

HANQING JIANG

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PROFESSIONAL EXPERIENCE

Chair Professor <i>School of Engineering</i> <i>Westlake University, Hangzhou, Zhejiang</i>	June. 2021- present
Professor <i>Mechanical and Aerospace Engineering</i> <i>Arizona State University, Tempe, Arizona</i>	Aug. 2016- May 2021
Associate Professor <i>Mechanical and Aerospace Engineering</i> <i>Arizona State University, Tempe, Arizona</i>	Aug. 2011-Aug. 2016
Assistant Professor <i>Mechanical and Aerospace Engineering</i> <i>Arizona State University, Tempe, Arizona</i>	Aug. 2006-Aug. 2011
Research Scientist <i>Department of Mechanical and Industrial Engineering</i> <i>University of Illinois, Urbana, Illinois</i>	Jul. 2005 - Aug. 2006
Postdoctoral Research Associate <i>Department of Mechanical and Industrial Engineering</i> <i>University of Illinois, Urbana, Illinois</i>	Jul. 2001 – Jul. 2005

EDUCATION

Ph.D. , Solid Mechanics	Tsinghua University, China	1996-2001
B.E. , Engineering Mechanics	Dalian University of Technology, China	1992-1996

HONORS AND AWARDS

- 2024 Member, European Academy of Sciences
- 2021 ASME Worcester Reed Warner Medal
- 2019 Member, ASU Chapter, National Academy of Inventors
- 2016 Fellow, The American Society of Mechanical Engineers
- 2014 Faculty Achievement Award (Best Innovation), Arizona State University
- 2009 NSF CAREER Award
- 2003 National Excellent Doctoral Dissertation Award, China

SOCIETAL LEADERSHIP

- 2024 Chair, Society of Engineering Science Annual Technical Meeting, Hangzhou, China
- 2024 Associate Editor of Science Advances
- 2020 Vice President-Elect, Society of Engineering Science (SES) (2021 Vice President, 2022 President, 2023 Past President)
- 2020 Chair, the Virtual Technical Meeting of SES
- 2018-2023 Member of Board of Directors, Society of Engineering Science
- 2019-2025 Member of Executive Committee, Materials Division, ASME (2024 Vice Chair, 2025 Chair)
- 2020-2023 ASME Robert Henry Thurston Lecture Award Committee
- 2014-present Editor of Extreme Mechanics Letters
- 2016-2018 Chair, Technical Committee of Nanomaterials for Energy, Materials Division, ASME
- 2015-2020 Editorial Board of Scientific Reports
- 2013-2015 Chair, Technical Committee of Elasticity, Applied Mechanics Division, ASME
- 2012-2013 Chair, Technical Committee of Mechanics of Soft Materials, Applied Mechanics Division, ASME

RESEARCH INTERESTS

- Origami and Kirigami-Inspired Mechanics of Metamaterials and Robotics
- Mechanics, Materials and Devices of Energy Storage
- Data-Driven Mechanics
- Mechanics and Materials of Gels
- Edible Electronics and Biomedical Devices
- Integrated Hard and Soft Materials for Flexible and Stretchable Electronics

ADVISING ACTIVITIES AT ARIZONA STATE UNIVERSITY

Graduated 13 PhD students and 12 MS students; advised 11 undergraduate students and 10 postdocs.

- Undergraduates: In total, 11 students, all in mechanical engineering. 7 for honors thesis. 4 minority students (2 females, 1 African, 1 Hispanic)
- Master students: In total, 12 students in mechanical engineering and aerospace engineering. 2 female students.
- PhD students: In total, 13 PhD students graduated with 8 in mechanical engineering, 3 in materials science and engineering (1 Native American), and 2 in chemical

engineering (1 female student). 3 on-going PhD students in mechanical engineering, and materials science and engineering (1 female student). Currently advising 11 more.

- Postdocs: Advised 10 in the past and currently advising 7 more.


















PEER-REFEREED JOURNAL PAPERS: PUBLISHED/ACCEPTED

Numeric summary of all peer-reviewed journal papers: 165 Peer-reviewed journal papers, including 1 in Science, 2 in Nature Nanotechnology, 1 in Nature Energy, 1 in Nature Machine Intelligence, 3 in PNAS, 4 in Nature Communications, 5 in Science Advances, 3 in Nano Letters, 4 in Advanced Materials, 2 in PRL, and 11 in JMPS.

