Chuanqian Shi

Assistant Professor
Center for Mechanics Plus Under Extreme Environment
512 Longsai Science Buliding
Ningbo University
Ningbo, Zhejiang, China 315211
Tel: 151-831-4155
Email: shichuanqian@nbu.edu.cn
chuanqian.shi1990@gmail.com

EDUCATION

- Ph.D., Solid Mechanics, Tongji University, China, 3/2021
  Advisor: Guo-hua Nie, Jianliang Xiao
- Ph.D. visiting student, Mechanical Engineering, University of Colorado Boulder, 11/2019 – 10/2017
  Advisor: Jianliang Xiao
- B.S., Aerospace Engineering, North Western Polytechanical University, China, 7/2013
  Advisor: Chao Xu

PROFESSIONAL EXPERIENCE

- 2022 – present, *Assistant Professor*, Center for Mechanics Plus Under Extreme Environment, Department of Mechanical Engineering and Mechanics, Ningbo University
- 09/2021 – 07/2022, *Visiting Research Associate*, Department of Engineering Mechanics, Zhejiang University
  Advisor: Jizhou Song
- 03/2020 – 03/2021, *Graduate Research Assistant*, Department of Engineering Mechanics, Tongji University
- 03/2017 – 07/2017, *Teaching Assistant*, Department of Engineering Mechanics, Tongji University

AWARDS & HONORS

- Excellent Doctoral Thesis Award (only 1 awarded in the School of Mechanics Discipline each year), Shanghai Society of Theoretical and Applied Mechanics, 2021
- Excellent Doctoral Thesis Award, Tongji University, 2021
- Outstanding Ph. D. Graduate, Tongji University, 2021
- ASME International Mechanical Engineering Congress & Exposition Travel Grant, AMSE Committee, 2019
- School Fellowship of Tongji University, 2017
- The China Scholarship Council Grant, University of Colorado Boulder, 2017 - 2019

ACADEMIC SERVICE & ACTIVITIES

REVIEWE

Nano Energy
EAI QSHINE 2023 - 19th EAI International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness

CONFERENCE ORGANIZATION

[1] Organizer, "The 118th Youth Academic Salon of The Chinese Society of Theoretical and Applied Mechanics", December 16-18, 2022, Virtual conference

[2] Organizer, "Mechanics and Materials of Soft Electronics", *IUTAM-SMM 2023*, December 6-8, 2023, Ningbo, Zhejiang, China

MEMBERSHIP

The Chinese Society of Theoretical and Applied Mechanics

NINGBO UNIVERSITY SERVICE

Department of Mechanical Engineering and Applied Mechanics

Department Undergraduate Committee (2022-present)

TEACHING & STUDENT GUIDANCE ACTIVITIES

STUDENT SUPERVISION

PhD Students

Jie Yu, Applied Mechanics (co-advising with J. Lin) (12/2023 – Present)

MS Students

Jie Yu, Applied Mechanics (co-advising with J. Lin) (9/2022 – 12/2023)

Jialin Zhang, Mechanical Engineering (co-advising with C. Zhang) (9/2023 – Present)

Yuquan Sun, Mechanical Engineering (9/2023 – Present)

Qiulin Li, Mechanical Engineering (co-advising with J. Lin) (9/2023 – Present)

Beifeng Lou, Mechanical Engineering (co-advising with J. Lin) (9/2023 – Present)

BS Students

Shaoxuan Nie, Applied Mechanics (9/2022 – 6/2023)

GRANT

The National Natural Science Foundation of China (2024-2027, 2024-2026, 2020-2023).

