2020; 4 (4): 724–42
- **Tortuosity Effects in Lithium-Metal Host Anodes** *JOULE*
  Chen, H., Pei, A., Wan, J., Lin, D., Vila, R., Wang, H., Mackanic, D., Steinruck, H., Huang, W., Li, Y., Yang, A., Xie, J., Wu, et al
  2020; 4 (4): 938–52
- **Improving Lithium Metal Composite Anodes with Seeding and Pillaring Effects of Silicon Nanoparticles.** *ACS nano*
  Wang, H., Cao, X., Gu, H., Liu, Y., Li, Y., Zhang, Z., Huang, W., Wang, H., Wang, J., Xu, W., Zhang, J., Cui, Y.
  2020
- **A New Class of Ionically Conducting Fluorinated Ether Electrolytes with High Electrochemical Stability.** *Journal of the American Chemical Society*
  Amanchukwu, C. V., Yu, Z., Kong, X., Qin, J., Cui, Y., Bao, Z.
  2020
- **Resolving Nanoscopic and Mesoscopic Heterogeneity of Fluorinated Species in Battery Solid-Electrolyte Interphases by Cryogenic Electron Microscopy** *ACS ENERGY LETTERS*
  Huang, W., Wang, H., Boyle, D. T., Li, Y., Cui, Y.
  2020; 5 (4): 1128–35
- **Scalable synthesis of nanoporous silicon microparticles for highly cyclable lithium-ion batteries** *NANO RESEARCH*
  Wang, J., Huang, W., Kim, Y., Jeong, Y., Kim, S., Heo, J., Lee, H., Liu, B., Nah, J., Cui, Y.
  2020
- **Aspects of the synthesis of thin film superconducting infinite-layer nickelates** *APL MATERIALS*
  Lee, K., Goodge, B. H., Li, D., Osada, M., Wang, B., Cui, Y., Kourkoutis, L. F., Hwang, H. Y.
  2020; 8 (4)
- **High-purity electrolytic lithium obtained from low-purity sources using solid electrolyte** *NATURE SUSTAINABILITY*
  Lang, J., Jin, Y., Liu, K., Long, Y., Zhang, H., Qi, L., Wu, H., Cui, Y.
  2020
- **A novel battery scheme: Coupling nanostructured phosphorus anodes with lithium sulfide cathodes** *NANO RESEARCH*
  Wu, D., Zhou, G., Mao, E., Sun, Y., Liu, B., Wang, L., Wang, J., Shi, F., Cui, Y.
  2020
- **A binder-free high silicon content flexible anode for Li-ion batteries** *ENERGY & ENVIRONMENTAL SCIENCE*
  Wang, H., Fu, J., Wang, C., Wang, J., Yang, A., Li, C., Sun, Q., Cui, Y., Li, H.
  2020; 13 (3): 848–58

- **Efficient synthesis of high-sulfur-content cathodes for high-performance Li-S batteries based on solvothermal polysulfide chemistry** *JOURNAL OF POWER SOURCES*
  Weng, Y., Wang, H., Lee, R., Huang, C., Huang, S., Abdollahifar, M., Kuo, L., Hwang, B., Kuo, C., Cui, Y., Wu, N.
  2020; 450
- **A Fireproof, Lightweight, Polymer-Polymer Solid-State Electrolyte for Safe Lithium Batteries.** *Nano letters*
  Cui, Y., Wan, J., Ye, Y., Liu, K., Chou, L., Cui, Y.
  2020
- **Membrane-Free Zn/MnO2 Flow Battery for Large-Scale Energy Storage** *ADVANCED ENERGY MATERIALS*
  Li, G., Chen, W., Zhang, H., Gong, Y., Shi, F., Wang, J., Zhang, R., Chen, G., Jin, Y., Wu, T., Tang, Z., Cui, Y.
  2020
- **Robust ultraclean atomically thin membranes for atomic-resolution electron microscopy.** *Nature communications*
  Zheng, L., Chen, Y., Li, N., Zhang, J., Liu, N., Liu, J., Dang, W., Deng, B., Li, Y., Gao, X., Tan, C., Yang, Z., Xu, et al
  2020; 11 (1): 541
- **High-Energy-Density Solid-Electrolyte-Based Liquid Li-S and Li-Se Batteries** *JOULE*
  Jin, Y., Liu, K., Lang, J., Jiang, X., Zheng, Z., Su, Q., Huang, Z., Long, Y., Wang, C., Wu, H., Cui, Y.