(The major contributors are identified by an asterisk *; students from H. Jiang's group are **highlighted**; postdocs/visiting scholars from H. Jiang's group are underlined; corresponding authors are marked by ☒.)

165. S. An, X. Li, Z. Guo, Y. Huang, Y. Zhang, and **H. Jiang**☒, 2004, Energy-efficient dynamic 3D metasurfaces via spatiotemporal jamming interleaved assemblies for tactile interfaces, *Nature Communications*, DOI: 10.1038/s41467-024-51865-x
164. Z. Chen, X. Li; Y. Tang; Z. Huang, J. Huang, H. Liu, Y. Weng, Y. Zhu, J. Zhao, R. Tang, Z. Liu, K. Bao, J. Jian, Y. Ye, Y. Yun, L. Wang, C. Guo, H. Lin, **H. Jiang**, K. Si, W. Gong, L. Li☒, 2024, Implantation-assistance-free Flexible Waveguide Probe for Optogenetic Stimulation, *Cell Reports Physical Science* (in press).
163. Q. Guo, Yu Sun☒, T. Zhang, S. Xie, X. Chen, Z. Zhang☒, **H. Jiang**☒, and L. Yang☒, 2004, Bistable Insect-Scale Jumpers with Tunable Energy Barriers for Multimodal Locomotion, *Advanced Science*, DOI: 10.1002/advs.202404404.
162. Y. Qiu, F. Wang, Z. Zhang, K. Shi, Y. Song, J. Lu, M. Xu, M. Qian, W. Zhang, J. Wu, Z. Zhang, H. Chai, A. Liu, **H. Jiang**☒, and H. Wu☒, 2024, Quantitative Softness and Texture Bimodal Haptic Sensors for Robotic Clinical Feature Identification and Intelligent Picking, *Science Advances*, eadp0348.
161. S. An, Y. Cao, and **H. Jiang**☒, 2024, A Mechanically Robust and Facile Shape Morphing Using Tensile-Induced Buckling, *Science Advances*, 10, eado8431.
160. Y. Tang, J. Xu, Q. Liu, X. Hu, W. Xue, Z. Liu, Z. Lin, H. Lin, Y. Zhang, Z. Zhang☒, X. Ma☒, J. Wang☒, J. Zhong☒, D. Wang☒, **H. Jiang**☒, Y. Ma☒, 2024, Advancing Haptic Interfaces for Immersive and Commercialized Experiences in the Metaverse, *Device*, DOI: 10.1016/j.device.2024.100365.
159. S. Sun, M. Wang, **H. Jiang**, Y. Zhang, H. Qiao, and T.-Y. Zhang☒, 2024, Optimizing nanoporous metallic actuators through multiscale calculations and machine learning, *Journal of the Mechanics*
















