



Mingxi Zheng, M.S., EIT
Materials Engineer

SUMMARY

Mingxi has spent the start of her career gaining a variety of experience in materials development in a broad range of industries. With a specialty in fracture mechanics and failure analysis, she has a background in materials testing and process development for aerospace applications and has worked on integrating Mil, ASTM, ISO, and NASA specifications in assisting startups transition from R&D to production. In addition to traditional materials and processing methods, she has worked on characterization for additive manufacturing of both metallic and polymeric materials.

EDUCATION

M.S. Materials Science and Engineering, University of California, Berkeley
B.S. Materials Science and Engineering, University of California, Berkeley

SELECTED INDUSTRY EXPERINCES AND EXPERTISE

- Additive manufacturing
- Astro & Aerospace
- Computer Aided Design
- Consumer products
- Corrosion
- Fatigue
- Fracture mechanics
- Failure analysis
- Failure modes and effects analysis
- GD&T
- Manufacturing processes
- Metallurgy & metallography
- Microscopy
- New material development
- Polymeric materials
- R&D to Production Transitions

PROFESSIONAL EXPERIENCE

2016 – Present

Engineer, Berkeley Engineering and Research, Inc.

Assist in reviewing evidence and documents for a variety of mechanical and material related cases, including the following industries: oil and gas, industrial, consumer products, and chemical.

2018 – 2019

Materials Engineer, Carbon Inc., Redwood City, CA

Responsible for the characterization of Carbon's custom 3D printing resins and custom additive CLIP process for applications in various industries, including aerospace, automotive, dental, industrial, medical, and sporting goods. Established standard material testing procedures to evaluate Carbon's hardware, software, and materials for environmental stability, aging, and mechanical behavior under various condition. Implementation of failure analysis processes and data traceability systems. Provided design consultation to customers from a variety of industries, in particular, medical, consumer product, and automotive.

2017 – 2018

Advanced Materials Development Engineer/Quality Engineer, Virgin Galactic, Long Beach, CA
Acted as company's subject matter expert in metallurgy and metallography. Owned the development of a materials development roadmap to characterize materials for additive manufacturing on the DMG Mori Lasertec 4300 3D and its application in rocket launch. Designed materials sample CAD models to meet ASTM characterization requirements. Reviewed drawings and performed vehicle inspections.

2015 – 2016

Materials and Process Engineer, SpaceX, Hawthorne, CA
Supported return to flight efforts as a primary failure analysis specialist for structures following the 2015 anomaly. Developed a fracture and fatigue FEA tool for aluminum and steel alloys for use in reliability analysis. Standardized and executed novel test plans to define effects of coatings on fatigue. Drove corrective actions to completion with improved documentation. Developed new materials allowables in conjunction with NASA.

2016

Materials Science and Engineering Instructor, University of California, Berkeley
Instructor for the Department's Characterization lab course: MSE 104, "Materials Characterization". Conducted lectures on characterization methods and led lab sections on SEM/EDS, X-Ray diffraction, and TEM. Responsibilities also included grading homework, exams, and lab reports, and holding office hours.

2014

Fiber R&D Engineer, Bolt Threads, Emeryville, CA
Prototyping using the company's sustainable silk polymer alternative. Developed and executed custom testing methods for characterization. Designed experiments to determine the relationship between process changes to final material properties.

2011-2012

R&D Intern, Nitto Denko Technical Co., Oceanside, CA
Analytical testing and evaluation of OLED devices for medical applications. Optimized processes to fabricate OLED devices for improved performance.

RESEARCH

2016

"Fatigue and Fracture and high strength Ni-based bulk metallic glass", Master's thesis with Prof. Robert Ritchie

- S/N Fatigue testing and fracture toughness testing of bulk metallic glasses.
- SEM analysis of fracture surfaces to determine failure mechanisms of different alloy formulations.

2012-2014

Undergraduate Research Assistant, UC Berkeley, Labs of Prof Luke Lee and Robert Ritchie

- Researched methods to improve photolithography process for use in lab-on-a-chip medical devices under the supervision of the lab of Prof. Luke Lee.
- Researched processing methods to create composite ceramic/metallic materials to mimic the properties of nacre under the supervision of the lab of Prof. Robert Ritchie.

PATENTS

“BONDED ASSEMBLIES HAVING LOCKING ORIFICES AND RELATED METHODS”,
Mingxi Zheng. Application Filed Feb 28, 2019 us 62/811,784