  2020; 4 (1): 262–74
- **From Intercalation to Alloying Chemistry: Structural Design of Silicon Anodes for the Next Generation of Lithium-ion Batteries** *CHINESE JOURNAL OF STRUCTURAL CHEMISTRY*
  Yang Yu-Fei, Yang Jin-Long, Pan Feng, Cui Yi
  2020; 39 (1): 16–19
- **Synergistic enhancement of electrocatalytic CO2 reduction to C2 oxygenates at nitrogen-doped nanodiamonds/Cu interface.** *Nature nanotechnology*
  Wang, H., Tzeng, Y., Ji, Y., Li, Y., Li, J., Zheng, X., Yang, A., Liu, Y., Gong, Y., Cai, L., Li, Y., Zhang, X., Chen, et al
  2020
- **Theoretical Calculation Guided Design of Single-Atom Catalysts toward Fast Kinetic and Long-Life Li-S Batteries.** *Nano letters*
  Zhou, G. n., Zhao, S. n., Wang, T. n., Yang, S. Z., Johannessen, B. n., Chen, H. n., Liu, C. n., Ye, Y. n., Wu, Y. n., Peng, Y. n., Liu, C. n., Jiang, S. P., Zhang, et al
  2020
- **Design Principles of Artificial Solid Electrolyte Interphases for Lithium-Metal Anodes** *Cell Reports Physical Science*
  Yu, Z., Cui, Y., Bao, Z.
  2020; 1 (7): 100119
- **High-temperature, spectrally-selective, scalable, and flexible thin-film Si absorber and emitter** *OPTICAL MATERIALS EXPRESS*
  Zhou, Z., Tian, H., Hymel, T. M., Reddy, H., Shalaev, V. M., Cui, Y., Bermel, P.
  2020; 10 (1): 208–21
- **Mechanical rolling formation of interpenetrated lithium metal/lithium tin alloy foil for ultrahigh-rate battery anode.** *Nature communications*
  Wan, M. n., Kang, S. n., Wang, L. n., Lee, H. W., Zheng, G. W., Cui, Y. n., Sun, Y. n.
  2020; 11 (1): 829
- **Transient Voltammetry with Ultramicroelectrodes Reveals the Electron Transfer Kinetics of Lithium Metal Anodes** *Adv. Energy Lett.*
  Boyle, D., Kong, X., Pei, A., Rudnicki, P., Shi, F., Huang, W., Bao, Z., Qin, J., Cui, Y.
  2020; 5: 701-709
- **Supercooled liquid sulfur maintained in three-dimensional current collector for high-performance Li-S batteries.** *Science advances*
  Zhou, G. n., Yang, A. n., Gao, G. n., Yu, X. n., Xu, J. n., Liu, C. n., Ye, Y. n., Pei, A. n., Wu, Y. n., Peng, Y. n., Li, Y. n., Liang, Z. n., Liu, et al
  2020; 6 (21): eaay5098
- **A molten battery consisting of Li metal anode, AlCl3-LiCl cathode and solid electrolyte** *ENERGY STORAGE MATERIALS*
  Lang, J., Liu, K., Jin, Y., Long, Y., Qi, L., Wu, H., Cui, Y.
  2020; 24: 412–16

- **Electrochemical generation of liquid and solid sulfur on two-dimensional layered materials with distinct areal capacities** *Nature Nanotechnology*
  Yang, A., Zhou, G., et al
  2020
- **Electrotunable liquid sulfur microdroplets.** *Nature communications*
  Zhou, G. n., Yang, A. n., Wang, Y. n., Gao, G. n., Pei, A. n., Yu, X. n., Zhu, Y. n., Zong, L. n., Liu, B. n., Xu, J. n., Liu, N. n., Zhang, J. n., Li, et al
  2020; 11 (1): 606
- **A Single-Ion Conducting Borate Network Polymer as a Viable Quasi-Solid Electrolyte for Lithium Metal Batteries.** *Advanced materials (Deerfield Beach, Fla.)*
  Shin, D. M., Bachman, J. E., Taylor, M. K., Kamcev, J. n., Park, J. G., Ziebel, M. E., Velasquez, E. n., Jarenwattananon, N. N., Sethi, G. K., Cui, Y. n., Long, J. R.