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158. L. Chang, X. Li, Z. Guo, Y. Cao, Y. Lu, R. Garziera, and **H. Jiang**✉, 2024, On-demand Tunable Metamaterials Design for Noise Attenuation with Machine Learning, *Materials and Design*, DOI: 10.1016/j.matdes.2024.112685.
 157. C. Li*, Z. Huang, Z. Huang, Y. Wang✉, **H. Jiang**, 2024, Automated Identification of Differential-Variational Equations for Static Systems, *Journal of Applied Mechanics*, DOI: 10.1115/1.4063641.
 156. **L. Wu***, **Y. Lu***, **P. Li**, Y. Wang, J. Xue, X. Tian, **S. Ge**, **X. Li**, **Z. Zhai**, J. Lu, X. Lu, D. Li, and **H. Jiang**✉, 2023, Mechanical Metamaterials for Handwritten Digits Recognition, *Advanced Science*, DOI: 10.1002/advs.202308137.
 155. W. Zeng*, P. Wei, J. Chen, G. Wang, Y. Yan, H. Yu, C. Yang, G. Zhang, and **H. Jiang**✉, 2023, Ultra-stable Zinc Metal Anodes Enabled by Uniform Zn Deposition on A Preferential Crystal Plane, *Advanced Energy Materials*, DOI: 10.1002/aenm.202302205.
 154. Xiaowen Li*, Lige Chang, Yajun Cao, Junqiang Lu, Xiaoli Lu, and **H. Jiang**✉, 2023, Physics Supervised Deep Learning-based Optimization (PSDLO) with Accuracy and Efficiency, *Proceedings of the National Academy of Sciences of the United States of America*, DOI: 10.1073/pnas.2309062120.
 153. C. Zhang*, Z. Zhang*, Y. Peng, **Y. Zhang**, S. An, Y. Wang, **Z. Zhai**, Y. Xu✉, and **H. Jiang**✉, 2023, Plug & Play Origami Modules with All-Purpose Deformation Modes, *Nature Communications*, DOI: 10.1038/s41467-023-39980-7.
 152. Y. H. Wang*, Z. L. Xu, Y. Wang, R. H. Huan, **H. Jiang**, K. C. Chuang✉, 2023, Coiling an Optical Fiber for Long-Range Dynamic Displacement and Force Sensing, *Extreme Mechanics Letters*, DOI: 10.1016/j.eml.2023.102032.
 151. Z. Hu*, **Y. Zhang***, **H. Jiang**✉, and J. Lv✉, 2023, Bioinspired Helical-Artificial-Fibrous-Muscle Structured Tubular Soft Actuators, *Science Advances*, DOI: 10.1126/sciadv.adh3350.
 150. Z. Zhang*, Z. Xu*, L. Emu, P. Wei, **S. Chen**, **Z. Zhai**, L. Kong, Y. Wang, and **H. Jiang**✉, 2023, Active Mechanical Haptics with High-Fidelity Perceptions for Immersive Virtual Reality, *Nature Machine Intelligence*, DOI: 10.1038/s42256-023-00671-z.
 149. Z. Zhang*, Y. Long*, G. Chen, Q. Wu, H. Wang✉, and **H. Jiang**✉, 2023, Soft and Lightweight Fabric Enables Powerful and High-Range Pneumatic Actuation, *Science Advances*, DOI: 10.1126/sciadv.adg1203.
 148. J. Huang*, Z. Zhang, **H. Jiang**✉, 2023, Edible Hydrogels with Shrinkage Tolerance in Acids and Stomach-Friendly Mechanical Moduli, *Applied Materials Today*, DOI: 10.1016/j.apmt.2023.101786.
 147. Z. Yang*, J. Zhao*, C. Liang*✉, **H. Jiang**✉, 2023, Materials and device design for epidermal UV

- sensors with real-time, skin-color specific, and naked-eye quasi-quantitative monitoring capabilities, *Advanced Materials Technologies*, DOI: 10.1002/admt.202201481.
146. Z. Huang*, S. Huang, J. Li, Y. Wang , **H. Jiang** , 2023, Extracting Conservative Equations from Nonconservative State Data, *Journal of the Mechanics and Physics of Solids*, DOI: 10.1016/j.jmps.2022.105127.
 145. L. Yang*, X. Hong*, J. Li, C.-Y. Ji, Y. Han, S. Chen, **H. Jiang**, W.-L Song, H.-S. Chen , and D. Fang, 2022, Rechargeable Metasurfaces for Dynamic Color Display Based on a Compositional and Mechanical Dual-Altered Mechanism, *Research*, DOI: 10.34133/2022/9828757.
 144. Y.-H. Wang*, Z.-L. Xu, Y. Wang, **H. Jiang**, and K.-C. Chuang , 2022, A buckling-induced wavy optical fiber attenuator, *Optics Letters*, 47(19), 4845-4848.
 143. C. Liang*, Z. Yang*, and **H. Jiang** , 2022, A film-lever actuated switch technology for multifunctional, on-demand, and robust manipulation of liquids, *Nature Communications*, DOI: 10.1038/s41467-022-32676-4.
 142. X. Shang*, N. Wang , Z. Wang, **H. Jiang**, Y. Jia , N. Zhou , and M. Qiu , 2022, Customizable and highly sensitive 3D micro-springs produced by two-photon polymerizations with improved post-treatment processes, *Applied Physics Letters*, DOI: 10.1063/5.0088481.
 141. T. Zhao*, **Y. Zhang**, Y. Fan, J. Wang, **H. Jiang**, J. Lv , 2022, Light-modulated liquid crystal elastomer actuator with multimodal shape morphing and multifunction, *Journal of Materials Chemistry C*, DOI: 10.1039/d1tc06171b.
 140. L. Wu*, **Z. Zhai**, X. Zhao, X. Tian, D. Li, Q. Wang, and **H. Jiang** , 2021, Modular Design for Acoustic Metamaterials: Low-frequency Noise Attenuation, *Advanced Functional Materials*, DOI: 10.1002/adfm.202105712.
 139. **H. Jiang** , 2021, EML webinar overview: Origami-based metamaterials, *Extreme Mechanics Letters*, DOI: 10.1016/j.eml.2021.101543
 138. W. Liu*, **H. Jiang**, and Y. Chen , 2021, 3D Programmable metamaterials based on reconfigurable mechanism modules, *Advanced Functional Materials*, DOI: 10.1002/adfm.202109865.
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 136. Z. Huang*, C. Li, Z. Huang, Y. Wang , **H. Jiang** , 2021, AI-Timoshenko: Automatedly Discovering Simplified Governing Equations for Applied Mechanics Problems from Simulated Data, *Journal of Applied Mechanics*, **88**, 101006.
 135. L. Wu*, Y. Wang, K. Chuang, F. Wu, Q. Wang, W. Lin, **H. Jiang** , 2021, A brief review of dynamic mechanical metamaterials for mechanical energy manipulation, *Materials Today*, doi.org/10.1016/j.mattod.2020.10.006.

