




## Zhenan Bao

K. K. Lee Professor and Professor, by courtesy, of Materials Science and Engineering and of Chemistry

Chemical Engineering

 Curriculum Vitae available Online

### CONTACT INFORMATION

#### • Administrative Contact

Michelle Ly - Administrative Assistant

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### Bio

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#### BIO

Zhenan Bao joined Stanford University in 2004. She is currently a K.K. Lee Professor in Chemical Engineering, and with courtesy appointments in Chemistry and Material Science and Engineering. She was the Department Chair of Chemical Engineering from 2018-2022. She founded the Stanford Wearable Electronics Initiative (eWEAR) and is the current faculty director. She is also an affiliated faculty member of Precourt Institute, Woods Institute, ChEM-H and Bio-X. Professor Bao received her Ph.D. degree in Chemistry from The University of Chicago in 1995 and joined the Materials Research Department of Bell Labs, Lucent Technologies. She became a Distinguished Member of Technical Staff in 2001. Professor Bao currently has close to 700 refereed publications and more than 80 US patents with a Google Scholar H-index 201.

Bao is a member of the US National Academy of Engineering, the American Academy of Arts and Sciences and the National Academy of Inventors. Bao was elected a foreign member of the Chinese Academy of Science in 2021. She is a Fellow of AAAS, ACS, MRS, SPIE, ACS POLY and ACS PMSE.

Bao is a member of the Board of Directors for the Camille and Dreyfus Foundation from 2022. She served as a member of Executive Board of Directors for the Materials Research Society and Executive Committee Member for the Polymer Materials Science and Engineering division of the American Chemical Society. She was an Associate Editor for the Royal Society of Chemistry journal Chemical Science, Polymer Reviews and Synthetic Metals. She serves on the international advisory board for Advanced Materials, Advanced Energy Materials, ACS Nano, Accounts of Chemical Reviews, Advanced Functional Materials, Chemistry of Materials, Chemical Communications, Journal of American Chemical Society, Nature Asian Materials, Materials Horizon and Materials Today. She is one of the Founders and currently sits on the Board of Directors of C3 Nano Co. and PyrAmes, both are silicon valley venture funded companies.

Bao was a recipient of the VinFuture Prize Female Innovator 2022, ACS Award of Chemistry of Materials 2022, MRS Mid-Career Award in 2021, AIChE Alpha Chi Sigma Award 2021, ACS Central Science Disruptor and Innovator Prize in 2020, ACS Gibbs Medal in 2020, the Wilhelm Exner Medal from the Austrian Federal Minister of Science in 2018, the L'Oreal UNESCO Women in Science Award North America Laureate in 2017. She was awarded the ACS Applied Polymer Science Award in 2017, ACS Creative Polymer Chemistry Award in 2013 ACS Cope Scholar Award in 2011. She is a recipient of the Royal Society of Chemistry Beilby Medal and Prize in 2009, IUPAC Creativity in Applied Polymer Science Prize in 2008, American Chemical Society Team Innovation Award 2001, R&D 100 Award, and R&D Magazine Editors Choice Best of the Best new technology for 2001.

## ACADEMIC APPOINTMENTS

- Professor, Chemical Engineering
- Professor (By courtesy), Materials Science and Engineering
- Professor (By courtesy), Chemistry
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance
- Member, Maternal & Child Health Research Institute (MCHRI)
- Affiliate, Precourt Institute for Energy
- Faculty Fellow, Sarafan ChEM-H
- Affiliate, Stanford Woods Institute for the Environment
- Member, Wu Tsai Neurosciences Institute

## ADMINISTRATIVE APPOINTMENTS

- Department Chair, Stanford University Department of Chemical Engineering, (2018-2022)
- Director, Stanford Wearable Electronics Initiative (eWEAR), (2016- present)

