


# PROCESS ENGINEER

Subramanian Veerappan

+45 50290128  
vrsubramanian13@gmail.com  
Randers SV 8940

 [www.linkedin.com/in/subramanian-veerappan-b195011a0](https://www.linkedin.com/in/subramanian-veerappan-b195011a0)

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## Summary

Process Design Engineer graduate with hands-on experience in sustainable energy systems, with strong technical skills in coding, process modelling softwares, PFD and P&ID drafting, sizing of equipments and handling of large data sets and data analysis. I also bring strong process optimization and continuous improvement mindset with Lean Six Sigma Yellow belt. Seeking a Process Engineering role with a element of design component. I am open to travel or relocate if needed.

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## Work Experience

### PROCESS DESIGN ENGINEER

MAKEEN ENERGY EnviroTech, Denmark

September 2024 - September 2025

- Was part of the FEED studies and developed the initial pyrolysis model in modelling software(DWSIM).
- Produced and analyzed data from the DWSIM model for better understanding.
- Performed and reviewed Pressure Safety Valve (PSV) sizing and safety calculations for reactors and condensers following 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.
- Coordinated with cross-functional engineering teams (Denmark & India) to integrate process and piping design.
- Performed data analysis and Developed PYTHON scripts for large data sets during the root cause analysis for better visualization and better understanding.
- Performed heat transfer calculations to simulate nitrogen flow dynamics, ensuring a positive pressure gradient for safe reactor shutdown and air flow prevention.
- Utilized FLUIDFLOW to model pressure losses and optimize piping system layouts.
- Contributed to technical documentation, including functional descriptions and design specifications of components.

### PROCESS DESIGN 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.

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## Professional development

### Certified Lean Six Sigma White Belt and Yellow Belt - Quality Gurus

Accreditted certification from from Quality Gurus Inc.

### PSV Sizing and Flare Sizing - EIEPD

Certified course for PSV and flare sizing from basic to advanced from EIEPD

### Pump, Compressors and Control Valve sizing - Udemy

Certified Udemy Course for umderstanding and designing of centrifugal pumps, compressors and control valves using excel.

### Heat Exchanger Design, Operation and Maintenance

Certified course to understand, operate, design, and troubleshoot heat exchangers for optimal plant performance.

### AutoCAD P&ID Essential Training - LinkedIn Learning

Certified course from LinkedIn Learning

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## 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.

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## 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

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## Skills

- Process modeling & simulation (DWSIM, Aspen HYSYS, FluidFlow, MATLAB, Python)
- PFD & P&ID development (AutoCAD Plant 3D, Microsoft Visio)
- Process optimization and Continuous improvement.
- PSV, Equipment sizing and datasheets development
- Energy and Material Balance
- Heat transfer calculations
- Data analysis & visualization (MATLAB, Excel, Python)
- Technical documentation & presentation (LaTeX, PowerPoint)

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## 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.

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## Languages

**Tamil** - native

**English** - Bilingual proficiency

**Hindi and Telugu** - Conversational proficiency

**Danish** - Started learning

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## Reference

### David Junkuhn Friis

Process Design Manager, Makeen Energy

Former Manager at Makeen

DJF@makeenenergy.com

+45 42433362

Randers, Denmark

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## 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.