134. C. J. Li*, Z. L. Huang, Y. Wang✉, and **H. Jiang**, 2020, Rapid identification of switched systems: A data-driven method in variational framework, *Science China Technological Sciences*, 1-9.
133. **Z. Zhai***, Y. Wang, K. Lin, L. Wu, **H. Jiang**✉, 2020, In Situ Stiffness Manipulation Using Elegant Curved Origami, *Science Advances*, **6**, doi.org/10.1126/sciadv.abe2000. [Associated Press](#), [Science Daily](#), [Yahoo News](#), *top 5% of all research outputs scored by Altmetric*.
132. X. Cao*, Y. Lu*, **H. Jiang**, and F. Wang✉, 2020, Phase-field modeling of chemo-mechanical relaxation effect on the fracture tolerance of a tin-based electrode, *Mechanics of Materials*, doi.org/10.1016/j.mechmat.2020.103502.
131. Y. Wu✉, D. Ye, Y. Shan, S. He, Z. Su, J. Liang, J. Zheng, Z. Yang, **H. Yang**, **W. Xu**, and **H. Jiang**✉, 2020, Edible and Nutritive Electronics: Materials, Fabrications, Components and Applications, *Advanced Materials Technologies*, doi.org/10.1002/admt.202000100.
130. Y. Tian*, Y. Wang*✉, **H. Jiang**, Z. Huang, I. Elishakoff, G. Cai, 2020, Stationary response probability density of nonlinear random vibrating systems: a data-driven method, *Nonlinear Dynamics*, doi.org/10.1007/s11071-020-05632-4.
129. L. Wu*, Y. Wang, **Z. Zhai**, Y. Yang, **D. Krishnaraju**, J. Lu, F. Wu, Q. Wang✉, **H. Jiang**✉, 2020, Mechanical Metamaterials for Full-Band Mechanical Wave Shielding, *Applied Materials Today*, **20**,100671.
128. L. Wu*, L. Liu, Y. Wang✉, **Z. Zhai**, H. Zhuang, **D. Krishnaraju**, Q. Wang, **H. Jiang**✉, 2020, A machine learning-based method to design modular metamaterials, *Extreme Mechanics Letters*, **36**, 100657.
127. Z. Huang, Y. Tian, C. Li, G. Lin, L. Wu, Y. Wang*✉, **H. Jiang**✉, 2020, Data-Driven Automated Discovery of Variational Laws Hidden in Physical Systems, *Journal of the Mechanics and Physics of Solids*, **137**, 103871.
126. Z. Yang*, **Z. Zhai***, Z. Song, Y. Wu✉, J. Liang, Y. Shan, J. Zheng, **H. Jiang**✉, 2020, Conductive and Elastic 3D Helical Fibers for use in Washable and Wearable Electronics, *Advanced Materials*, doi.org/10.1002/adma.201907495.
125. B. Liu*, Y. Jia, J. Li, **H. Jiang**, S. Yin, J. Xu✉, 2020, Multiphysics coupled computational model for commercialized Si/graphite composite anode, *Journal of Power Sources*, doi.org/10.1016/j.jpowsour.2019.227667.
124. D. Wu*, J. Song*, **Z. Zhai***, M. Hua, C. Kim, I. Frenkel, **H. Jiang**, X. He✉, 2019, Visualizing morphogenesis through instability formation in 4-D printing, *ACS Applied Materials & Interfaces*, **11**(50):47468-47475. doi: 10.1021/acsami.9b19730.
123. X. Qian*, Y. Zhao*, Y. Alsaied*, **X. Wang***, M. Hua, T. Galy, H. Gopalakrishna, Y. Yang, J. Cui, N. Liu, M. Marszewski, L. Pilon, **H. Jiang**, X. He✉, 2019, Artificial phototropism for omnidirectional tracking and harvesting of light, *Nature Nanotechnology*, **14**, 1048-1055.