## HONORS AND AWARDS

- ACS Award of Chemistry of Materials, American Chemical Society (2022)
- ACS Outstanding Global Mentor Award in Polymer Science and Engineering, American Chemical Society (2022)
- Fellow, Royal Chemical Society (2022)
- Honorary Member, Chinese Chemical Society (2022)
- Investigator, CZ BioHub (2022)
- Materials Today Innovation Award, Elsevier (2022)
- VinFuture Prize Female Innovator, VinFuture Foundation (2022)
- AIChE Alpha Chi Sigma Award, American Institute of Chemical Engineers (2021)
- Charles G. Overberger International Prize for Excellence Polymer Research, American Chemical Society Polymer Chemistry Division (2021)
- Foreign Member, Chinese Academy of Science (2021)
- MRS Mid-Career Award, Material Research Society (2021)
- Member, American Academy of Arts and Sciences (2021)
- ACS Central Science Disruptors and Innovators Prize, American Chemical Society (2020)
- Gibbs Medal, American Chemical Society (2020)
- ACS Nano Lectureship Award, American Chemical Society (2018)
- Wilhelm Exner Medal, Austrian Federal Minister of Science (2018)
- Applied Polymer Science Award, American Chemical Society (ACS) (2017)
- Member, National Academy of Inventors (2017)
- Women in Science Award, L'Oreal Foundation and UNESCO (2017)
- Member, National Academy of Engineering, National Academy of Engineering (2016)
- ACS POLY Fellow, American Chemical Society (ACS) Polymer Division (POLY) (2014)
- Andreas Acrivos Award for Professional Progress in Chemical Engineering, American Institute of Chemical Engineers (AIChE) (2014)

- MRS Fellow, Materials Research Society (MRS) (2014)
- ACS Polymer Division Carl S. Marvel Creative Polymer Chemistry Award, American Chemical Society (ACS) (2013)
- Honorary Guest Professorship, Soochow University, China (2013)
- AAAS Fellow, American Association for the Advancement of Science (AAAS) (2012)
- Cheung Kong Scholar, Li Ka Shing Foundation and Chinese Ministry of Education (2012)
- Honorary Guest Professorship, Nanjing Industry University, China (2012)
- ACS Fellow, American Chemical Society (ACS) (2011)
- ACS PMSE Fellow, American Chemical Society (ACS) Polymer Science and Engineering (PMSE) division (2011)
- Most influential Chinese in the World, Science and Technology Category, Phoenix TV (2011)
- Founder, Board of Directors, C3 Nano Co. (2010-present)
- Honorary Si Yuan Chair Professorship, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, China (2010-2013)
- David Filo and Jerry Yang Faculty Scholar, Stanford University (2009-2012)
- The Royal Society of Chemistry 2009 Beilby Medal and Prize, Stanford University (2009)
- IUPAC Award, Polymer International (2008)
- SPIE Fellow, SPIE (2008)
- 50 Awards in the Innovator category, Nanotech Briefs (2007)
- Featured in Women in SPIE Optics Planner calendar, SPIE (2007)
- Ranked 4 among the Top 20 most cited authors in the field of Organic Thin Film Transistors, ISI (2007)
- Teaching Excellence Award, Stanford Society of Women Engineering (2007)
- Sloan Research Fellowship, Alfred P. Sloan Foundation (2006)
- Du Pont Science and Technology Award, DuPont (2005)
- Finmeccanica Faculty Scholar, Stanford University (2004-2008)
- Terman Fellow, Stanford University (2004-2007)
- Robert Noyce Faculty Scholar, Stanford University (2004-2005)
- 3M Faculty Award, 3M (2004)
- Best Mentor Award, University Relations of Lucent Technologies (2003)
- Top 100 young innovators for this century, MIT Technology Review (2003)
- Team Innovation Award, American Chemical Society (2002)
- Editor's Choice of the "Best of the Best" in new technology, R&D Magazine (2001)
- R&D 100 Award for the work on Printed Plastic Circuits for Electronic Paper Displays, R&D Magazine (2001)
- Top 10 Research Breakthroughs for work on large scale integrated circuits based on organic materials, Science Magazine (2000)
- Top 100 Young Engineers, National Academy of Engineering (2000)

