



KRISHNA REDDY KYPU

Targeting **Techno Managerial level** assignments in **Mechanical Engineer -New Product Design and Development (NPD)** with an organization where Logical thinking, Hardwork & Excellence is appreciated
"Passionate about innovation"

Contact Information

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Core Competencies

Design Engineering
Deep Visualization & Creative thinking
New Product Design & Development
End to End Product life cycle -PDR
Electro mechanical systems design
Cross Functional Team management
DFMA & Lean Design
Value Engineering
Team Building & Management
GD&T , Stack up Analysis
Structural & Thermal Analysis (FEA)
Problem Solving
Team work

Profile Summary

- Goal-oriented **Mechanical Engineer** with over **7.5 years** of experience in **Design and Development of New Products/systems**
- Experience in **product design & development (R&D)** of **Electromechanical Systems (Missile & Surveillance)** in **defense & aerospace** industry & New product development experience (NPD) in **Wafer processing Equipment -Semiconductor industry**
- Comprehensive experience in **end-to-end product life cycle** From **Specifications/Requirements' analysis** to **system testing & Production** through **PDR** process.

Work Experience

Since June 2022 with Applied Materials, Bangalore as Staff Engineer/ Technical Manger in NPD- Semi Conductor Capital Equipment Industry

Since August 2020 with Lam Research corporation, Bangalore. As Mechanical Engineer-II - Semi Conductor Capital Equipment Industry

October'2014 to August 2020 with VEM Technologies Pvt. Ltd., Hyderabad- as Mechanical Engineer - Defense & Aerospace Industry

Work exposure:

- **Concepts Development/ Ideation** & Selection using **Pugh Tradeoff Matrix**
- Experience in **System configuration, Decomposition, system integration & testing**
- Experience in mechanical part and assembly design, electronics packaging using **Value Engineering and DFX Principles**
- Skilled in applying Geometrical Dimensioning and Tolerance as per **ASME Y14.5M-& Skilled in Tolerance Stack up Analysis** with **WCS** and **RSS**
- Sound understanding of manufacturing processes like (**Machining -CNC Turning, Milling, EDM, Wire EDM, Injection Molding, Sheet Metal, Welding, etc**)
- Experience in design of **mechanical components, Sheet metal parts & plastic parts** along with supporting **hand calculations**
- Experience in building **Prototype** models for **Customer Demo & Expo**
- Experience in **Test facilities** identification & Facilitate Sub system/system level tests
- **Materials, Surface finishes & Bought out (OEM) components (COTS)** Selection **Functional & Environmental requirement**
- Performing System & Sub-systems **Risk management Analysis** using tools such as **DFMEA, Pareto Chart, RCA** and so on
- Coordinating with **Cross-functional teams** such as Mechatronics, Control systems, Electronics, Manufacturing, Planning, Purchase for technical discussions and project management
- Experience in Deriving **Torque** requirements for Gimbal systems & Dynamic **Balancing** of Gimbal systems
- Experience in Defining the **Fixtures** Requirements & Design of **fixtures** for **Assemblies & Testing**
- Experience in **Electronics Packaging and Thermal Analysis** of PCBs along with **Cable Routing(Harness)** with **EMI/EMC & Environmental considerations per MIL standards** in coordination with PCB Design Team
- Experience in Packaging of **High Voltage** Electronics (10 kV).
- Experience in Design of Components per functional requirements by considering **SEMI & Other Standards** (SEMI S2, S8, S1,S6 etc.)
- Experience in **creating & Configure BOMs** & Product Documentation as Per AS 9100-D & per internal Standards
- Experience in **Engineering Change Management** process, creating **ECN/ECR (DDC, ECO & CA)**
- Experience in making **Test Plans** , Recording & evaluating testing data, altering designs as necessary to bring them to safety, functional performance and efficiency as per standards

Certifications

Introduction to SEMI S2 by SALUS Engineering.

LEAP L1 certified by Lam

Caltech Systems Engineering Certification Course

Technical Skills

- **Design Tools:**
 - **UNIGRAPHICS NX:** 3D Modeling, Assembly, Sheet metal, Cable routing and Drafting
 - **AUTOCAD:** Drafting as per ASME and IS Standards
- **PLM Tools:**
 - **SAP, iPLM (ENOVIA), Team center**
- **Analysis Tools :**
 - **ANSYS:** structural & thermal analysis
 - **KISSOFT:** Simulation of Planetary Gear Trains (Spur Gears) as per DIN and AGMA Standards
 - **Siemens NX Nastran-** Structural FEA
 - **Macro flow**
 - **VacTran (Vacuum)**
 - **MIT Calc**
- **Product Improvement:**
 - Guided Brain Storming,
 - Pugh matrix (Score card), DFX,
 - Risk management (DFMEA), Pareto Chart, RCCA,
 - Structured Investigation,
 - Team Building & Management.
 - TRIZ methodology

Personal Skills

Self Learning & Self Motivated
Ownership & accountability
Quick learner & Flexible to adapt
Good Team player
Dependable
Pro active & “Can do “ attitude

and problem-solving and decision-making skills

- Good attitude for learning new skills, **problem solving methods**, etc
- Proof of concepts (POC) & Design of experiments (**DOE**)

Annexure

Company- Applied materials Inc.- Bangalore

Project : New Platform Design for Semi Critical PVD & Adjacent Applications

Position: Staff Engineer / Technical Manager

Period: June 2022-Present

Software's Used: Unigraphics , NX Nastran, Ansys, VacTran, Macro flow, Office 365 etc.