122. **B. Liu***, X. Wang, H.-S. Chen, S. Chen, H. Yang, J. Xu ☒, **H. Jiang** ☒, and D.-N. Fang, 2019, A Simultaneous Multiscale and Multiphysics Model and Numerical Implementation of A Core-Shell Model for Lithium-Ion Full-Cell Batteries, *Journal of Applied Mechanics*, 86, 041005.
121. L. Yang, H.-S. Chen* ☒, **H. Jiang**, W.-L. Song ☒, F.-N. Fang, 2019, Lithium Redistribution Around the Crack Tip of Lithium-Ion Battery Electrodes, *Scripta Materialia*, 167, 11-15.
120. Z. Chen*, T. Wu, G. Nian, Y. Shan, X. Liang, **H. Jiang** ☒, **S. Qu** ☒, 2019, Ron Resch Origami Pattern Inspired Energy Absorption Structures, *Journal of Applied Mechanics*, 86, 011005.
119. **X. Wang*** ☒, **H. Jiang**, 2018, Design of Origami Fin for Heat Dissipation Enhancement, *Applied Thermal Engineering*, 145, 674-684.
118. **X. Wang***, **Z. Zhai***, Y. Chen, and **H. Jiang** ☒, 2018, A Robust and Versatile Finite Element Implementation to Study the Time-Dependent Behaviors of Responsive Gels, *Extreme Mechanics Letters*, 22, 89-97.
117. N. Li*, Y. Xin, H. Chen ☒, S. Jiao, **H. Jiang**, W.-L. Song ☒, D.-N. Fang, 2018, Thickness evolution of graphite-based cathodes in the dual ion batteries via in operando optical observation, *Journal of Energy Chemistry*, DOI: 10.1016/j.jechem.2018.03.003.
116. L. Yang*, H.-S. Chen ☒, **H. Jiang**, Y.-J. Wei, W.-L. Song ☒, and D.-N. Fang, 2018, Failure mechanisms of 2D silicon film anodes: in situ observations and simulations on crack evolution, *Chemical Communications*, 54, 3997-4000.
115. **X. Wang***, **W. Zeng***, L. Hong, **W. Xu**, **H. Yang**, H. Duan ☒, M. Tang ☒, and **H. Jiang** ☒, 2018, Stress-driven lithium dendrite growth mechanism and dendrite mitigation by electroplating on soft substrates, *Nature Energy*, 3, 227-235. Reported by [Lithium News](#), [Design News](#), [Futurity](#), [American Ceramic Society](#), [The Engineer](#), [Engineering 360](#), etc. *SCI Highly Cited Paper*
114. **Z. Zhai***, Y. Wang, and **H. Jiang** ☒, 2018, Origami-inspired, on-demand deployable and collapsible mechanical metamaterials with tunable stiffness, *Proceedings of the National Academy of Sciences of the United States of America*, 115 (9) 2032-2037.
113. Y. Xu*, O. Ghag, M. Reimann, P. Sitterle, **P. Chatterjee**, E. Nofen, H. Yu, **H. Jiang**, and L. L. Dai ☒, 2018, Development of visible-light responsive and mechanically enhanced “smart” UCST interpenetrating network hydrogels, *Soft Matters*, 14, 151-160.
112. K. Yuriar-Arredondo*, M. R. Armstrong, B. Shan, **W. Zeng**, **W. Xu**, **H. Jiang**, B. Mu ☒, 2018, Nanofiber-based Matrimid organogel membranes for battery separator, *Journal of Membrane Science*, 546, 158-164.
111. **X. Wang***, S. S. Singh*, **T. Ma**, **C. Lv**, N. C. Chawla, **H. Jiang** ☒, 2017, Quantifying Electrochemical Reactions and Properties of Amorphous Silicon in a Conventional Lithium-Ion Battery Configuration, *Chemistry of Materials*, 29, 5831-5840, DOI: 10.1021/acs.chemmater.7b00701.

