ANUP KUMAR SHARMA
MANAGER (Design & NPD, R&D)
HOD

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LOCATION
Delhi – NCR

PROFILE SUMMARY

- ❖ Currently working as Research & Development Head with 4 years of experience; targeting assignments in New Product Development & R&D preferably in Delhi - NCR
- ❖ Highly skilled in full product lifecycle activities including concept maturation, design management, engineering change management, issues control & resolution, cost management, vendor management, manufacturing, and various other cross-functional activities
- ❖ Led organization in research for new products, product enhancements, and product redesign
- ❖ Reviewed regularly part/product development activities and guided & supported the team in achieving the desired outcome
- ❖ Excellent at managing complete engineering operations involving requirement analysis, finalization of specifications, designing, prototype development, testing & development in compliance with global quality standards and clients' requirements
- ❖ Evaluated potential & practicality of products in development and relied on extensive experience & judgment to plan & accomplish goals
- ❖ Expertise in working with suppliers for the day-to-day operational quality issues, establishing long-term partnerships with them, facilitating their evaluation & rating, and developing supplier assessment systems
- ❖ Expertise in driving operational cost reductions & infusing change management as per requirement
- ❖ Exhibited excellence in devising strategies for quality system implementation, leading quality improvement projects & conducting audits

CORE COMPETENCIES

- New Product Development
- Quality & Cost Management
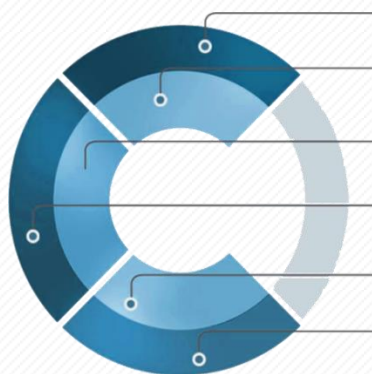- Design & Value Engineering
- Product Specification/ Industrial Design
- Research & Development
- Process & Continuous Improvements/ Simulation

SOFT SKILLS

- Change Agent
- Collaborator
- Communicator
- Innovator
- Planner
- Thinker

EDUCATION

M.Tech. in Engineering Analysis & Design, Delhi from IIT Delhi in 2019 with 8.158 CGPA

B. Tech. in Mechanical & Automation from Amity School of Engineering and Technology, Delhi in 2014 with a 9.08 CGPA

12th from Pava Nagar Mahavir Inter College, **Fazil Nagar** in 2008 with 75.4%

ACHIEVEMENTS

- ❖ Earned Highest Credit in Mechanical Domain (M.Tech)
- ❖ B.Tech. (Batch Topper)
- ❖ Topper in 12th

THESIS

- ❖ Title: Design and fabrication of Rolling Road for wind tunnel simulation to study the aerodynamics of moving vehicles
- ❖ Supervisor: Dr. Srinivas V. Veeravalli (Head, Applied Mechanics), Dr. Murali R. Cholemari, S.R. Kale
- ❖ Description: This project involves designing and fabricating a rolling road for wind tunnel simulation to study the aerodynamics of moving vehicles. Normally vehicles move on the road but in wind tunnel simulation, we need a moving surface to study the ground effect on the vehicle. To get a uniform velocity profile over the vehicle in the test section of the wind tunnel a boundary layer suction mechanism was designed

WORK EXPERIENCE

HOD: Design and New Product Development (R&D)	**Jul19 - to date**
Miraj Group, Udaipur	

Responsibilities:

- ❖ Establishing a product development strategy in collaboration with stakeholders from an engineering perspective
- ❖ Defining industry solutions through ideation, conceptualization, and detailing to identify efficiencies /alternatives
- ❖ Mapping requirements through gap analysis; analyzing workflow to design solutions spanning proof of concept, presentation, product design & development (proto builds), and physical testing
- ❖ Developing plans, estimating time requirements, establishing deadlines, monitoring milestones, tracking lifecycle, and reporting issues that impact project progress to both client & top management
- ❖ Defining specifications as per the drawing while meeting quality and cost standards
- ❖ Working in close coordination with customers, understanding requirements, and identifying/suggesting appropriate improvements
- ❖ Developing cost-effective solutions for prototype development; ensuring prototypes & fixtures are developed on schedule & within budgets
- ❖ Partnering with quality in ensuring rigorous new product testing to meet customer specifications
- ❖ Identifying new products and facilitating the feasibility study with feedback from the sales team/Management/market
- ❖ Analyzing shortcomings of the current design of the Roti Master machine for structural failure, pressing plates, heat distribution of baking plates, fatigue failure of kneader shaft, vibrational analysis of the machine and its reduction, tolerance
- ❖ Stacking analysis of the entire machine, design of new parts, validation of new design, and design optimization, 3D printing of parts, material selection, drop test of the machine, patent analysis & cost optimization
- ❖ Identifying the structural failure caused by the improper thickness of sheet metal parts, improving the design of the kneader shaft, optimizing the design of the screw conveyor, improving the heat distribution of the baking plate
- ❖ Recognizing the heat accumulation inside the baking zone due to poor placement of cooling fans and reducing the overall vibration of the machine

COURSES COMPLETED

- ❖ Finite Element Analysis
- ❖ Computational Fluid Dynamics
- ❖ Design Method
- ❖ Thermal Design
- ❖ Advanced Dynamics
- ❖ Advanced Fluid Mechanics
- ❖ Turbulence and its Modelling
- ❖ Continuum Mechanics
- ❖ Experimental Methods
- ❖ Engineering Mathematic & Computer
- ❖ Properties & Selection of Engineering Material
- ❖ Design Methods
- ❖ Advanced Dynamics of the Atmosphere