Job Roles & Responsibilities:

- Module Lead For Multiple Subsystems
- Design & Validation of Subsystem from Scratch (MRS to Product Validation thru PDP Process & Cross Functional Collaboration)
- System & Module Pump down Calculations , Pump Sizing, Vac-Vent Design along with other Electro mechanical & Vacuum interface design
- Lead Team for Project Execution & Mentoring New Engineers

Company- Lam Research Corporation- Bangalore

Project : DRY Photo resist Deposition Tool for EUV lithography

Position: Mechanical Engineer II

Period: September 2020- June 2022

Software's Used: Unigraphics , NX Nastran, Macroflow, Office 365, MIT Calc.

Job Roles & Responsibilities:

- Engaged in concept development & concept selection for components & subsystems design as per the specifications using **Pugh tradeoff Matrix**
- **Design of High Purity Gas weldments & Manifolds As per the P&ID & per the requirements in Vapor Delivery System (VDS)**
- **Cable Harness for Optical & Other cables per Interconnect Diagram.**
- Execution of **Problem Reports (PR)** as technical owner & Resolve them
- Design **Sheet metal Brackets & machined parts using NX & Structural Analysis (FEA) using NX Nastran.**
- Detailed Design of components & Subsystems to reduce number of parts and assembly time and machining cost as per **DFX (DFM, DFA, DFC etc)** principles
- Conduct Design Reviews (**DR**) –**PDR, DDR and CDR** as per PDR process.
- Preparing & Present Test Plans for Lab FIT &Function check in DR's
- Created **ECN/ECR (ECO & DDC)** for implementing changes in components and assemblies
- Performed **Tolerance Analysis (WCS & RSS)** and Applied **GD&T** (ASME Y14.5 Standards) to meet the specifications
- Prepare & Present Risk management & Mitigation plans (**failure analysis**) in CFT forum by using **problem solving** tools like **FMEA, Pareto Chart**
- **Lead** the Project Activities for the Product for India Team.
- Initiated **internal Knowledge sharing Sessions** on Product & Subsystems.

Company – VEM Technologies Pvt.Ltd – Hyderabad

Projects : RF seeker (Electro mechanical system), MBK & AESA TR Module

Period: October 2014-August 2020

Position: Mechanical Engineer

Software's Used: Unigraphics NX, Ansys, AutoCAD, MS office, Kisssoft, MS office

Responsibilities/Roles:

- Conducting **Requirements Review** through **CFT discussion** & alignment
- **System architecture Development** & System Decomposition & integration plan Creation & Execution
- Generating multiple concepts based on inputs, Concept selection using **Pugh Matrix** and Conduct review meetings with authorities and customers to finalize the concepts.
- Conduct **Design Huddles, Detailed, Critical & Final Design Reviews**, Release Product Documentation per the PDR process.
- Detailed Design of Aligned concepts-3D modeling in UG NX by considering DFX principles (**DFMA, DFC** etc) as per Functional requirements by considering **MIT Standards (G100, G115 etc)**

Achievements

Got Employee of the Quarter Award

Got Above and Beyond Cheers Award for Project ownership & Accountability, Innovation.

Got Best performer Appreciation from Top Management



Education

2014: B.Tech. (Mechanical Engineering) from JNTU, Kakinada with 80%

2010: 12th from Sri Chaitanya Junior college with 94.5%

2008: 10th from ZPHS-Kandukur with 92%

Personal Details

Date of Birth: 1st June 1993

Languages Known: English, and Telugu

Address: 3-1A, Reddypalem, paidipadu post, Zarugumalli Mandal, Prakasam district. Andhra Pradesh- 523271

- **Torque calculations** for Gimbals & **balancing of system** to reduce torque requirements.
- Involved in **sizing of actuators**, gear box design As per AGMA & DIN standards & their interface design, fixtures design for load test & backlash measurement of actuators.
- Design calculations for mechanical components & selection of **bearings, O-rings, Feedback sensors (Encoder, Gyro etc.)** etc Based on functional & Environmental Requirements.
- Involved in Identification & Design of **fixtures** for Bench testing & Functional testing, Designing of Special Process **fixtures** like Brazing.
- Involved in Thermal Design of RF seeker system electronics & TR module.
- Design Validation using Ansys (Structural, Modal, Thermal & Random vibration)
- **Drafting** in NX11.0 & Auto cad 12.0 adhere to IS 10714/ ASME Y14 & **GD&T** as per ASME Y-14.5 M, Involved in **Stack up analysis** for critical assemblies.
- Involved in packaging of RF & DSP electronics based on inputs given.
- Involved Generation of product documents adhere to AS9100-D viz. D&D plan, BOM, assembly procedure, acceptance and quality test plans & purchase indents Creation in SAP.
- Actively involved in manufacturing follow-up discussions & assist the Shop floor Team in technical aspects
- Created **ECN/ECR** for implementing changes in components and assemblies
- Preparation of **Assembly and Test plans** & Participating in testing of the individual modules, Subsystems & system level integration Tests.
- **Testing Setup** development & identification of **test facilities for functional testing and environmental testing like anechoic chamber & MIL tests.**
- Risk management & mitigation plans preparation using Tools like DFMEA & Pareto charts.
- Conducted & Present Failure analysis using RCA tools like **fishbone, 5why** etc.
- Team management & Lead the team, Mentoring New Engineers

Academic Project

Main project title: Design and Development of MONO WHEEL BIKE

My Role: project lead



Purpose: To Design and Fabricate the single wheel electric bike

Description: A Mono wheel is a one-wheeled single-track vehicle similar to a unicycle, the wheel is driven by Geared electric Actuator powered by batteries. Transmission is done through internal gear mechanism with module 3, gear ratio of 3. The maximum speed is 25 kmph, electro mechanical brakes were used to stop the vehicle.

ROLE DESCRIPTION:

Concepts generation, design calculations, procurement of materials & bought outs project execution & testing.