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109. T.-G. Yoon*, **H. Jiang** ✉, and D.-Y. Khang ✉, 2017, Experimental investigation on the mechanical buckling of one-dimensional Si nanoribbons with a thickness contrast, *Thin Solid Films*, 10.1016/j.tsf.2017.08.042.
108. **P. Chatterjee**, E.M. Nofen, **W. Xu**, C. Hom, **H. Jiang**, L. L. Dai ✉, 2017, Pyrrole-based poly(ionic liquids) as efficient stabilizers for formation of hollow multi-walled carbon nanotubes particles, *Journal of Colloid and Interface Science*, 504, 140-148.
107. **Z. Song***, **C. Lv***, M. Liang, V. Sanphuang, K. Wu, B. Chen, Z. Zhao, J. Bai, **X. Wang**, J. L. Volakis, L. Wang, X. He, Y. Yao, S. Tongay, and **H. Jiang** ✉, 2016, Microscale Silicon Origami, *Small*, DOI: 10.1002/sml.201601947.
106. **X. Wang***, **W. Xu***, **P. Chatterjee***, **C. Lv**, J. Popovich, **Z. Song**, L. Dai, M. Y. S. Kalani, S. E. Haydel, and **H. Jiang** ✉, 2016, Food Materials Based Edible Supercapacitors, *Advanced Materials Technologies*, DOI: 10.1002/admt.201600059. Reported by [Smithsonian Magazine](#), [Materials View](#), [Discover Magazine](#), [Tech Insider](#), [Medical Design Briefs](#), [AZ PBS](#), etc.
105. J. Ye*, **Y. An***, E. Montalvo, P. G. Campbell, M. A. Worsley, I. C. Tran, Y. Liu, B. C. Wood, J. Biener, **H. Jiang**, M. Tang, Y. M. Wang ✉, 2016, Solvent-directed sol-gel assembly of 3-dimensional graphene-tented metal oxides and strong synergistic disparities in lithium storage, *Journal of Materials Chemistry A*, 4, 4032-4043.
104. A. Mamidanna*, **Z. Song***, **C. Lv**, C. S. Lefky, **H. Jiang**, and O. J. Hildreth ✉, 2016, Printing Stretchable Spiral Interconnects Using Reactive Ink Chemistries, *ACS Applied Materials & Interfaces*, DOI: 10.1021/acsami.6b03922.
103. A. Mamidanna, **Z. Song**, **C. Lv**, C. S. Lefky, **H. Jiang**, and O. Hildreth ✉, 2016, Inkjet Printed Spiral Stretchable Electronics Using Reactive Ink Chemistries, *MRS Advances*, 1, 3465-3470.
102. **P. Chatterjee***, A. Dai, H. Yu, **H. Jiang**, L. L. Dai ✉, 2015, Thermal and mechanical properties of poly(N-isopropylacrylamide)-based hydrogels as a function of porosity and medium change, *Journal of Applied Polymer Science*, 132, DOI: 10.1002/app.42776
101. **Z. Song***, **X. Wang***, **C. Lv**, **Y. An**, M. Liang, **T. Ma**, D. He, Y.-J. Zheng, S.-Q. Huang, H. Yu, and **H. Jiang** ✉, 2015, Kirigami-based Stretchable Lithium-Ion Batteries, *Scientific Reports*, DOI: 10.1038/srep10988. Reported by [The Times](#), [CBS News](#), [MIT Tech Review](#), [Daily Mail](#), [Discovery News](#), [Popular Science](#), [Yahoo News](#), [Popular Mechanics](#), [Christian Science Monitor](#), etc.
100. **Y. An***, B. C. Wood, J. Ye, Y.-M. Chiang, Y. M. Wang, M. Tang ✉, and **H. Jiang** ✉, 2015, Mitigating Mechanical Failure of Crystalline Silicon Electrodes for Lithium Batteries by Morphological Design, *Physical Chemistry Chemical Physics*, DOI: 10.1039/c5cp01385b.




