TECHNICAL SKILLS

- ❖ 2D Sketching & Rendering Skills – Manual and Autodesk Sketchbook Pro
- ❖ 2D & 3D Modeling Skills – Solid Works, Siemens NX 12, CATIA V5, Alias, Fusion 360, Inventor, and PTC CREO 6
- ❖ 2D & 3D Design Visualization Tools – 3DS Max & KeyShot
- ❖ Sheet Metal & Plastic Part Design, Design for Wear, and Design for Fatigue
- ❖ Design of Fluid, Thermal Systems, Fins, Heat Exchangers, and Heat Pipes
- ❖ Finite Element Modeling and Analysis Using Numerical Methods and Commercial Software Packages like Ansys Workbench, MATLAB, and Explicit Simulation using LS-DYNA for drop tests, impact, smashes, and crash tests etc.
- ❖ CFD Modeling and Analysis using Numerical Methods, and Commercial Software Packages like Ansys Fluent, CFX, and Autodesk CFD
- ❖ Meshing of geometry using Ansys ICEM-CFD, TurboGrid, etc.
- ❖ Design optimization using the Lagrange multiplier method, Genetic algorithms, Particle Swarm Optimization method, and Neural Networks
- ❖ Motion Simulation, Vibrational, and Dynamics Analysis using SolidWorks, and Siemens NX 12
- ❖ Electronics Cooling using Ansys ICEPAK, and Autodesk CFD
- ❖ Material Selection
- ❖ Computer Added Manufacturing, and 3D Printing
- ❖ MATLAB, Simulink, C++, Python
- ❖ Automotive Design using Siemens NX 12, and CATIA V5
- ❖ Microsoft Project & Microsoft Office

💼 PROJECTS

Aug17 – Nov17: Material selection for Air-Craft Wing (Dr. Jayant Jain)

Aug17 – Nov17: Hybrid Powered Bicycle (SolidWorks and Ansys) (Dr. BP Patel & Yunis Patel)
- ❖ Solar panel on the rear wheel plane with tilting mechanism, and auto deployment
- ❖ Regenerative braking system and pedal generator

Aug17 – Nov17: Design Study of Six Components Strain Gauge Balance for the aerodynamic study of aircraft in wind tunnel study (Dr. S.N Singh)

Jul18 – Dec18: Analysis and Design of a Vehicle Suspension System (MATLAB and Simulink) (Sohel Ahmad)

Jun13 – Apr14: Design Study of Hydrogen Fuel Cells for Automotive Applications & Effects of Micro Structure on Mechanical Properties of Plasma Nitrated ASS 304 & ASS 316 for Hydrogen Fuel Cell (Dr. Pankaj Singh)
- ❖ Studied the PEMFC fuel cell and the microstructure and mechanical properties of ASS 304 and ASS 316
- ❖ Prepared sample for plasma nitriding and study of the plasma nitriding process
- ❖ Compared the microstructure and mechanical properties of the plasma nitrated samples to propose it as a replacement for graphite bipolar plates

💼 INDUSTRIAL PROJECTS

- ❖ Development of Air Purifier (AEREM 100, and AEREM 1000, Launched)
- ❖ Development of Miraj Roti Master (Chief Designer and Product Ownership: This is a Roti Making Machine that uses raw ingredients like wheat flour, water, flavors, and oil. I created USP by reducing the cycle time from 1.5 minutes to 1 minute, Reduced the energy consumption by using hybrid heating models (Infrared, Induction, and Resistive heating), reduced the product cost by reducing the number of components, and brought the quality of the Roti as if it is manually prepared. So, I brought a failed project ahead of all competitors in this segment. The product is about to launch; the Product website is live.)
- ❖ Premium Quality Drinking Water bottle and Plant setup Project (Miraj Blu Drinking Water, Launched)
- ❖ Development of Smart Irrigation System (Development of Irrigation Infrastructure planner, and Water Management System to promote DIY in agriculture to lower the irrigation infrastructure cost, prototype and demo version of the android and the web application are completed)
- ❖ Development of Mobile Operated Medical Kits (Concept was to integrate IoT-based medical devices, and the medical community to provide quality medical care in the remote areas of India, and neighboring countries)
- ❖ Development of a Vertical Lift Conveyor System for Material Handling
- ❖ Development of Flavoured Water Purifier for domestic application (In concept development phase)

💼 TRAINING & CERTIFICATIONS
- ❖ Industrial Training: Imperial Auto Industries Limited (26th June 2013 - 6th August 2013), Faridabad, Haryana
- ❖ Project: Brazing filler material selection
- ❖ Achievements: Training Certificate

Training and Certificate:
- ❖ SolidWorks & NX11, Plastic Parts design, GD&T, surface modeling, FEA, and Automotive design using Siemens NX Software from Tata Technologies
- ❖ Specialization in Engineering Project Management from Rice University
- ❖ Specialization in Autodesk CAD/CAM/CAE for Mechanical Engineers from Autodesk
- ❖ Specialization in Global Procurement and Sourcing from Rutgers University
- ❖ Six Sigma (Green Belt) University System of Georgia
- ❖ Business Strategies from the University of Illinois at Urbana-Champaign
- ❖ Ansys ICEPAK Simulation Training from Skill-Lync
- ❖ Training in Injection Mold Fundamentals, and Injection Molding Basics from Tata Technologies.

📇 PERSONAL DETAILS
Languages Known: English & Hindi
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