

NIKHIL JOSHI

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WORK EXPERIENCE

Jupiter Research LLC.

Jr. Product Development Engineer

Phoenix, AZ

August 2022 - Present

- Spearheaded the development and implementation of innovative manufacturing processes for consumer vaporization hardware, driving the creation and refinement of testing procedures and product specifications, and employing initiative, originality, and ingenuity.
- Undertook extensive product validation and usability testing, refining designs to enhance performance, structural integrity, thermal management, and battery life; executed design verification testing and validation, ensuring all SOPs, ECOs, ECNs were up-to-date, and created essential project documents such as BOMs, Design Specifications, and Design Descriptions.
- Improved manufacturing efficiency by leveraging lean manufacturing principles to design and fabricate customized fixtures, optimizing tooling, and reducing material use and print time by ~20-30%; experienced in working with certifications such as FDA, ISO 13485 alongside quality engineers.
- Demonstrated excellent communication, presentation, interpersonal, and organizational skills, effectively communicating project status and technical information to stakeholders (both local and international) of varying technical understanding.

LEADERSHIP EXPERIENCE

Arizona State University

Graduate Student Assistant

Tempe, AZ

August 2021 – May 2022

- Facilitated office hours to provide support and clarification regarding course concepts and homework assignments for courses in engineering and non-engineering (Supply Chain & Project Management) courses of 100+ students.
- Assisted students during in-class activities to reinforce understanding and promote active learning.

ACADEMIC EXPERIENCE

Analysis of internal, external, and multiphase flow with heat transfer

- Generated CAD models with SolidWorks and ANSYS Design Modeler.
- Employed both laminar and turbulent flow models to analyze and compare key parameters, Vorticity, and Stream function.

Optimizing the brew of coffee through factor analysis and DoE principles

- Designed and conducted a full factorial experiment 2^3 to assess acidity variations in freshly brewed coffee, using a pH meter for measurements and managing data with Microsoft Excel, while performing in-depth analysis (ANOVA) using JMP Pro statistical software.
- Investigated two-way and three-way interactions to evaluate the significance of critical variables, enhancing the understanding of their impact on coffee acidity.

Demonstration of stress concentration using Finite element analysis

- Designed stress concentration transformation device using SOLIDWORKS for modeling, ANSYS Structural, and MATLAB for analysis, and laser cutting for fabrication of a PMMA sample..
- Conducted experimental testing of device functionality with a vice, demonstrating proficiency in FEA, CAD, and prototyping while comparing the results found to be consistent with 0.8% error

Liquid-Desiccant Dehumidification for Air Conditioning

- Conducted a comprehensive study on liquid-desiccant dehumidification to optimize humidity control and air temperature reduction, using response surface methodology to focus on variables such as inlet air temperature and relative humidity.
- Developed theoretical models and performed experimental analysis, achieving significant reductions in air temperature (35°C to 25°C) and humidity (0.021 kg/kg to 0.0055 kg/kg). Proposed hybrid systems for improved stability and performance in varied climates. Developed regression models to predict system efficiency, achieving a COP range of 1.44 to 2.4, demonstrating potential for energy savings and improved environmental impact..

EDUCATION

Arizona State University

Master of Science, Mechanical Engineering (GPA: 3.3)

Tempe, AZ

Pandit Deendayal Energy University

Bachelor of Technology, Mechanical Engineering (GPA: 3.5)

Gujarat, India

SKILLS & INTERESTS

SolidWorks, PTC Creo, Ansys, Abaqus, COMSOL, Nx, SimScale, Teamcenter | GD&T, DFM/DFA, FMEA, RCA | DOE, Minitab, JMP | Excel, MATLAB, Python, SQL, PowerBI, Acumatica ERP | 3D Printing, Lean Six Sigma Yellow Belt