## **BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS**

- Advisor, Science For America (2022 - present)
- Advisory Council Member, Pritzker School of Molecular Engineering, University of Chicago (2022 - present)
- Board of Directors, Camille and Henry Dreyfus Foundation (2022 - present)
- Program Chair, US-China National Academy of Engineering Frontier of Engineering Symposium (2019 - 2019)
- Scientific Advisory Board Member, Beijing Institute for Collaborative Innovation (2018 - 2022)
- Science Committee Member, Future Prize of China (2018 - 2021)

- International Advisory Board, Accounts Chemical Reviews (2017 - 2022)
- Scientific Advisory Board, Solvay (2017 - 2020)
- International Advisory Board, J. Am. Chem. Soc. (2015 - present)
- International advisory board member, ShanghaiTech, School of Physical Science and Technology (2014 - 2019)
- Associate Editor, Chemical Science (2014 - 2016)
- International Editorial Advisory Board, Materials Horizon (2013 - present)
- International Editorial Advisory Board, Advanced Materials (2013 - present)
- International Editorial Advisory Board, Chemical Communications (2012 - present)
- International Editorial Advisory Board, Advanced Energy Materials (2012 - present)
- International Editorial Advisory Board, Nanoscale (2012 - present)
- Board of Directors, C3 Nano, Co. (2011 - present)
- International Editorial Advisory Board, ACS Nano (2011 - present)
- International Editorial Advisory Board, Nature Asia Materials (2011 - present)
- International advisory board member, LG Display (2010 - 2014)
- Conference Chair, Gordon Research Conference on Electronic Processes in Organic Materials (2010 - 2010)
- Board Member, National Academies Board on Chemical Sciences and Technology (2009 - 2012)
- Executive Committee Member/Member-at-Large, Division of Polymer Materials Science and Engineering, American Chemical Society (2009 - 2012)
- Associate Editor, Synthetic Metals (2009 - 2011)
- International Editorial Advisory Board, Chemistry of Materials (2006 - 2011)
- Scientific Advisory Board Member, Plastic Electronics Foundation (2006 - 2009)
- Associate Editor, Polymer Review (2004 - 2008)
- Board of Directors, Material Research Society (MRS) (2003 - 2005)
- International Editorial Advisory Board, Materials Today (2002 - present)
- Meeting chair, Materials Research Society Spring Meeting (2002 - 2002)
- International Editorial Advisory Board, Advanced Functional Materials (2001 - 2005)
- Executive Committee Member/Member-at-Large, Division of Polymer Materials Science and Engineering, American Chemical Society (2000 - 2006)

## PROFESSIONAL EDUCATION

- MS, The University of Chicago , Chemistry (1993)
- PhD, The University of Chicago , Chemistry (1995)

## LINKS

- Bao Research Group: <http://baogroup.stanford.edu>
- Stanford Wearable Electronics Initiative (eWEAR): <http://wearable.stanford.edu>

## Teaching

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### COURSES

#### 2023-24

- Graduate Practical Training: CHEMENG 299 (Sum)
- Micro and Nanoscale Fabrication Engineering: CHEMENG 140X, CHEMENG 440 (Win)

#### 2022-23

- Graduate Practical Training: CHEMENG 299 (Sum)
- Polymer Chemistry: CHEMENG 464 (Win)
- Special Topics in Functional Organic Materials for Electronic and Optical Devices: CHEMENG 513 (Aut)

#### 2021-22

- Graduate Practical Training: CHEMENG 299 (Sum)
- Special Topics in Functional Organic Materials for Electronic and Optical Devices: CHEMENG 513 (Aut, Win, Spr, Sum)

