KIDUS TSEGAY

MECHANICAL ENGINEER SAN JOSE, UNITED STATES 3237982196

DETAILS

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SKILLS

Design skill: Solid command of technologies tools and best practices in mechanical component design, advanced part design for Injection molding, roll forming, press braking, casting extrusion and other sheet metal, jig, fixtures, 3D printing, mechatronics with detail knowledge of tolerance stack up analysis, DFM, DFA, FEA, DFMA and GD&T ASME Y14.5-1994

Computer proficiency: SOLID WORKS , OSIsoft PI, ANSYS, MATLAB, PDM AutoCAD, SAP,JIRA, Asana, Confluence

MS Office Suite: Word, Excel, Outlook, PowerPoint, Visio

Product cycle life (PLM): Agile,Arena

PROFILE

Motivated Mechanical Engineer with Eight + years of experience in design and development of mechanical components and systems. Versed in stage gate product development process, testing and evaluating theoretical designs, assessing final product overall performance and estimating budgets. Works alongside fabrication and manufacturing personnel to verify exceptional product quality. Comfortable taking projects from initial conception through holistic design phases and into final production.

EMPLOYMENT HISTORY

Staff Mechanical Engineer at Form Energy, Berkley CA

August 2023 — Present

- Designed and developed IP45-rated enclosures for battery energy storage systems, guiding the product from concept to production.
- Conducted static and dynamic structural analysis using FEA tools to verify product performance under different loading conditions.
- Performed tolerance stack-up analysis to ensure precise alignment and fitment of enclosure components, reducing production issues.
- Managed large assembly BOM, ensuring accurate documentation, part numbering, and material sourcing for manufacturing.
- Led the product through all phases of development, including prototyping, testing, validation, and production hand-off, optimizing designs for manufacturability and cost.
- Worked with systems engineering and project engineering teams to define product requirements and specifications, ensuring designs met technical and customer needs.
- Defined and documented mechanical, electrical, hydrogen, Electrolyte, water system and thermal interface requirements, ensuring cross-functional alignment through Interface Control Documents (ICD).
- Collaborated with vendors and contract manufacturers to test and fabricate enclosures, ensuring quality and timely production.
- Developed DFMEA for enclosure to minimized project risk

Staff Mechanical Engineer at Bloom Energy, San Jose

January 2021 — June 2023

· Designed and developed from start to finish different mechanical and electromechanical components of electrolyzer solid oxide cell hotbox up to 30 MW install from concept to production including heat exchangers, ceramics, sensors, UL standard cable management, insulation, piping and sub system level flow diagram layout.

· I designed, sized tubular heater and performed highly acerated test with heater manufacturer to obtain lifetime curve.

· Managed Hotbox top level BOM, Assemblies in PDM and successfully transferred to NPI and Manufacturing team

· Managed and released top level 3D CAD model assemblies BOM and work instruction to contract manufacturers and visited their facility in overseas for knowledge transfer.

· Analyzed hotbox instrumentation data using PI data link and suggested/implemented concept/Design for efficiency improvements

· Collaborated with cross-functional teams through design review to ensure subsystem/part design meets the product requirements

· Coordinated with electrical PD and conducted a system level hotbox test

· Developed DFMEA for hotbox Assembly/sub-system and components and solutions to minimized project risk

· Designed and developed test fixtures for heater reliability testing.

· Worked with contract manufacturers to address DFM and DFA

Mechanical Engineer at Array Technologies, Phoenix

August 2019 — December 2020

· Designed and performed structural analysis of the third top used part of the tracker system of PV module mounting clamp with a minimum production volume of 500,000 per month.

· Calculated bearing, bearing bracket and torque tube (octagonal structural steel) under combined load.

· Collaborated with NPI and contract manufacturers to ensure product requirements were met and projects were completed on time & within budget.

· Designed and tested coil over damper and its casting manufactured bracket.

· Performed product requirements and design specifications creation and release by

· Identifying the needs and goals for a new product like clamp from function to aesthetics following ASCE, ASTM, ASME standards

· Designed electrical enclosures following different standards like UL, IEC

· Fully developed design validation plan and procedures for new products and evaluated results of design verification & validation tests

· Generated design history documents in compliance with company requirements and worked with technical publications to create assembly instructions, acceptance test procedures

· Performed tolerance stack analyses to confirm appropriate fit-up with existing and final sub system and system integration.

· Evaluated feasibility of concepts and prototypes through engineering testing and analysis and assessed reliability, safety, performance, and risk of new designs & methodologies to implement potential design and process improvement

· Worked with vendors to obtain components, supplies and equipment to support prototype assembly and conduct preliminary OEM assessment.

Mechanical Engineer at Ecosense Lighting, Los Angeles

January 2019 — April 2019

· Verified products meet UL test and safety standard

· Designed next generation custom LED product including heat sink, electrical enclosure and conducted thermal test.

· Created 2D drawings, BOM and other documents related to new design implementation.

· Conducted tooling trails on site and determine form, fit and functionality.

· Performed first article inspection and engineering change notice

· Oversee the transition from design into production, including any necessary testing required for implementing new or changed designs.

Mechanical Engineer at LF Illumination, Los Angeles

May 2018 — December 2018

· Verified products meet UL test and safety standard

· Designed next generation custom LED product including heat sink, electrical enclosure and conducted thermal test.

· Created 2D drawings, BOM and other documents related to a new design implementation.

· Performed first article inspection and engineering change notice

· Oversee the transition from design into production, including any necessary testing required for implementing new or changed designs

· Performed prototyping and testing of new designs, and analyzed test data

· Provide technical consultation internally to sales and marketing personnel and externally to customers

Mechanical Engineer at Kumbaya, Los Angeles
February 2017 — April 2018

· Developed concept to production-ready fixed and movable LED lamp design,

· Performed thermal and structural Simulation FEA and developed 3D printing prototype

· Worked with PCB designers to achieve final product design

· Designed production level Battery enclosure and connectors as per the specification

· Designed optimization of mechanical components for zeroXess system

· Developed, document and review specifications and other data to create mechanical layouts.

· Created 2D drawings and BOM for ZeroXess

· Ensured mechanical design functionality meets the user requirements and validation.

Mechanical Engineer at PARKER HANNIFAN , Los Angeles
February 2016 — January 2017

· Developed and produce design data using Solid works required for manufacturing, assembly and installation of mechanical component resulted in 67.7% performance improvement

· Prepared, reviewed, interpreted, analyzed, and modified mechanical system engineering plans, drawings, specifications, and engineering reports.

· Designed and analyze test equipment and final product assembly

· Designed Vertical Precision fixture and Controlled feed roller.

Mechanical Engineer-Intern at SpaceX, Hawthorne
September 2015 — January 2016

· Performed design and modification of mechanical component using Solid works

· Knowledge of Geometric Dimensioning & Tolerance ASME Y14.5-1994

· Performed vibration and electromechanical failure of hot rolled component.

· Prepared and analyzed complex data, matrices and comprehensive reports using Tableau

EDUCATION

MSc in Mechanical Engineering, California state university, Los Angeles
March 2016

FE-EIT, NCEES, Los Angeles