  2020: e1905771
- **Electrochemical generation of liquid and solid sulfur on two-dimensional layered materials with distinct areal capacities.** *Nature nanotechnology*
  Yang, A. n., Zhou, G. n., Kong, X. n., Vilá, R. A., Pei, A. n., Wu, Y. n., Yu, X. n., Zheng, X. n., Wu, C. L., Liu, B. n., Chen, H. n., Xu, Y. n., Chen, et al
  2020
- **An ultrathin ionomer interphase for high efficiency lithium anode in carbonate based electrolyte.** *Nature communications*
  Weng, Y., Liu, H., Pei, A., Shi, F., Wang, H., Lin, C., Huang, S., Su, L., Hsu, J., Fang, C., Cui, Y., Wu, N.
  2019; 10 (1): 5824
- **A Water Stable, Near-Zero-Strain O3-Layered Titanium-Based Anode for Long Cycle Sodium-Ion Battery** *ADVANCED FUNCTIONAL MATERIALS*
  Cao, Y., Zhang, Q., Wei, Y., Guo, Y., Zhang, Z., Huang, W., Yang, K., Chen, W., Zhai, T., Li, H., Cui, Y.
  2019
- **Artificial Solid Electrolyte Interphase for Suppressing Surface Reactions and Cathode Dissolution in Aqueous Zinc Ion Batteries** *ACS ENERGY LETTERS*
  Guo, J., Ming, J., Lei, Y., Zhang, W., Xia, C., Cui, Y., Alshareef, H. N.
  2019; 4 (12): 2776–81
- **Improved Oxygen Reduction Reaction Activity of Nanostructured CoS2 through Electrochemical Tuning** *ACS APPLIED ENERGY MATERIALS*
  Zhao, W., Bothra, P., Lu, Z., Li, Y., Mei, L., Liu, K., Zhao, Z., Chen, G., Back, S., Siahrostami, S., Kulkarni, A., Norskov, J. K., Bajdich, et al
  2019; 2 (12): 8605–14
- **Decoupling of mechanical properties and ionic conductivity in supramolecular lithium ion conductors.** *Nature communications*
  Mackanic, D. G., Yan, X., Zhang, Q., Matsuhisa, N., Yu, Z., Jiang, Y., Manika, T., Lopez, J., Yan, H., Liu, K., Chen, X., Cui, Y., Bao, et al
  2019; 10 (1): 5384
- **Energy storage: The future enabled by nanomaterials.** *Science (New York, N.Y.)*
  Pomerantseva, E., Bonaccorso, F., Feng, X., Cui, Y., Gogotsi, Y.
  2019; 366 (6468)
- **Unravelling Degradation Mechanisms and Atomic Structure of Organic-Inorganic Halide Perovskites by Cryo-EM** *JOULE*
  Li, Y., Zhou, W., Li, Y., Huang, W., Zhang, Z., Chen, G., Wang, H., Wu, G., Rolston, N., Vila, R., Chiu, W., Cui, Y.
  2019; 3 (11): 2854–66
- **A Dynamic, Electrolyte-Blocking, and Single-Ion-Conductive Network for Stable Lithium-Metal Anodes** *JOULE*
  Yu, Z., Mackanic, D. G., Michaels, W., Lee, M., Pei, A., Feng, D., Zhang, Q., Tsao, Y., Amanchukwu, C., Yan, X., Wang, H., Chen, S., Liu, et al
  2019; 3 (11): 2761–76
- **Minimized lithium trapping by isovalent isomorphism for high initial Coulombic efficiency of silicon anodes.** *Science advances*
  Zhu, B., Liu, G., Lv, G., Mu, Y., Zhao, Y., Wang, Y., Li, X., Yao, P., Deng, Y., Cui, Y., Zhu, J.
  2019; 5 (11): eaax0651
- **Two-dimensional inorganic molecular crystals.** *Nature communications*
  Han, W., Huang, P., Li, L., Wang, F., Luo, P., Liu, K., Zhou, X., Li, H., Zhang, X., Cui, Y., Zhai, T.

2019; 10 (1): 4728

- **Nonpolar Alkanes Modify Lithium-Ion Solvation for Improved Lithium Deposition and Stripping** *ADVANCED ENERGY MATERIALS*
  Amanchukwu, C., Kong, X., Qin, J., Cui, Y., Bao, Z.
  2019
- **Design of Hollow Nanostructures for Energy Storage, Conversion and Production** *ADVANCED MATERIALS*
  Wang, J., Cui, Y., Wang, D.