Zhejiang Provincial Natural Science Foundation of China (2023-2025)

PATENT

[P2] J. Xiao, W. Zhang, C. Shi, Z. Zou, "STRETCHABLE, REHEALABLE, RECYCLABLE AND RECONFIGURABLE INTEGRATED STRAIN SENSOR", US Patent App. 17/574,880

[P1] J. Xiao, W. Zhang, C. Shi, Z. Zou, "SELF-HEALABLE, RECYCLABLE, AND RECONFIGURABLE WEARABLE ELECTRONICS DEVICE", WO Patent 2022098892A1

REFEREED JOURNAL PUBLICATIONS (* as corresponding author)

[J15] Shi, X.; Wei, Y.; Yan, R.; Hu, L.; Zhi, J.; Tang, B.; Li, Y.; Yao, Z.; Shi, C.*; Yu, H.-D.*; Huang, W*. Leaf Surface-Microstructure Inspired Fabrication of Fish Gelatin-Based Triboelectric Nanogenerator. Nano Energy 2023, 109, 108231. https://doi.org/10.1016/j.nanoen.2023.108231.

[J14] Hu, L.; Chee, P. L.; Sugiarto, S.; Yu, Y.; Shi, C.; Yan, R.; Yao, Z.; Shi, X.; Zhi, J.; Kai, D.; Yu, H.; Huang, W. Hydrogel-Based Flexible Electronics. Advanced Materials 2023, 35 (14), 2205326. https://doi.org/10.1002/adma.202205326.

[J13] Wei, Y.; Shi, X.; Yao, Z.; Zhi, J.; Hu, L.; Yan, R.; Shi, C.*; Yu, H.-D.*; Huang, W*. Fully Paper-Integrated Hydrophobic and Air Permeable Piezoresistive Sensors for High-Humidity and Underwater Wearable Motion Monitoring. npj Flex Electron 2023, 7 (1), 13. https://doi.org/10.1038/s41528-023-00244-5.

[J12] Byun, S.; Yun, J. H.; Heo, S.; Shi, C.; Lee, G. J.; Agno, K.; Jang, K.; Xiao, J.; Song, Y. M.; Jeong, J. Self-Cooling Gallium-Based Transformative Electronics with a Radiative Cooler for Reliable Stiffness Tuning in Outdoor Use. Advanced Science 2022, 9 (24), 2202549. https://doi.org/10.1002/advs.202202549.

[J11] Luo, H.; Li, C.; Shi, C.; Nie, S.; Song, J. Switchable Dry Adhesive Based on Shape Memory Polymer with Hemispherical Indenters for Transfer Printing. Theoretical and Applied Mechanics Letters 2021, 11 (6), 100308. https://doi.org/10.1016/j.taml.2021.100308.

[J10] Shi, C.; Zhao, Y.; Zhu, P.; Xiao, J.; Nie, G. Highly Stretchable and Rehealable Wearable Strain Sensor Based on Dynamic Covalent Thermoset and Liquid Metal. Smart Mater. Struct. 2021, 30 (10), 105001. https://doi.org/10.1088/1361-665X/ac1b3a.

[J9] Zhu, P.; Shi, C.; Wang, Y.; Wang, Y.; Yu, Y.; Wang, Y.; Deng, Y.; Xiao, J. Recyclable, Healable, and Stretchable High-Power Thermoelectric Generator. Advanced Energy Materials 2021, 11 (25), 2100920. https://doi.org/10.1002/aenm.202100920.

[J8] Lu, H.; Zou, Z.; Wu, X.; Shi, C.; Liu, Y.; Xiao, J. Biomimetic Prosthetic Hand Enabled by Liquid Crystal Elastomer Tendons. Micromachines 2021, 12 (7), 736. https://doi.org/10.3390/mi12070736.

[J7] Lu, H.; Zou, Z.; Wu, X.; Shi, C.; Xiao, J. Fabrication and Characterization of Highly Deformable Artificial Muscle Fibers Based on Liquid Crystal Elastomers. Journal of Applied Mechanics 2021, 88 (4), 041003. https://doi.org/10.1115/1.4049165.

[J6] Ren, W.; Sun, Y.; Zhao, D.; Aili, A.; Zhang, S.; Shi, C.; Zhang, J.; Geng, H.; Zhang, J.; Zhang, L.; Xiao, J.; Yang, R. High-Performance Wearable Thermoelectric Generator with Self-Healing, Recycling, and Lego-like Reconfiguring Capabilities. Sci. Adv. 2021, 7 (7), eabe0586. https://doi.org/10.1126/sciadv.abe0586.