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





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PATENTS

A. Issued Patents:

1. **H. Jiang**, Z. Zhai, **US 11,964,384 B2**, Curved origami-based metamaterials for in situ stiffness manipulation.
2. **H. Jiang**, H. Yang, W. Xu, **US 11,712,204 B2**, Swallowable, food-based, digestible wireless device for measuring gastric pH.
3. L. Wu, **H. Jiang**, Y. Wang, Q. Wang, **US 11,530,731 B2**, Mechanical metamaterials as an energy shield.
4. **H. Jiang**, W. Zeng, X. Wang, **US 11,342,563 B2**, Three-dimensional soft electrode for lithium metal batteries.
5. **H. Jiang**, Z. Zhai, **US 11,267,613 B2**, Origami-based collapsible and watertight cases.
6. **H. Jiang**, Z. Zhang, Z. Zhang, Y. Xu, **CN 116833979 A**, Driver based on paper folding configuration, mechanical arm and robot.
7. **H. Jiang**, J. Huang, R. Qian, **CN 115477783 B**, Method for preparing chitin-based superabsorbent material, gel and application of gel.
8. W. Xu, H. Yang, **H. Jiang**, D. Faigel, **CN 111601518 A**, Stomach pH wireless detection system prepared on the basis of edible digestible materials.
9. **H. Jiang**, H. Yang, D. Faigel, W. Xu, **US 10,842,438 B2**, Swallowable, food-based, digestible wireless device for measuring gastric pH.
10. **H. Jiang**, C. Lv, H. Yu, **US 10,660,200 B2**, Archimedean Spiral Design for Deformable Electronics.
11. **H. Yu**, H. Jiang, **US 10,502,991 B2**, Origami Displays and Methods for Their Manufacture.
12. **H. Jiang**, P. Chatterjee, W. Xu, X. Wang, **US 10,468,203 B2**, Edible Supercapacitors.
13. **H. Jiang**, P. Chatterjee, W. Xu, X. Wang, **CN 108140497**, Edible Supercapacitors.

14. **H. Jiang**, Z. Song, H. Yu, X. Wang, **US 10,418,664 B2**, Stretchable Batteries.
15. J. A. Rogers, M. Meitl, Y. Sun, H.-C. Ko, A. Carlson, W.-M. Choi, M. Stoykovich, **H. Jiang**, Y. Huang, R. Nuzzo, Z. Zhu, E. Menard, D.-Y. Khang, **US 10,355,113 B2**, Controlled buckling structures in semiconductor interconnects and nanomembranes for stretchable electronics.
16. **H. Jiang**, H. Yu, Z. Song, **US 10,153,519 B2**, Deformable Origami Batteries.
17. **H. Jiang**, C. Lv, H. Yu, **CN 107431059 A**, Archimedean Spiral Design for Deformable Electronics.
18. H. Yu, **H. Jiang**, H. Liang, T. Ma, **US 10,139,295 B2**, Methods of In-Plane Strain Measurement of a Substrate.
19. H. Yu, R. Windhorst, D. Baluch, **H. Jiang**, L. Dai, **US 9,711,065 B2**, Responsive Dynamic Three-Dimensional Tactile Display using Hydrogel.
20. **H. Jiang**, H. Yu, G. Konjevod, Y. Xu, **US 9,706,646 B2**, Origami Enabled Manufacturing Systems and Methods.
21. J. A. Rogers, M. Meitl, Y. Sun, H.-C. Ko, A. Carlson, W.-M. Choi, M. Stoykovich, **H. Jiang**, Y. Huang, R. Nuzzo, Z. Zhu, E. Menard, D.-Y. Khang, **US 9,324,733 B2**, Controlled buckling structures in semiconductor interconnects and nanomembranes for stretchable electronics.
22. **H. Jiang**, H. Yu, C. Yu, K. O'Brien, Y.-H. Zhang, **US 8,792,169 B2**, Tunable Optical Gratings Based on Buckled Nano-Scale Thin Films on Transparent Elastomeric Substrates.
23. J. A. Rogers, M. Meitl, Y. Sun, H.-C. Ko, A. Carlson, W.-M. Choi, M. Stoykovich, **H. Jiang**, Y. Huang, R. Nuzzo, Z. Zhu, E. Menard, D.-Y. Khang, **US 8,729,524 B2**, Controlled buckling structures in semiconductor interconnects and nanomembranes for stretchable electronics.
24. S. O'Rourke, D. Loy, **H. Jiang**, **US 8,685,201 B2**, Assemblies and methods for reducing warp and bow of a flexible substrate during semiconductor processing.
25. J. A. Rogers, R. Nuzzo, Y. Huang, M. Meitl, Y. Sun, H.-C. Ko, D. Y. Khang, **H. Jiang**, M. Stoykovich, A. Carlson, **US 8,217,381 B2**, Controlled Buckling Structures in Semiconductor Interconnects and Nanomembranes for Stretchable Electronics.