#### 2020-21

- Graduate Practical Training: CHEMENG 299 (Sum)
- Special Topics in Functional Organic Materials for Electronic and Optical Devices: CHEMENG 513 (Aut, Win, Spr, Sum)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Tyler Benster, Lucia Brunel, Brandon Clark, Kang Yong Loh, Shaswat Mohanty, Sanzeeda Baig Shuchi, Lingze Wei, KE ZHENG, Chengshuang Zhou

#### Postdoctoral Faculty Sponsor

Tianyang Chen, Xuelin Guo, Zihan He, Muhammad Khatib, Yeongjun Lee, Hao Lyu, Alam Mahmud, Lukas Michalek, Hyunchang Park, Jaeho Park, Laura Rijns, Sam Root, Susmita Sarkar, Ines Weber, Shiyuan Wei, Can Wu, Mason Wu, Weilai Yu, Anqi Zhang, Chuanzhen Zhao, Yepin Zhao, Donglai Zhong

#### Doctoral Dissertation Advisor (AC)

Arielle Berman, Yuelang Chen, Jerika Chiong, Il Rok Choi, Jacob Florian, Michal Gala, Eunyoung Kim, Kelly Liu, Rachael Mow, Yuya Nishio, Amnahir Pena-Alcantara, Alexandra Ramos Figueroa, Max Schrock, Yuran Shi, Diego Uruchurtu Patino, Weichen Wang, Yating Yao, Elizabeth Zhang, Spencer Zhao

#### Doctoral Dissertation Co-Advisor (AC)

Mun Sek Kim, Alexandra Ringsby, Eric Zhao

#### Master's Program Advisor

Yihui Zhang

#### Postdoctoral Research Mentor

Stefano Cestellos Blanco, Xuelin Guo, Zihan He, Muhammad Khatib, Yeongjun Lee, Hao Lyu, Lukas Michalek, Jaeho Park, Sam Root, Shiyuan Wei, Can Wu, Mason Wu, Weilai Yu, Anqi Zhang, Chuanzhen Zhao, Donglai Zhong

### Publications

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#### PUBLICATIONS

- **Tunable 1D and 2D Polyacrylonitrile Nanosheet Superstructures.** *ACS nano*  
Gong, H., Patino, D. U., Ilavsky, J., Kuzmenko, I., Peña-Alcántara, A. E., Zhu, C., Coffey, A. H., Michalek, L., Elabd, A., Gao, X., Chen, S., Xu, C., Yan, et al  
2023
- **Colorful low-emissivity paints for space heating and cooling energy savings.** *Proceedings of the National Academy of Sciences of the United States of America*  
Peng, Y., Lai, J. C., Xiao, X., Jin, W., Zhou, J., Yang, Y., Gao, X., Tang, J., Fan, L., Fan, S., Bao, Z., Cui, Y.  
2023; 120 (34): e2300856120
- **Toughening self-healing elastomer crosslinked by metal-ligand coordination through mixed counter anion dynamics.** *Nature communications*  
Park, H., Kang, T., Kim, H., Kim, J. C., Bao, Z., Kang, J.  
2023; 14 (1): 5026

