

Email: zzhuau@connect.ust.hk

ORCID: [0000-0002-5138-6762](https://orcid.org/0000-0002-5138-6762)

Corresponding Address: G031, Academic Building,
HKUST, Clear Water Bay, Kowloon, Hong Kong

Residential Address: G/F, No.13 Tai Po Sai Village,
Clear Water Bay, Kowloon, Hong Kong

Person Website: -

[Google Scholar](#)

Education

- 2020–on **PhD in Mechanical Engineering**, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Hong Kong SAR.
- 2019–2020 **Mphil in Mechanical Engineering**, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Hong Kong SAR.
- 2016–2018 **BSc in Civil Engineering** (Program transfer), Department of Civil Engineering, Harbin Institute of Technology, China.
- 2015–2019 **BSc in Civil Engineering**, School of Ocean Science and Engineering, Harbin Institute of Technology (Weihai), China.

Research Interests

Nanomechanics of phase transforming materials, martensitic phase transformation,
supercompatibility conditions, continuum mechanics and applied mathematics

Professional Appointments

- 2023–2024 **Research Assistant**, Hong Kong University of Science and Technology
- 2019–2023 **Teaching Assistant**, Engineering Materials I, Hong Kong University of Science and Technology
- 2020–2022 **Teaching Assistant**, Continuum Mechanics for Crystalline Solids, Hong Kong University of Science and Technology
- 2019–2023 **Teaching Assistant**, Foundation of Solid Mechanics, Hong Kong University of Science and Technology

Honors and Awards

- 2018–2019 Ma Zuguang Scholarship, Harbin Institute of Technology, China (*Top award in HIT*)
- 2018–2019 National Encouragement Scholarship, Harbin Institute of Technology (Weihai), China
- 2017–2018 National Scholarship, Harbin Institute of Technology (Weihai), China
- 2016–2017 National Scholarship, Harbin Institute of Technology (Weihai), China
- 2015–2016 First Class Honor, Harbin Institute of Technology (Weihai), China

Talks and conference

- 2024 Slip, transformation twinning and scaling effect of phase-transforming ferroelectric materials in the micro/nano scales. *Poster, SES Annual Technical Meeting 2024. (SES 2024)*
- 2023 Orientation-dependent superelasticity and fatigue of CuAlMn alloy under in situ micromechanical tensile characterization. *Poster, International union of theoretical and applied mechanics Symposium on mechanics of advanced materials and structures with multifield couplings. (Poster, IUTAM2023)*

- 2023 Enhanced functional reversibility in lead-free ferroelectric material over long cycle pyroelectric energy conversion. *China Material Conference*(**Oral, CMC2023**)
- 2023 In-situ nano mechanics of phase transforming ceramics-BaTiO₃. *Oral, Invited talk in Tongji University*

Publication List

- 2024 Reducing functional fatigue and hysteresis of CuAuZn micropillars by gradually overstressed plastic deformation. *in press* **ZHU, Z**, Mostafa Karami, Huang Xinyue, Xian Chen
- 2024 Twinning, slip and size effect of phase-transforming ferroelectric nanopillars *JMPS* **ZHU, Z**, Mostafa Karami, Chenbo Zhang, Xian Chen
- 2024 Non-dissipative martensitic phase transformation after multi-million cycles. Mostafa Karami, **ZHU, Z**, Ka Hung Chan, P Hua, N Tamura, Xian Chen. *PRL2024*
- 2023 Orientation dependent superelasticity of ferroelectric oxide via stressed-induced martensitic phase transformation. *in press* **ZHU, Z**, Mostafa Karami, Chenbo Zhang, Xian Chen
- 2023 Grain size and lattice compatibility enhanced Figure-of-Merit in $Ba_{0.95}Ca_{0.05}Ce_{0.005}Zr_xTi_{0.995-x}O_3$ material for pyroelectric energy conversion Chenbo Zhang, **ZHU, Z**, Xian Chen *APL2023*
- 2023 Enhanced functional reversibility in lead-free ferroelectric material over long cycle pyroelectric energy conversion. Chenbo Zhang, **ZHU, Z**, Ka Hung Chan, Ruhao Huang, Xian Chen. *PRMaterial2023*
- 2022 Orientation-dependent superelasticity and fatigue of CuAlMn alloy under in situ micromechanical tensile characterization. *JMPS2022* Mostafa Karami, Kangjie CHU, **ZHU, Z**, Zhou Wang, Qingping Sun, Mingxin Huang, Xian Chen
- 2021 Energy conversion from heat to electricity by highly reversible phase-transforming ferroelectrics. *PRApplied2021* Chenbo Zhang, Zhuohui Zeng, **ZHU, Z**, N Tamura, Xian Chen
- 2021 Low hysteresis and enhanced figure-of-merit of pyroelectric energy conversion at compatible phase transformation. *APL2021* Chenbo Zhang, **ZHU, Z**, JY Choi, JY Kim, Xian Chen
- 2020 Impact of leakage for elasticity generation by pyroelectric converter. *PRApplied2020* Chenbo Zhang, Zhuohui Zeng, **ZHU, Z**, Mostafa Karami, Xian Chen
- 2020 Two-tier compatibility of superelastic bicrystal micropillar at grain boundary. *Nano Letter2020* Mostafa Karami, **ZHU, Z**, Zhuohui Zeng, N Tamura, Yong Yang, Xian Chen