[J5] Shi, C.; Zou, Z.; Lei, Z.; Zhu, P.; Nie, G.; Zhang, W.; Xiao, J. Stretchable, Rehealable, Recyclable, and Reconfigurable Integrated Strain Sensor for Joint Motion and Respiration Monitoring. Research 2021, 2021, 2021/9846036. https://doi.org/10.34133/2021/9846036.

------ reported by UPI, Science Daily, EurekAlert!, MSN, Science News, Phys.org, CNET, TechXplore, Daily Camera, CU Boulder Today, Daily Mail (UK), The Independent (UK), The Telegraph (UK), BBC Science Focus (UK), Polymer-China, the Irish News (Ireland), alkhaleej today(UAE), East Coast Daily (IN), the News (PK), etc.

[J4] Shi, C.; Zou, Z.; Lei, Z.; Zhu, P.; Zhang, W.; Xiao, J. Heterogeneous Integration of Rigid, Soft, and Liquid Materials for Self-Healable, Recyclable, and Reconfigurable Wearable Electronics. Sci. Adv. 2020, 6 (45), eabd0202. https://doi.org/10.1126/sciadv.abd0202.

[J3] Shi, C.; Zou, Z.; Lei, Z.; Wu, X.; Liu, Z.; Lu, H.; Zhang, W.; Xiao, J. Investigating the Self-Healing of Dynamic Covalent Thermoset Polyimine and Its Nanocomposites. Journal of Applied Mechanics 2019, 86 (10), 101005. https://doi.org/10.1115/1.4044088.

[J2] Hafeez, H.; Shi, C.; Lee, C. M.; Periyanayagam, J. J.; Kim, D. H.; Song, M.; Kim, C.-S.; Zou, Z.; Xiao, J.; Ryu, S. Y. Improved Design of Highly Efficient Microsized Lithium-Ion Batteries for Stretchable Electronics. J. Micromech. Microeng. 2019, 29 (7), 075008. https://doi.org/10.1088/1361-6439/ab1d97.

[J1] Justin Jesuraj, P.; Shi, C.; Kim, D. H.; Hafeez, H.; Lee, J. C.; Lee, W. H.; Choi, D. K.; Zou, Z.; Xiao, J.; Min, J.; Song, M.; Kim, C. S.; Ryu, S. Y. Direction-Dependent Stretchability of AgNW Electrodes on Microprism-Mediated Elastomeric Substrates. AIP Advances 2018, 8 (6), 065227. https://doi.org/10.1063/1.5026742.

CONFERENCE PRESENTATIONS

[C5] C. Shi, J. Xiao, Solid-liquid-elastic Heterogeneous Integrated Multi-functional Wearable Electronics, *Soft Materials and Mechanics Conference 2023*, Nov 10-12, 2023, Hangzhou, China

[C4] C. Shi, Invited talk, Heterogeneous Integrated Multifunctional Wearable Electronics, *The 118th Youth Academic Salon of The Chinese Society of Theoretical and Applied Mechanics*, Dec 16-18, 2022, Virtual conference

[C3] C. Shi, J. Xiao, Heterogeneous Integratation of Rehealable, Recyclable and Reconfigurable Wearable Electronics, *The 20th East China Conference on Solid Mechanics,* Nov 20-22, 2020, Ningbo, China

[C2] C. Shi, J. Xiao, Investigating the Self-Healing of Dynamic Covalent Thermoset Polyimine and Its Nanocomposites, *The ASME International Mechanical Engineering Congress & Exposition 2019*, Nov 11-14, 2019, Salt Lake City, UT

[C1] J. Xiao, C. Shi, Rehealable, Recyclable and Reconfigurable (3R) Electronics, *The ASME International Mechanical Engineering Congress & Exposition 2019*, Nov 11-14, 2019, Salt Lake City, UT