- **Genetically targeted chemical assembly of polymers specifically localized extracellularly to surface membranes of living neurons.** *Science advances*  
Zhang, A., Loh, K. Y., Kadur, C. S., Michalek, L., Dou, J., Ramakrishnan, C., Bao, Z., Deisseroth, K.  
2023; 9 (32): eadi1870
- **Soft and stretchable organic bioelectronics for continuous intraoperative neurophysiological monitoring during microsurgery.** *Nature biomedical engineering*  
Zhou, W., Jiang, Y., Xu, Q., Chen, L., Qiao, H., Wang, Y. X., Lai, J. C., Zhong, D., Zhang, Y., Li, W., Du, Y., Wang, X., Lei, et al  
2023
- **Electrolytes with moderate lithium polysulfide solubility for high-performance long-calendar-life lithium-sulfur batteries.** *Proceedings of the National Academy of Sciences of the United States of America*  
Gao, X., Yu, Z., Wang, J., Zheng, X., Ye, Y., Gong, H., Xiao, X., Yang, Y., Chen, Y., Bone, S. E., Greenburg, L. C., Zhang, P., Su, et al  
2023; 120 (31): e2301260120
- **Ion Conducting Polymer Interfaces for Lithium Metal Anodes: Impact on the Electrodeposition Kinetics** *ADVANCED ENERGY MATERIALS*  
Choudhury, S., Huang, Z., Amanchukwu, C. V., Rudnicki, P. E., Chen, Y., Boyle, D., Qin, J., Cui, Y., Bao, Z.  
2023
- **Carbon flowers as electrocatalysts for the reduction of oxygen to hydrogen peroxide** *NANO RESEARCH*  
Gong, H., Wei, L., Chen, S., Chen, Z., Jaramillo, T. F., Bao, Z.  
2023
- **High-entropy electrolytes for practical lithium metal batteries** *NATURE ENERGY*  
Kim, S., Wang, J., Xu, R., Zhang, P., Chen, Y., Huang, Z., Yang, Y., Yu, Z., Oyakhire, S. T., Zhang, W., Greenburg, L. C., Kim, M., Boyle, et al  
2023
- **Tunable, reusable, and recyclable perfluoropolyether periodic dynamic polymers with high underwater adhesion strength** *MATTER*  
Nogusa, T., Cooper, C. B., Yu, Z., Zheng, Y., Shi, Y., Bao, Z.  
2023; 6 (7): 2439-2453
- **An emerging class of carbon materials: Synthesis and applications of carbon flowers** *MATTER*  
Gong, H., Chen, S., Tok, J., Bao, Z.  
2023; 6 (7): 2206-2234
- **Environmentally stable and stretchable polymer electronics enabled by surface-tethered nanostructured molecular-level protection.** *Nature nanotechnology*  
Zheng, Y., Michalek, L., Liu, Q., Wu, Y., Kim, H., Sayavong, P., Yu, W., Zhong, D., Zhao, C., Yu, Z., Chiong, J. A., Gong, H., Ji, et al  
2023
- **Shear-aligned large-area organic semiconductor crystals through extended pi-pi interaction** *JOURNAL OF MATERIALS CHEMISTRY C*  
Zhang, S., Talnack, F., Jousselin-Oba, T., Bhat, V., Wu, Y., Lei, Y., Tomo, Y., Gong, H., Michalek, L., Zhong, D., Wu, C., Yassar, A., Mannsfeld, et al  
2023
- **Autonomous alignment and healing in multilayer soft electronics using immiscible dynamic polymers.** *Science (New York, N.Y.)*  
Cooper, C. B., Root, S. E., Michalek, L., Wu, S., Lai, J. C., Khatib, M., Oyakhire, S. T., Zhao, R., Qin, J., Bao, Z.  
2023; 380 (6648): 935-941
- **Dissolution of the Solid Electrolyte Interphase and Its Effects on Lithium Metal Anode Cyclability.** *Journal of the American Chemical Society*  
Sayavong, P., Zhang, W., Oyakhire, S. T., Boyle, D. T., Chen, Y., Kim, S. C., Vilá, R. A., Holmes, S. E., Kim, M. S., Bent, S. F., Bao, Z., Cui, Y.  
2023
- **Neuromorphic sensorimotor loop embodied by monolithically integrated, low-voltage, soft e-skin.** *Science (New York, N.Y.)*  
Wang, W., Jiang, Y., Zhong, D., Zhang, Z., Choudhury, S., Lai, J. C., Gong, H., Niu, S., Yan, X., Zheng, Y., Shih, C. C., Ning, R., Lin, et al  
2023; 380 (6646): 735-742
- **Effects of Transition Metals on Metal-Octaaminophthalocyanine-Based 2D Metal-Organic Frameworks.** *ACS nano*  
Chen, G., Li, Z., Huang, Z., Lu, H., Long, G., Lezama Pacheco, J. S., Tok, J. B., Gao, T. Z., Lei, Y., Zhou, J., Bao, Z.  
2023
- **Understanding Lithium-Ion Dynamics in Single-Ion and Salt-in- Polymer Perfluoropolyethers and Polyethyleneglycol Electrolytes Using Solid-State NMR** *MACROMOLECULES*

