Logan Alexander

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WORK EXPERIENCE

Lam Research

Mechanical Engineer – Advanced Technology Development – Office of the CTO **May 2021 – Present**

Fremont, CA

- **Developed gas delivery systems, RF shielding, and chamber materials/coatings** to enable capacitively coupled plasma cleans on deposition tools and brought design from C&F through HVM resulting in **25% decrease in Cost of Ownership** for customers.
- Utilized **NX CAD software and PLM** system to design and document mechanical assemblies with 1000+ components and multiple assembly configurations, **reducing manufacturing costs by 30%** through outsourcing.
- Applied industry **best practices** to design corrosion-resistant plastic, metal, and ceramic components which increased the required **service interval from 3 months to 9 months**.
- Conducted COMSOL **thermal and fluid finite element analysis** (FEA) to guide chamber component design for wafer fab equipment resulting in an **80% reduction in non-uniformity on wafer** and higher yield for customers.
- Engineered chamber components with precision using GD&T, ensuring **99.9% vacuum sealing reliability** and seamless assembly across diverse mating materials, even with **extreme (25C-250C) thermal variation**.

Mechanical Engineer – PECVD Sustaining Engineering **December 2019 – May 2021**

Tualatin, OR

- Conceptualized and **engineered a corrosion-resistant pendulum valve** for tungsten deposition, resulting in a substantial **$2.7M savings** in installation and warranty expenses.
- **Trimmed chamber cooling costs** for AHM deposition tools by an impressive 96%, employing PTC Mathcad alongside **fluid dynamics and heat transfer equations** to craft a straightforward yet highly effective solution.
- Extended remote plasma manifold lifespan on deposition tools from 9 to 12 months, optimizing alloy resistance to the corrosive plasma environment.
- **Revamped showerhead manufacturing**, reducing particle-related customer escalations by 30% through improved baffle joining, minimized part cleanliness variability, and eliminated coolant leakage risks. Pioneered a **test-driven statistical framework** to ensure precise cleanliness specifications with minimal sample sizes.

Rightline Equipment **May 2018 – December 2019**

Product Design Engineer *Vancouver, WA*

- Created 50 new product designs for industrial fork clamps, rotators, stabilizers, and material handling devices.
- Completed over 500 FEA structural studies in Creo Simulate to increase reliability and validate design integrity.
- Streamlined the standard bale clamp arm design to reduce cost by an average of 40%.
- Tested and optimized current single-double pallet handler designs to reduce maintenance costs by 10%.

EDUCATION

Washingon State University **May, 2019**

BS, Mechanical Engineering – Cum Laude *Vancouver, WA*

SKILLS

- CAD - CREO, NX, Fusion 360, GD&T, FMEA, COMSOL, FEA, DFx, O-ring gland design, thermal systems, high vacuum systems, fluid delivery, project management, systems engineering, design reviews, additive manufacturing, costing, LEAN design, tolerance analysis, project scoping.