Yonglin ZHANG

E-mail: yonglin.zhang@connect.ust.hk
Address: Room 2568 (Lift 27/28), Academic Building, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong SAR

Education Background

Hong Kong University of Science and Technology **2018-Present**
Ph.D. Candidate
Engineering Mechanics, Department of Mechanical and Aerospace Engineering
Advisors: Prof. Jinglei YANG, Prof. Jingshen WU

Harbin Institute of Technology (HIT), Harbin, China **2016-2018**
Master of Engineering
Solid Mechanics, Department of Astronautical Science and Mechanics
Advisors: Prof. Liwu LIU, Prof. Jinsong LENG

Harbin Institute of Technology (HIT), Harbin, China **2012-2016**
Bachelor of Engineering
Engineering Mechanics, Honors School
Advisors: Prof. Liwu LIU, Prof. Jinsong LENG

Research Experiences

Department of Mechanical and Aerospace Engineering, HKUST, Hong Kong SAR

Center for Engineering Materials and Reliability (CEMAR), HKUST, Hong Kong SAR

2018-Present

1. Microfluidic electroless interconnection (MELI) for 3D chip advanced integration

- Interconnection uniformity of microfluidic electroless deposition by finite element model and experimental investigation from a perspective of electrochemistry and fluid mechanics.
- Interconnection microstructure evolution during the deposition process in multiphase reaction flow by phase-field modeling (PFM).

2. Electronic package reliability

- Package reliability assessment by finite element model, machine learning, and experimental evaluation.

Department of Astronautical Science and Mechanics, HIT, China

Center for Smart Materials and Structures (CSMS), HIT, China **2015-2018**

1. Shape memory polymer composite (SMPC) for space deployable structures (Government-sponsored research)

- Structure design and assembly of space deployable structures based on shape memory polymer composites.

- Investigation on material and structural responses in a space environment with mechanical, thermal, and radiate loadings by finite element model and experiment.

2. Two-way shape memory structure

- Structure design, and assembly of a novel two-way shape memory structure based on shape memory polymer composite and electroactive polymer.
- Investigation of mechanical properties including temperature-dependent behaviors and shape memory effect by finite element model and experiments.

3. Electroactive polymer (EAP) based bionics flapping-wings

- Structure design and assembly of electroactive polymer-based bionics flapping wings.
- Study on mechanical-electrical coupling response by theoretical analysis, finite element model, and experiments.

Academic Achievements

Zhang, Y., Yao, P., Han, Y., Yang, J., Chen, H., Wu, J., & Yang, J. (2022). Microfluidic electroless deposition for uniform stacking chip interconnection: simulation framework and experimental validation. Chemical Engineering Journal, 134684.

Yao, P., Yang, J., **Zhang, Y.**, Fan, X., Chen, H., Yang, J., Wu, J. 2022, June. Physics-based Nested-ANN Approach for Fan-Out Wafer Level Package Reliability Prediction. In 2022 IEEE 72st Electronic Components and Technology Conference (ECTC). IEEE.

Zhang, Y., Chen, H., Fan, H., Yang, J. & Wu, J., 2021, June. Numerical Investigation on Microfluidic Electroless Deposition for Uniform Copper Pillar Microbumps Interconnection. In 2021 IEEE 71st Electronic Components and Technology Conference (ECTC) (pp. 402-407). IEEE.

Zhang, Y., Chen, H., Xue, K., Yang, J., & Wu, J. 2020, August. The Finite Element Model of the Effect of the Interface Behavior of Corner Bond on the Reliability of the BGA Package under Thermal Cycling. In 2020 21st International Conference on Electronic Packaging Technology (ICEPT) (pp. 1-5). IEEE.

Zhang, Y., Liu, T., Lan, X., Liu, Y., Leng, J., & Liu, L. (2022). A compliant robotic grip structure based on shape memory polymer composite. Composites Communications, 101383.

Liu, Y., Leng, J., **Zhang, Y.**, & Liu, T. An Iris Identification System to Stimulate the Deformation of Shape Memory Polymer [P], China, CN105678139A, 2016.06.15.

Selected Honors & Awards

Special Scholarship	**2016**
People Scholarship	**2013 - 2016**
Honorable Prize for Mathematical Contest in Modeling	**2014**
BDR Scholarship	**2023**

Activities

Reviewer of Journal of Electronics Packages	**Dec. 2020 - Present**
Co-founder of Sophten International Limited	**Jun. 2021 - Present**
IEEE membership	**Apr. 2020 - Present**
The 3rd Annual International Symposium on Soft Robotics	**Dec. 2017**