Contact

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Top Skills

Systems Engineering

Engineering

Aerospace

Publications

The Effects of Laser Peening and Shot Peening on High Cycle Fatigue in 7050-T7451 Aluminum Alloy

The Effects of Laser Peening on High Cycle Fatigue in 7085-T7651 Aluminum Alloy

Fatigue Performance of Laser Peened 7050-T7451 Aluminum Alloy

Harold Luong

Staff Mechanical Engineer at Lockheed Martin

Sunnyvale, California, United States

Summary

Mechanical engineer with ten years of experience in the aerospace industry. Strong proficiency in the design, development, qualification, and manufacturing of hardware for space and airborne applications. Adept in various manufacturing processes for metallic and graphite composite components as well as the integration of those components into complex higher levels of assembly.

Held multiple product lead and vendor/OEM technical management roles in support of structural and electro-mechanical hardware. Able to develop effective relationships across all disciplines. Thrives in fast paced, adaptive work environments. Enjoys working on collaborative teams and the fun of creating something new.

Experience

Lockheed Martin

18 years 11 months

Staff Mechanical Engineer

August 2015 - Present (10 years 3 months)

Sunnyvale, CA

Technical Lead for the Structures, Mechanisms, and Thermal Control (SMT) Products team responsible for the compatibility of SMT products on the Payload Assembly for a new Satellite program. Provided daily tasking and technical direction to team of four product managers and 10 engineers. Developed Systems Engineering performance requirements to define Structures and Mechanisms products. Led major design reviews for Program Startup (SRR), at preliminary design completion milestone (PDR), and prior to start of manufacturing (CDR). Iterated product designs to incorporate trade studies and evolving requirements. Architected forward thinking solutions to complex mechanical problems and led multidisciplinary teams to define and execute plans to resolve those problems. Drove design maturation and hardware development within cost, schedule, and technical constraints.

Provided coaching and mentorship to team in support of Program goals and their technical development.

Senior Mechanical Engineer, Mechanisms
September 2014 - July 2015 (11 months)
Sunnyvale, CA

Product manager and Principle Engineer for a single axis, electro-mechanical, Spacecraft deployment mechanism. Responsible for providing oversight to vendor and internal teams. Technical authority responsible for the successful assembly, test validation, hardware delivery, and integration of that mechanism into a major subsystem.

Senior Mechanical Design Integration Engineer
January 2014 - September 2014 (9 months)
Sunnyvale, CA

Responsible engineer for the mechanical design integration of major subsystems at the Space Vehicle level. Facilitated cross-organizational collaboration between various teams to implement solutions for production problems to ensure a smooth manufacturing flow during this critical integration phase of a development program. Negotiated design requirements to manage the scope of work for the integration design team. Reviewed and approved engineering drawings and manufacturing instructions for release.

Senior Mechanical Engineer, Structures
April 2011 - March 2014 (3 years)
Sunnyvale, CA

Product Manager and Lead Engineer for honeycomb composite structures responsible for managing $3M firm fixed priced contracts to fabricate composite panels for a space vehicle bus primary structure. Developed original mechanical design solutions for over 150 complex metallic and composite structural components and assemblies. Created detailed 3D solid models and 2D drawings to support hardware fabrication. Oversaw the subsequent manufacturing effort. Led reviews of vendor manufacturing processes, addressed manufacturing non-conformances, and implemented changes for improvement opportunities to drive efficiencies on the production line. Mentored junior engineers in best product design and CAD practices.

Proficient in Creo, ProEngineer, Wildfire CAD tools. Proficient in GD&T.

Mechanical Design Engineer, Solar Arrays
December 2006 - April 2011 (4 years 5 months)
Sunnyvale, CA

Design engineer responsible for designing mechanical components, assemblies, electrical layouts, and wire harnesses for A2100 geosynchronous satellite solar arrays for commercial programs. Provided detailed 3D models, 2D drawings, and BOMs for those designs.
Led design development, manufacturing process validation, mechanical and thermal qualification testing, and readiness reviews of new graphite composite solar panels and solar array wing booms.

Provided technical and program oversight to external vendors and interfaced extensively with internal manufacturing engineers, technician teams, procurement, and program customers during fabrication of flight hardware to meet program milestones.

University of California, Davis
Graduate Assistant Researcher
January 2004 - December 2006 (3 years)
Davis, CA

Conducted applied research on fatigue life extension in various aerospace metal alloys using laser shock peening, in partnership with Lawrence Livermore National Labs and Metal Improvement Company. Performed high cycle fatigue life studies, surface engineering experiments, and various materials evaluations to optimize laser peening treatment for aerospace, nautical, and orthopedic applications. Research findings for laser peening on fatigue life extension and the effects of laser peening-induced surface damage were accepted for publication in an international mechanical and materials engineering journal.

Education

University of California, Davis
M.S., Mechanical and Aeronautical Engineering · (2004 - 2006)

University of California, Davis
B.S., Mechanical and Aeronautical Engineering · (1999 - 2004)

Activity

09/23/2025, Dennis Davis added candidate to Staff Mechanical Engineer - Rings

09/24/2025, Dennis Davis updated candidate from Staff Mechanical Engineer - Rings

10/14/2025, Viewed by Dennis Davis