

Zeang Zhao

Institute of Advanced Structure Technology, Beijing Institute of Technology

Address: No. 5, South Street, Zhongguancun, Haidian District, Beijing, P.R.China 100081

Email: zza@bit.edu.cn

Education

2014.09-2019.07

Ph.D. (*Advisor: Dr. Daining Fang*)

Peking University, College of Engineering, Beijing, China

2015.10-2017.09

Visiting Scholar (*Advisor: Dr. H. Jerry Qi*)

Georgia Institute of Technology, The George W. Woodruff School of Mechanical Engineering, Atlanta, USA

2010.09-2014.07

B.E.

Nanjing University of Aeronautics and Astronautics, College of Energy and Power Engineering, Nanjing, China

Professional Experience

2020.01-present

Postdoctoral Researcher

Institute of Advanced Structure Technology, Beijing Institute of Technology, Beijing, China

Research Interest

- Design and manufacturing of soft active structures
- Deformation and stability of soft materials
- Multiphysics modeling and simulation

Academic Experience

- Reviewer for SCI journals, including: Mechanics of Materials, Materials & Design, Scientific Reports, Acta Mechanica Solida Sinica

Grants

- National Natural Science Foundation of China, Young Scientists Fund, The Inverse Mechanical Design of Solvent-driven Polymer Self-shape-morphing 3D Surface Structures, 12002032, 2021-2023, Principal Investigator
- China Postdoctoral Science Foundation, Theoretical and Experimental Investigation on the Micromechanical Behaviors of Digital-light-processing 3D Printed Polymers, 2020M670149, 2020-2021, Principal Investigator
- National Science Foundation of USA, Understanding Mechanics in Photopolymerization Based Additive Manufacturing, 1462895, 2015-2018, Participant

Awards and honors

- 2020 Chinese National Postdoctoral Program for Innovative Talent
- 2019 Excellent graduate in Beijing
- 2019 Excellent graduate in Peking University
- 2014 Outstanding student in Peking University

Selected Publications

1. **Zeang Zhao**, Dong Wu, Ming Lei, Qiang Zhang, Panding Wang, Hongshuai Lei. Mechanical behaviors and the equivalent

- network model of self-similar multinet network elastomers. **International Journal of Solids and Structures** 229 (2021): 111135.
2. **Zeang Zhao**, Dong Wu, Haosen Chen, H. Jerry Qi, Daining Fang. Indentation experiments and simulations of nonuniformly photocrosslinked polymers in 3D printed structures. **Additive Manufacturing** 35 (2020): 101420.
 3. **Zeang Zhao**, Ming Lei, Qiang Zhang, Haosen Chen, Daining Fang. A general model for the temperature-dependent deformation and tensile failure of photo-cured polymers. **Extreme Mechanics Letters** 39 (2020): 100826.
 4. **Zeang Zhao**, Chao Yuan, Ming Lei, Le Yang, Qiang Zhang, Haosen Chen, H. Jerry Qi, Daining Fang. Three-dimensionally printed mechanical metamaterials with thermally tunable auxetic behavior. **Physical Review Applied** 11, no.4 (2019): 044074.
 5. **Zeang Zhao**, H. Jerry Qi, Daining Fang. A finite deformation theory of desolvation and swelling in partially photo-cross-linked polymer networks for 3D/4D printing applications. **Soft Matter** 15 (2019): 1005-1016.
 6. **Zeang Zhao**, Xiao Kuang, Chao Yuan, H. Jerry Qi, Daining Fang. Hydrophilic/Hydrophobic Composite Shape-Shifting Structures. **ACS applied materials & interfaces**. 10, no. 23 (2018): 19932-19939.
 7. **Zeang Zhao**, Xiao Kuang, Jiangtao Wu, Qiang Zhang, Glaucio H. Paulino, H. Jerry Qi, Daining Fang. 3D Printing of Complex Origami Assemblages for Reconfigurable Structures. **Soft Matter** 14 (2018): 8051-8059.
 8. **Zeang Zhao**, Jiangtao Wu, Xiaoming Mu, Haosen Chen, H. Jerry Qi, Daining Fang. Origami by frontal photopolymerization. **Science Advances** 3, no. 4 (2017): e1602326.
 9. **Zeang Zhao**, Jiangtao Wu, Xiaoming Mu, Haosen Chen, H. Jerry Qi, Daining Fang. Desolvation induced origami of photocurable polymers by digit light processing. **Macromolecular rapid communications** 38, no. 13 (2017): 1600625.
 10. **Zeang Zhao**, Xiaoming Mu, Nancy Sowan, Yongmao Pei, Christopher N. Bowman, H. Jerry Qi, Daining Fang. Effects of oxygen on light activation in covalent adaptable network polymers. **Soft matter** 11, no. 30 (2015): 6134-6144.
 11. **Zeang Zhao**, Xiaoming Mu, Jiangtao Wu, H. Jerry Qi, Daining Fang. Effects of oxygen on interfacial strength of incremental forming of materials by photopolymerization. **Extreme Mechanics Letters** 9 (2016): 108-118.
 12. Hongshuai Lei, Chuanlei Li, Xiaoyu Zhang, Panding Wang, Hao Zhou, **Zeang Zhao**, Daining Fang. Deformation behavior of heterogeneous multi-morphology lattice core hybrid structures. **Additive Manufacturing** 37 (2021): 101674.
 13. Jiangtao Wu, **Zeang Zhao**, Craig M. Hamel, Xiaoming Mu, Xiao Kuang, Zaoyang Guo, H. Jerry Qi. Evolution of material properties during free radical photopolymerization. **Journal of the Mechanics and Physics of Solids** 112 (2018): 25-49.
 14. Xiao Kuang, Jiangtao Wu, Kaijuan Chen, **Zeang Zhao**, Zhen Ding, Fengjingyang Hu, Daining Fang, H. Jerry Qi. Grayscale digital light processing 3D printing for highly functionally graded materials. **Science Advances** 5, no. 5 (2019): eaav5790.
 15. Xiao Kuang, **Zeang Zhao**, Kaijuan Chen, Daining Fang, Guozheng Kang, H. Jerry Qi. High-Speed 3D Printing of High-Performance Thermosetting Polymers via Two-Stage Curing. **Macromolecular rapid communications** 39, no. 7 (2018): 1700809.
 16. Jiangtao Wu, **Zeang Zhao**, Xiao Kuang, Craig M. Hamel, Daining Fang, H. Jerry Qi. Reversible shape change structures by grayscale pattern 4D printing, **Multifunctional Materials** 1 (2018): 015002.