  2019; 31 (38)
- **Monolithic solid-electrolyte interphases formed in fluorinated orthoformate-based electrolytes minimize Li depletion and pulverization** *NATURE ENERGY*
  Cao, X., Ren, X., Zou, L., Engelhard, M. H., Huang, W., Wang, H., Matthews, B. E., Lee, H., Niu, C., Arey, B. W., Cui, Y., Wang, C., Xiao, et al
  2019; 4 (9): 796–805
- **Preventing Li depletion and pulverization by monolithic SEI layer generated in fluorinated orthoformate based electrolytes**
  Cao, X., Ren, X., Zou, L., Engelhard, M., Huang, W., Wang, H., Matthews, B., Lee, H., Niu, C., Arey, B., Cui, Y., Wang, C., Xiao, et al
  AMER CHEMICAL SOC.2019
- **Intrinsically flexible redox-active polyurethanes for electrochemical energy storage**
  Mackanic, D., Cui, Y., Bao, Z.
  AMER CHEMICAL SOC.2019
- **Scalable and facile preparation of SSNs for lithium metal stabilization**
  Mackanic, D., Yu, Z., Cui, Y., Bao, Z.
  AMER CHEMICAL SOC.2019
- **Understanding and redesigning metallic lithium for next-generation batteries**
  Liu, Y., Lin, D., Lin, Y., Chen, G., Pei, A., Lie, Y., Cui, Y.
  AMER CHEMICAL SOC.2019
- **Dynamic single-ion-conductive network as a stable lithium metal artificial solid electrolyte interphase in carbonate electrolyte**
  Mackanic, D., Yu, Z., Cui, Y., Bao, Z.
  AMER CHEMICAL SOC.2019
- **Decoupling of mechanical properties and ionic conductivity in supramolecular stretchable battery materials**
  Mackanic, D., Cui, Y., Bao, Z.
  AMER CHEMICAL SOC.2019
- **Self-Selective Catalyst Synthesis for CO2 Reduction** *JOULE*
  Wang, H., Liang, Z., Tang, M., Chen, G., Li, Y., Chen, W., Lin, D., Zhang, Z., Zhou, G., Li, J., Lu, Z., Chan, K., Tan, et al
  2019; 3 (8): 1927–36
- **Cryo-EM Structures of Atomic Surfaces and Host-Guest Chemistry in Metal-Organic Frameworks** *MATTER*
  Li, Y., Wang, K., Zhou, W., Li, Y., Vila, R., Huang, W., Wang, H., Chen, G., Wu, G., Tsao, Y., Wang, H., Sinclair, R., Chiu, et al
  2019; 1 (2): 428–38
- **Improving cyclability of Li metal batteries at elevated temperatures and its origin revealed by cryo-electron microscopy** *NATURE ENERGY*
  Wang, J., Huang, W., Pei, A., Li, Y., Shi, F., Yu, X., Cui, Y.
  2019; 4 (8): 664–70
- **Superconductivity in an infinite-layer nickelate.** *Nature*
  Li, D., Lee, K., Wang, B. Y., Osada, M., Crossley, S., Lee, H. R., Cui, Y., Hikita, Y., Hwang, H. Y.
  2019; 572 (7771): 624–27
- **Challenges and opportunities towards fast-charging battery materials** *NATURE ENERGY*
  Liu, Y., Zhu, Y., Cui, Y.
  2019; 4 (7): 540–50
- **An Autotransferable g-C3N4 Li+-Modulating Layer toward Stable Lithium Anodes** *ADVANCED MATERIALS*
  Guo, Y., Niu, P., Liu, Y., Ouyang, Y., Li, D., Zhai, T., Li, H., Cui, Y.

2019; 31 (27)

- **Surface-engineered mesoporous silicon microparticles as high-Coulombic-efficiency anodes for lithium-ion batteries** *NANO ENERGY*
  Wang, J., Liao, L., Lee, H., Shi, F., Huang, W., Zhao, J., Pei, A., Tang, J., Zheng, X., Chen, W., Cui, Y.
  2019; 61: 404–10
- **Temperature Regulation in Colored Infrared-Transparent Polyethylene Textiles** *JOULE*
  Cai, L., Peng, Y., Xu, J., Zhou, C., Zhou, C., Wu, P., Lin, D., Fan, S., Cui, Y.
  2019; 3 (6): 1478–86
- **Uniform High Ionic Conducting Lithium Sulfide Protection Layer for Stable Lithium Metal Anode** *ADVANCED ENERGY MATERIALS*
  Chen, H., Pei, A., Lin, D., Xie, J., Yang, A., Xu, J., Lin, K., Wang, J., Wang, H., Shi, F., Boyle, D., Cui, Y.