Amanchukwu, C. V., Gunnarsdottir, A. B., Choudhury, S., Newlove, T. L., Magusin, P. M., Bao, Z., Grey, C. P.  
2023

- **A salt-philic, solvent-phobic interfacial coating design for lithium metal electrodes** *NATURE ENERGY*  
Huang, Z., Lai, J., Liao, S., Yu, Z., Chen, Y., Yu, W., Gong, H., Gao, X., Yang, Y., Qin, J., Cui, Y., Bao, Z.  
2023
- **Low-voltage polymer transistors on hydrophobic dielectrics and surfaces** *JOURNAL OF PHYSICS-MATERIALS*  
Kraft, U., Nikolka, M., Wang, G., Kim, Y., Pfattner, R., Alsufyani, M., McCulloch, I., Murmann, B., Bao, Z.  
2023; 6 (2)
- **Voltage and Temperature Limits of Advanced Electrolytes for Lithium-Metal Batteries** *ACS ENERGY LETTERS*  
Buyuker, I., Pei, B., Zhou, H., Cao, X., Yu, Z., Liu, S., Zhang, W., Xu, W., Zhang, J., Bao, Z., Cui, Y., Wang, C., Whittingham, et al  
2023: 1735-1743
- **Technology Roadmap for Flexible Sensors.** *ACS nano*  
Luo, Y., Abidian, M. R., Ahn, J. H., Akinwande, D., Andrews, A. M., Antonietti, M., Bao, Z., Berggren, M., Berkey, C. A., Bettinger, C. J., Chen, J., Chen, P., Cheng, et al  
2023
- **Data-driven electrolyte design for lithium metal anodes.** *Proceedings of the National Academy of Sciences of the United States of America*  
Kim, S. C., Oyakhire, S. T., Athanitis, C., Wang, J., Zhang, Z., Zhang, W., Boyle, D. T., Kim, M. S., Yu, Z., Gao, X., Sogade, T., Wu, E., Qin, et al  
2023; 120 (10): e2214357120
- **Sensor-enabled Multilayer Artificial Intelligence Analysis for Predictive Wound Healing and Real-Time Patient Monitoring**  
Trotsyuk, A. A., Jing, S., Chen, K., Henn, D., Jiang, Y., Niu, S., Sivaraj, D., Nag, R., Snyder, M., bao, Z., Gurtner, G. C.  
WILEY.2023: 268-269
- **Interrogation of Wound Healing with Single Cell Analysis using a Wireless Smart Bandage**  
Trotsyuk, A. A., Jiang, Y., Niu, S., Chen, K., Henn, D., Sivaraj, D., Bao, Z., Gurtner, G. C.  
WILEY.2023: 270-271
- **Controlling the Stem Cell Environment Via Conducting Polymer Hydrogels to Enhance Therapeutic Potential** *ADVANCED MATERIALS TECHNOLOGIES*  
Santhanam, S., Feig, V. R., McConnell, K. W., Song, S., Gardner, E. E., Patel, J. J., Shan, D., Bao, Z., George, P. M.  
2023
- **A solvent-anchored non-flammable electrolyte** *MATTER*  
Huang, Z., Lai, J., Kong, X., Rajkovic, I., Xiao, X., Celik, H., Yan, H., Gong, H., Rudnicki, P. E., Lin, Y., Ye, Y., Li, Y., Chen, et al  
2023; 6 (2): 445-459
- **A universal interface for plug-and-play assembly of stretchable devices.** *Nature*  
Jiang, Y., Ji, S., Sun, J., Huang, J., Li, Y., Zou, G., Salim, T., Wang, C., Li, W., Jin, H., Xu, J., Wang, S., Lei, et al  
2023; 614 (7948): 456-462
- **Revealing the Multifunctions of Li3N in the Suspension Electrolyte for Lithium Metal Batteries.** *ACS nano*  
Kim, M. S., Zhang, Z., Wang, J., Oyakhire, S. T., Kim, S. C., Yu, Z., Chen, Y., Boyle, D. T., Ye, Y., Huang, Z., Zhang, W., Xu, R., Sayavong, et al  
2023
- **Effect of Molecular Weight on the Morphology of a Polymer Semiconductor-Thermoplastic Elastomer Blend** *ADVANCED ELECTRONIC MATERIALS*  
Pena-Alcantara, A., Nikzad, S., Michalek, L., Prine, N., Wang, Y., Gong, H., Ponte, E., Schneider, S., Wu, Y., Root, S. E., He, M., Tok, J., Gu, et al  
2023
- **A skin sensor that can rapidly recognize hand-based tasks with limited training** *NATURE ELECTRONICS*  
Kim, K., Bao, Z.  
2023
- **High luminescent polymers for stretchable displays.** *National science review*  
Zhang, Z., Bao, Z.  
2023; 10 (1): nwac093

