

HEATHER SALVADOR

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MECHANICAL ENGINEER

Mechanical engineer and materials science engineer with five years of experience in the aerospace and manufacturing industry, including project management, developing practical solutions to engineering problems, working directly with key customers, and supervisory responsibilities. Five years as a researcher under the advisement of Dr. Suveen Mathaudhu, working in a research and development environment specific to experimental design, scientific evaluation, and technical communication to expand the knowledge of processing-property relationships in structural metals.

CAREER HIGHLIGHTS

RESEARCH

- Coordinated research collaboration with members at Sandia National Laboratories on irradiation resistance of copper, and performed characterization on irradiated samples.
- Designed, managed, and successfully completed multiple experimental projects from conception through testing
- Developed protocols for laboratory organization, purchasing, and experimental documentation
- Presented technical information and research results at multiple national and international conferences

INDUSTRY

- Spearheaded development of an assembly and test facility with trained lab technicians for a new product line of fluid-flow electro-mechanical valves.
- Tracked, addressed and mitigated technical issues, including thermal tolerance stackup analysis, structural weakness identification, and new part design.
- Built and tested a development valve for the Boeing Space Launch System propulsion system

APPLICABLE SKILLS

TRANSFERRABLE SKILLS

- Excellent interpersonal collaboration
- Detail oriented
- Leadership and management
- Proactive mindset
- Cross-functional team communication

TECHNICAL SKILLS

- Basic machine shop tooling and machine knowledge
- Working knowledge of pneumatic systems
- Prototyping and product development
- Thermal tolerancing analysis
- Root cause failure analysis
- Transferring a product line from development to manufacturing

SOFTWARE KNOWLEDGE

- 3D CAD - Solidworks / Inventor
- Matlab
- Origin
- Microsoft Word, Powerpoint, Excel

EQUIPMENT KNOWLEDGE

- Electron microscopy (SEM, EDS, TEM)
- X-ray diffraction
- MIG welding
- 3D printing (plastics)

ENGINEERING EXPERIENCE

RESEARCHER

UC Riverside, Mathaudhu Lab

Riverside, CA

June 2016 - present

Required to perform thorough research on the scientific background of each project, use the scientific method to design experiments to answer a specific hypothesis, collaborate and communicate with the larger scientific community, publish results in scientific journals, and learn new equipment operation and techniques as required.

- Main projects:
 - Magnesium-based metal-matrix composites using powder metallurgy

- Gradient microstructures in Cu to study radiation tolerance fundamentals along various length scales
- Dual-phase magnesium-lithium alloys to determine the effects of processing pressure on mechanical properties.
- Trained on equipment required for sample preparation and characterization including powder metallurgy and sintering techniques, heat treatment, electro-chemical polishing, chemical etching, electroplating, electropolishing, X-ray diffraction, electron microscopy, hardness testing, and tensile testing. Additional experience with small-scale mill and lathe operation, and EDM wire cutting.

MANUFACTURING SUPERVISOR

VACCO Industries

South El Monte, CA

June 2014 – April 2016

Planned and oversaw the construction of a new assembly and test facility for a line of electro-mechanical fluid flow valves in development and production. Responsible for hiring and training cleanroom-level technicians, tracking and resolving manufacturing issues, and ensuring the on-time delivery of production valves. Point person for production communication with internal cross-functional teams and external reporting to the customer.

- Performed daily assessment of engineering and production problems and provided practical solutions with adaptability as required to maintain product timelines.
- Initiated cross-functional team production meetings to break down barriers for better communication of immediate needs, maintaining production schedules, and proactively addressing potential setbacks.
- Hired, trained, and directed a team of 11 technicians capable of research and development level assembly, testing, and troubleshooting.

PROJECT ENGINEER

VACCO Industries

South El Monte, CA

June 2012 – June 2014

Responsible for the management of a project from development to design validation to manufacturing.

- Created assembly operation animations using AutoCAD software to show the valve operation in video format, and initiated this practice across the product line.
- Performed comprehensive thermal tolerance stack-up analysis to determine areas of possible interference during the valve operation due to thermal fluctuations.
- Designed a valve component to fit within the existing design, and for manufacturability.
- Built and tested a prototype valve unit and transferring findings to manufacturing assembly and test documentation.
- Performed vibration and shock testing on a prototype valve for design validation of increased operation requirements from the customer.

QUALITY ENGINEER INTERN

GKN Aerospace

Santa Ana, CA

June 2011 – December 2011

Tasked to work with a team of quality engineers, learn about quality engineering processes, and take on quality engineering tasks.

- Audited manufacturing paperwork for consistency and completion
- Tracked and moved open quality incidents to closure
- Collaborated with inspectors to standardize and improve inspection processes. Key achievements include the development of a standardized inspection instruction with accompanying visual work instruction.

EDUCATION

PH.D. MECHANICAL ENGINEERING

University of California, Riverside

Riverside, CA

June 2016 – July 2021 (estimated)

B.S.+M.S. MECHANICAL ENGINEERING

University of California, Riverside

Riverside, CA

June 2007 – June 2012