B. Pending Patents (partial list):

26. K. Wei, H. Han, **H. Jiang**, S. Li, **CN 117530654**, Real-time double-eye pupil examination system and detection method.
27. H. Han, **H. Jiang**, W. Xu, S. Li, **CN 117158886**, Visual field defect detection system and method based on eye movement tracking.
28. **H. Jiang**, J. Huang, R. Qian, **CN 116114888**, Preparation method of konjac composite xerogel with rapid swelling property.
29. **H. Jiang**, J. Huang, R. Qian, **CN 115819826**, Preparation method of cross-linked konjac xerogel with high water absorbability.

30. **H. Jiang**, Z. Zhang, L. Emu, Z. Xu, **US 18284847**, Curved Origami-based Metamaterial, Manufacturing Method of the Same, Curved Origami-based Haptic Module and Method for Producing Active Mechanical Haptics.
31. **H. Jiang**, Z. Zhang, L. Emu, Z. Xu, **US 18284842**, Curved Origami Contact Members, Devices and Systems used for Active Mechanical Haptics.
32. **H. Jiang**, Z. Zhang, Y. Long, G. Chen, H. Wang, **CN 116460836**, Soft driver and manufacturing method thereof.
33. G. Chen, Y. Long, H. Wang, **H. Jiang**, Z. Zhang, **CN 116277121**, Flexible pneumatic soft gripper with variable length.
34. **H. Jiang**, W. Zeng, H. Zhao, W. Xu, C. Zhong, L. Mang, **WO 2023035222**, Smart Diaper Embedded with Wetness Triggered Sensorial Battery and Wireless Communication System.
35. **H. Jiang**, C. Liang, S. Xu, **WO 2023035224**, Fluid Analyzing System Using Film-Lever Actuated Switches.
36. **H. Jiang**, J. Huang, R. Qian, **CN 115477783**, Method for preparing chitin-based superabsorbent material, gel and application of gel.
37. **H. Jiang**, C. Liang, **US 20220395203**, Wearable, Continuous Biological Fluid Monitoring System.
38. **H. Jiang**, J. Huang, **US 18573887**, Chitin-based Superabsorbent Materials.
39. **H. Jiang**, Z. Zhai, **63/085,741**, Curved Origami-Based Metamaterials for in situ Stiffness Manipulation.
40. **H. Jiang**, H. Yang, D. Faigel, W. Xu, **US 2019/0254608 A1**, Swallowable, Food-Based, Digestible Wireless Device for Measuring Gastric pH.
41. **H. Jiang**, W. Xu, H. Yang, W. Zeng, H. Yu, **PCT/US2018/031900**, Devices, Systems, and Methods for Doing Something Useful.
42. L. Wu, **H. Jiang**, Q. Wang, Y. Wang, **62/866,451**, Mechanical Metamaterials as An Energy Shield.
43. **H. Jiang**, Z. Zhai, **62/625,774**, Origami-Based Collapsible and Watertight Cases.