- **A substrate-less nanomesh receptor with meta-learning for rapid hand task recognition** *NATURE ELECTRONICS*  
Kim, K., Kim, M., Pyun, K., Kim, J., Min, J., Koh, S., Root, S. E., Kim, J., Nguyen, B. T., Nishio, Y., Han, S., Choi, J., Kim, et al  
2022
- **Healing chronic wounds with a wireless smart bandage with integrated sensors and stimulators** *NATURE BIOTECHNOLOGY*  
Jiang, Y., Trotsyuk, A. A., Bao, Z.  
2022
- **Wireless, closed-loop, smart bandage with integrated sensors and stimulators for advanced wound care and accelerated healing.** *Nature biotechnology*  
Jiang, Y., Trotsyuk, A. A., Niu, S., Henn, D., Chen, K., Shih, C. C., Larson, M. R., Mermin-Bunnell, A. M., Mittal, S., Lai, J. C., Saberi, A., Beard, E., Jing, et al  
2022
- **UV-laser-machined stretchable multi-modal sensor network for soft robot interaction** *NPJ FLEXIBLE ELECTRONICS*  
Ham, J., Han, A., Cutkosky, M. R., Bao, Z.  
2022; 6 (1)
- **Investigation of the Structure of Atomically Dispersed Ni<sub>Nx</sub> Sites in Ni and N-Doped Carbon Electrocatalysts by <sup>61</sup>Ni Mossbauer Spectroscopy and Simulations.** *Journal of the American Chemical Society*  
Koshy, D. M., Hossain, M. D., Masuda, R., Yoda, Y., Gee, L. B., Abiose, K., Gong, H., Davis, R., Seto, M., Gallo, A., Hahn, C., Bajdich, M., Bao, et al  
2022
- **Fast-Charging of Hybrid Lithium-Ion/Lithium-Metal Anodes by Nanostructured Hard Carbon Host** *ACS ENERGY LETTERS*  
Gong, H., Chen, Y., Chen, S., Xu, C., Yang, Y., Ye, Y., Huang, Z., Ning, R., Cui, Y., Bao, Z.  
2022; 7 (12): 4417-4426
- **Tough-interface-enabled stretchable electronics using non-stretchable polymer semiconductors and conductors.** *Nature nanotechnology*  
Kang, J., Mun, J., Zheng, Y., Koizumi, M., Matsuhisa, N., Wu, H., Chen, S., Tok, J. B., Lee, G. H., Jin, L., Bao, Z.  
2022
- **Realizing Intrinsically Stretchable Semiconducting Polymer Films by Nontoxic Additives** *ACS MATERIALS LETTERS*  
Cheng, H., Zhang, S., Michalek, L., Ji, X., Luo, S., Cooper, C. B., Gong, H., Nikzad, S., Chiong, J. A., Wu, Y., Zheng, Y., Liu, Q., Zhong, et al  
2022; 4 (11): 2328-2336
- **Correlating Kinetics to Cyclability Reveals Thermodynamic Origin of Lithium Anode Morphology in Liquid Electrolytes.** *Journal of the American Chemical Society*  
Boyle, D. T., Kim, S. C., Oyakhire, S. T., Vila, R. A., Huang, Z., Sayavong, P., Qin, J., Bao, Z., Cui, Y.  
2022
- **Grazing-Incidence Texture Tomography and Diffuse Reflectivity Tomography of an Organic Semiconductor Device Array** *CHEMISTRYMETHODS*  
Smilgies, D., Koker, M. A., Li, R., Shaw, L., Bao, Z.  
2022; 2 (11)
- **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
- **A Hemispherical Image Sensor Array Fabricated with Organic Photo-memory Transistors.** *Advanced materials (Deerfield Beach, Fla.)*  
Kim, Y., Zhu, C., Lee, W., Smith, A., Ma, H., Li, X., Son, D., Matsuhisa, N., Kim, J., Bae, W., Cho, S. H., Kim, M., Kurosawa, et al  
2022: e2203541
- **Porous Dielectric Elastomer Based Flexible Multiaxial Tactile Sensor for Dexterous Robotic or Prosthetic Hands** *ADVANCED MATERIALS TECHNOLOGIES*  
Ham, J., Huh, T., Kim, J., Kim, J., Park, S., Cutkosky, M. R., Bao, Z.  
2022
- **Degradation and Speciation of Li Salts during XPS Analysis for Battery Research** *ACS ENERGY LETTERS*  
Yu, W., Yu, Z., Cui, Y., Bao, Z.  
2022; 7 (10): 3270-3275
- **Resolving Current-Dependent Regimes of Electroplating Mechanisms for Fast Charging Lithium Metal Anodes.** *Nano letters*



