PROCESS ENGINEER
Subramanian Veerappan

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🌐 https://subbu1310.github.io/

Summary

Process Design Engineer with experience in thermal systems, process simulation, and FEED-stage industrial plant development. Skilled in process modelling, equipment sizing (pumps, control valves, PSV), and development of PFDs and P&IDs. Strong background in heat transfer analysis, mass and energy balances, process safety, and data analysis to support engineering decisions within multidisciplinary teams.
Portfolio & Project Samples: subbu1310.github.io

Work Experience

PROCESS DESIGN ENGINEER
MAKEEN ENERGY EnviroTech, Denmark
September 2024 - September 2025

- Supported to FEED-stage development of an industrial pyrolysis plant by building and refining process simulation models in DWSIM to validate mass and energy balances and support design decisions.
- Executed and reviewed Pressure Safety Valve (PSV) sizing and safety calculations according to industry standards.
- Developed, Reviewed and validated Process Flow Diagrams (PFDs) and Piping & Instrumentation Diagrams (P&IDs) for the Fredericia plant as part of the FEED.
- Acted as a coordination point between Danish process engineers and the Indian piping team, resolving technical queries and supporting integration of process and piping deliverables.
- Applied Python and data analysis techniques during root-cause investigations to interpret large datasets and support process performance improvements.
- Performed heat transfer calculations to simulate nitrogen flow dynamics, ensuring a positive pressure gradient for safe reactor shutdown and air flow prevention.
- Performed hydraulic calculations and used FLUIDFLOW to help senior engineers model pressure losses in pipes.
- Contributed to technical documentation, including functional descriptions and design specifications of components.

PROCESS SIMULATION ENGINEER INTERN
MAKEEN ENERGY EnviroTech, Denmark
August 2024 - September 2024

- Designed the initial process flow model for the Fredericia pyrolysis plant using DWSIM, laying the foundation for process simulation and component selection.
- Created BFDs and stream data tables for early-stage process development activities.
- Contributed to process documentation and collaborated with senior engineers on system layout and mass/energy balance evaluations.

Certifications & Technical Training

Certifications
- Lean Six Sigma White Belt & Yellow Belt - Quality Gurus
- PSV & Flare Sizing - EIEPD
- Pump curves, sizing and modelling
- AutoCAD P&ID Essential Training

Technical Training
- Compressor sizing
- Control Valve Sizing
- Heat Exchanger Design, Operation & Maintenance

Volunteer

Dansk ICYE
Camp Committee Member
March 2025 – Present
- Contribute to planning, coordination, and smooth execution of national camps.
- Collaborate with team members to manage logistics, activities, and participant engagement.
- Represented Dansk ICYE at International ICYE camps across the EU to exchange knowledge and best practices for effective camp management.

Educational History

MASTERS IN ENERGY ENGINEERING SPECIALIZING IN THERMAL AND PROCESS ENGINEERING
Aalborg University, Aalborg, Denmark
2021-2024

B-TECH MECHANICAL ENGINEERING WITH SPECIALIZATION IN ENERGY
Shiv Nadar University, Uttar Pradesh, India
2016 - 2020

Skills

- **Process Design & Engineering** - Process simulation, mass & energy balances, heat transfer calculations, hydraulic calculations, equipment sizing (pumps, control valves, PSV), PFD & P&ID development, process safety fundamentals
- **Simulation & Engineering Tools** - DWSIM, Aspen HYSYS, FluidFlow
- **Data Analysis & Programming** - Python , Excel, MATLAB
- **Design & Documentatio**n - Technical datasheets, process documentation, functional descriptions, design specifications
- **CAD & Drafting** - AutoCAD Plant 3D, Microsoft Visio

Achievements

- Published a conference paper titled **"Performance improvement of PVT module with applications of nano-fluids and phase change materials: A review"** at ICE3-2020
- Received a **UPCST grant of Rs 20000** for research work.
- Received a **'Class A' scholarship** to do study Mechanical Engineering at Shiv Nadar university and was also placed in the **Dean's List** in one of the semester for exceptional performance.

Languages

Tamil - native
English - Bilingual proficiency
Hindi and Telugu - Conversational proficiency
Danish - Started learning

Reference

David Junkuhn Friis
Process Design Manager, Makeen Energy
Former Manager at Makeen
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Randers,Denmark

About me

I'm a very honest and friendly person who loves to travel to explore new places just as much as I enjoy relaxing with good music. In my spare time, I'm always up for activities such as outdoor sports like badminton or cricket, or a fun board game night with friends or anything where I have to be active. I also enjoy attending events, social gatherings and creating memorable experiences with people.