  2019; 9 (22)
- **Ultrathin, flexible, solid polymer composite electrolyte enabled with aligned nanoporous host for lithium batteries.** *Nature nanotechnology*
  Wan, J., Xie, J., Kong, X., Liu, Z., Liu, K., Shi, F., Pei, A., Chen, H., Chen, W., Chen, J., Zhang, X., Zong, L., Wang, et al
  2019
- **Direct/Alternating Current Electrochemical Method for Removing and Recovering Heavy Metal from Water Using Graphene Oxide Electrode.** *ACS nano*
  Liu, C., Wu, T., Hsu, P., Xie, J., Zhao, J., Liu, K., Sun, J., Xu, J., Tang, J., Ye, Z., Lin, D., Cui, Y.
  2019
- **Fast lithium growth and short circuit induced by localized-temperature hotspots in lithium batteries.** *Nature communications*
  Zhu, Y., Xie, J., Pei, A., Liu, B., Wu, Y., Lin, D., Li, J., Wang, H., Chen, H., Xu, J., Yang, A., Wu, C., Wang, et al
  2019; 10 (1): 2067
- **Fast lithium growth and short circuit induced by localized-temperature hotspots in lithium batteries** *NATURE COMMUNICATIONS*
  Zhu, Y., Xie, J., Pei, A., Liu, B., Wu, Y., Lin, D., Li, J., Wang, H., Chen, H., Xu, J., Yang, A., Wu, C., Wang, et al
  2019; 10
- **High-Rate and Large-Capacity Lithium Metal Anode Enabled by Volume Conformal and Self-Healable Composite Polymer Electrolyte** *ADVANCED SCIENCE*
  Xia, S., Lopez, J., Liang, C., Zhang, Z., Bao, Z., Cui, Y., Liu, W.
  2019; 6 (9)
- **In Situ X-ray Absorption Spectroscopic Investigation of the Capacity Degradation Mechanism in Mg/S Batteries** *NANO LETTERS*
  Xu, Y., Ye, Y., Zhao, S., Feng, J., Li, J., Chen, H., Yang, A., Shi, F., Jia, L., Wu, Y., Yu, X., Glans-Suzuki, P., Cui, et al
  2019; 19 (5): 2928–34
- **Designing polymers for advanced battery chemistries** *NATURE REVIEWS MATERIALS*
  Lopez, J., Mackanic, D. G., Cui, Y., Bao, Z.
  2019; 4 (5): 312–30
- **Bright sub-20-nm cathodoluminescent nanoprobes for electron microscopy** *NATURE NANOTECHNOLOGY*
  Prigozhin, M. B., Maurer, P. C., Courtis, A. M., Liu, N., Wisser, M. D., Siefe, C., Tian, B., Chan, E., Song, G., Fischer, S., Aloni, S., Ogletree, D., Barnard, et al
  2019; 14 (5): 420-+
- **Aqueous Zinc-Ion Storage in MoS2 by Tuning the Intercalation Energy** *NANO LETTERS*
  Liang, H., Cao, Z., Ming, F., Zhang, W., Anjum, D. H., Cui, Y., Cavallo, L., Alshareef, H. N.
  2019; 19 (5): 3199–3206
- **Amidoxime-Functionalized Macroporous Carbon Self-Refreshed Electrode Materials for Rapid and High-Capacity Removal of Heavy Metal from Water.** *ACS central science*
  Wu, T., Liu, C., Kong, B., Sun, J., Gong, Y., Liu, K., Xie, J., Pei, A., Cui, Y.
  2019; 5 (4): 719–26
- **Amidoxime-Functionalized Macroporous Carbon Self-Refreshed Electrode Materials for Rapid and High-Capacity Removal of Heavy Metal from Water** *ACS CENTRAL SCIENCE*
  Wu, T., Liu, C., Kong, B., Sun, J., Gong, Y., Liu, K., Xie, J., Pei, A., Cui, Y.

2019; 5 (4): 719–26

- **Design of Red Phosphorus Nanostructured Electrode for Fast-Charging Lithium-Ion Batteries with High Energy Density** *JOULE*
  Sun, Y., Wang, L., Li, Y., Li, Y., Lee, H., Pei, A., He, X., Cui, Y.
  2019; 3 (4): 1080–93
- **Aqueous Zinc-Ion Storage in MoS2 by Tuning the Intercalation Energy.** *Nano letters*
  Liang, H., Cao, Z., Ming, F., Zhang, W., Anjum, D. H., Cui, Y., Cavallo, L., Alshareef, H. N.
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