- Boyle, D. T., Li, Y., Pei, A., Vila, R. A., Zhang, Z., Sayavong, P., Kim, M. S., Huang, W., Wang, H., Liu, Y., Xu, R., Sinclair, R., Qin, et al  
2022
- **A flexible electronic strain sensor for the real-time monitoring of tumor regression.** *Science advances*  
Abramson, A., Chan, C. T., Khan, Y., Mermin-Bunnell, A., Matsuhisa, N., Fong, R., Shad, R., Hiesinger, W., Mallick, P., Gambhir, S. S., Bao, Z.  
2022; 8 (37): eabn6550
  - **Formation Mechanism of Flower-like Polyacrylonitrile Particles.** *Journal of the American Chemical Society*  
Gong, H., Ilavsky, J., Kuzmenko, I., Chen, S., Yan, H., Cooper, C. B., Chen, G., Chen, Y., Chiong, J. A., Jiang, Y., Lai, J., Zheng, Y., Stone, et al  
2022
  - **A low-power stretchable neuromorphic nerve with proprioceptive feedback (Aug, 10.1038/s41551022-00918-x, 2022) NATURE BIOMEDICAL ENGINEERING**  
Lee, Y., Liu, Y., Seo, D., Oh, J., Kim, Y., Li, J., Kang, J., Kim, J., Mun, J., Foudeh, A. M., Bao, Z., Lee, T.  
2022
  - **Tuning the Mechanical and Electric Properties of Conjugated Polymer Semiconductors: Side-Chain Design Based on Asymmetric Benzodithiophene Building Blocks** *ADVANCED FUNCTIONAL MATERIALS*  
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