

Masud Nawaz, P.E.

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CERTIFICATIONS & AWARDS

- **Licensed Professional Engineer** -Texas P.E.L.S., Active License No: 130430

TECHNICAL SKILLS

CAD and Analysis Software

- Modeling and drafting – Autodesk Inventor, Solid Works, Siemens NX
- FEA – Autodesk, ANSYS, Solid Works
- CFD – Autodesk CFD, Solid Works
- Dynamics Simulation – Autodesk

Programming Software

- MATLAB, Simulink
- Mathcad

Project Data Management Software

- Solid Works Vault (PDM)
- Siemens Teamcenter
- SAP

Microsoft Office Suite

- Word, Excel, Power Point, Power BI, MS Dynamics 365, and SharePoint

Other Skills

- Product Development
- Project Management
- Manufacturing
- Data Analysis
- GD&T

EDUCATION

- Georgia Southern University, Statesboro, GA
M.S., Applied Engineering (Major in Mechatronics), GPA: 4.0 / 4.0
- Bangladesh University of Engineering and Technology, Dhaka, Bangladesh
B.S., Mechanical Engineering

PROFESSIONAL EXPERIENCES

National Oilwell Varco, Houston, Texas

August 2022 to Present

Lead Mechanical Engineer

- Lead a team of 3 personnels to help, supervise and approve their designs to make sure it matches stakeholder expectations.
- Develop multi-body dynamics models for rotary inspection machines.
- Develop control strategies for linkages, actuators and perform dynamic simulation.
- Analyze fluid flow path and perform flow simulation (CFD) to reduce pressure drop and flow turbulence.
- Carry out finite element analysis (FEA) of rotary machine components, sub-assemblies, and related support structures to determine stress, strain and, corrosion wear out allowable limit.
- Verify the FEA and CFD results with calculations based on design and theory for mechanical components and assemblies and using standard engineering principles.
- Perform design iterations and optimization studies to identify best design solutions to meet design specifications and customer requirements.

BICO Drilling Tools, Houston, Texas
Senior Mechanical Engineer

August 2020 to August 2022

- Optimized existing component design using Finite Element Analysis (FEA) for improved performance and cost reduction.
- Designed several novel robust components to perform reliably while withstanding harsh downhole conditions seen during operation.
- Performed Computational Fluid Dynamics (CFD) to analyze flow trajectory, velocity, pressure, and erosion of parts.
- Manage the ECN processes, executed required changes accurately and effectively disseminating disposition of changes to all impacted stakeholders.
- Participated in technical design reviews of products and design requirement documentation.
- Utilized standard engineering processes and concepts to provide technical support to engineering team.
- Perform root-cause analysis of issues detected in development and existing products.
- Provide engineering support/solution to vendors as needed to manufacture components/parts.

Halliburton, Houston, Texas
Senior Manufacturing Engineer

August 2018 to May 2020

- Guided the production department to troubleshoot and resolve technical problems.
- Designed and build/procure fixtures and tools using SolidWorks for manufacturing.
- Facilitated engineering solution/support tools.
- Implemented in-house repair process, to save on cost and reduced lead-time on repair tools.
- Collaborated Value Stream Mapping (VSM) on new tools with stakeholders to identify manufacturing build time, fixtures, procedures, checklists, and routers.
- Co-ordinated Health, Safety & Environmental projects, quality, cost saving and continuous improvement projects.
- Collaborated in a cross functional team environment with production group leads, technicians, procurement, planning, sourcing, suppliers, and other support teams to complete projects to meet production, quality and cost savings within schedule and budget.
- Instructed engineering disposition to suppliers submitted Request for Assistance (RFA), and work on field submitted Request for Technical Assistance (RTA).
- Conducted Process Failure Mode and Effect Analysis (PFMEA) on new tools during prototype state.
- Reviewed hydraulics test data: functional block diagram, hydraulic schematic, electric motor, and hydraulic pump.

Epiroc Drilling Solutions, Dallas, Texas
Design Engineer II

September 2017 to August 2018

- Designed obstacle detection and proximate detection systems for automation function during operation of mining tools.
- Analyzed vibration and shock load on sensors and mitigate sensors vibration failure.
- Wrote automation features test plan and conduct test on drilling rigs.
- Influenced in a cross-functional team to develop new products for drilling rigs to operate fully autonomous.

National Oilwell Varco, Houston, Texas

June 2013 to April 2017

New Product Development Engineer (June 2013 to June 2017)

- Created 3D modeling and 2D production drawings of components, Bills of Material (BOM) and assemblies. Applied GD&T and tolerance stack-up analysis on parts/assemblies.
- Prepared Engineering Change Order (ECO), design reviews with product line and engineering experts.
- Coordinated with vendors to make prototype parts, developed, and conducted test in lab and field to verify design.
- Investigated and troubleshot design related problem during lab and field test.
- Created documents for the tool's operation, maintenance, and product inspection procedure.
- Performed FEA using SolidWorks simulation and ANSYS static structure for design verification and validation.
- Designed single and double shoulder thread connections. Calculated make-up torque, tensile load capacity and Dog Leg Severity in accordance with API 7G2 and DS1.
- Conducted pressure drop, collapse pressure calculation for Core Barrel in accordance with API 13D & 5C3 specifications.
- Performed physical modeling of drill string axial excitation/vibration tools using MATLAB for friction reduction and motion optimization. Verified the physical modeling with lab test runs.

Advance Manufacturing Engineer (July 2016 to April 2017)

- Performed Design of Experiments (DOE) to reduce process variations and improve process consistency for injection molding stator manufacturing processes from blasting, adhesive application, rubber injection, curing to finished product.

GE Transportation, Erie, Pennsylvania

September 2012 to June 2013

Value Analysis and Value Engineering (Contractor)

- Performed cost optimization through design for the locomotive engine cooling, ventilation, and compressed air subsystems.
- Redesigned the locomotive engine support system skid and blower mounting bracket, performed static structural analysis for 3g buff & lift load and modal analysis using ANSYS workbench.
- Performed design/tollgate review, interacted with supplier for quotes/prototypes on modified design.

MEGA Corporation (Engineering & Consulting), Kanagawa, Japan

February 2007 to March 2009

Technical Consultant (Suzuki Motor Corporation)