

Professional Summary

- With 2.1 years of experience as Senior Engineer in PVC production processes and dedicated to driving efficiency improvements, cost reduction, and elevating product quality.
- Proficient in conducting hydraulic and thermal calculations, as well as developing PFDs, P&IDs, and equipment sizing. Seeking a Process Engineer position to apply proven expertise in process optimization and project management, contributing to the advancement of achieving organizational goals.

TECHNICAL SKILLS

Process Design and Optimization | Equipment Design | PFD,P&ID Development | Cause and Effect Matrix | HAZOP,SIL,PHA | Pump Hydraulics and Line Sizing | Lean Manufacturing | Multidisciplinary Collaboration | Mass and Energy Balance | Regulatory Compliance | Data Analysis | Automation and Process control | Quality and Environmental Assurance | Material Science

SOFTWARE SKILLS

Aspen Hysys | Microsoft Office Suite | HTRI | Minitab | MATLAB | Aspen Plus | Power BI | Visio | Oracle ERP

Work Experience

SENIOR ENGINEER,
CHEMPLAST SANMAR LIMITED, METTUR

MARCH 2024 – JULY 2024

- Ensuring efficient operation of Exothermic Polymerization reaction by maintaining Process parameters to yield Quality Product and to improve **conversion to 83%**.
- Prepared Pump hydraulic, **Line sizing** and thermal calculations on piping systems, **control valve sizing, PSV and relief valve** calculations ensuring optimal performance in both steady state and transient operation.
- Developing and Implementing Continuous improvement strategy to reduce batch cycle times by **15%**, increase **Yield** by **5%**, improve operational ease and ultimately leading to **20% cost effective production**.

ENGINEER,
CHEMPLAST SANMAR LIMITED, METTUR

MAY 2023 – FEBRUARY 2024

- Defined and sized equipment including **pumps, heat exchangers, distillation columns, compressors, separators, reactors** and instrumentation, issuing relevant Process Data sheets and Package Duty Specifications for successful implementation.
- Conducted process simulations and analyze results to optimize system performance and ensure compliance with safety and regulatory standards. Performed line sizing calculations to ensure optimal flow rates and pressure drops in process piping systems.
- Monitor and supervise day-to-day operations of the PVC manufacturing plant. Ensure compliance with standard operating procedures (SOPs) and safety protocols. Continuously assess and improve PVC (**micro suspension resin**) production processes through spray drying for efficiency, cost-effectiveness, and quality.
- Elaborated **Piping and Instrumentation Diagrams (P&IDs)** and **Cause and Effect Matrices** to facilitate clear communication within the project team. Being a part of multidisciplinary project reviews includes **HAZOP, HIRA** meetings and performed documentation work related to British Safety Council (BSC 5 star) audit, Group safety audit, management of change (**MOC**).
- Managed Reactive Production of PVC from VCI and efficient handling of exothermic reaction by maintaining the process parameters to yield quality product. Ensured **regulatory compliance** of process changes and provided clear, concise project progress reporting.
- Collaborated effectively with cross-functional teams, showcasing strong interpersonal and communication skills. Specify the types and quantities of raw materials and chemicals required for PVC production. Optimize formulations for different PVC grades and applications.

- Engaged in Panel & Field Operation of 200 TPD of Poly Vinyl Chloride Resin. Manufacturing plant and increased Productivity by **2.5%** and achieved the Highest ever Production.
- Computed documentation for Production Report, Monthly Efficiency Report, Equipment History Card and Maintenance Report and cut down paperwork by 50%. Also, performed root cause analysis and implemented corrective action.
- Prepared Process Flow Diagrams (PFDs), Utility Flow Diagrams (UFDs), SOP for RVCMP Project and carried out Mass and Energy Balance and Power Consumption calculations.

Project and Achievements

1. Design a **Plate Finned Heat Exchanger** for optimization of PVC production by improving the inlet temperature of the spray dryer from **190 °C to 195 °C** using **Aspen HYSYS**.
2. Commissioning and erection of **Double Pipe Heat exchanger** for recovering unreacted VCl traces between **8000 to 10000 ppm** from PVC slurry which is recovered by **70%** by heating through DPHE.
3. Replaced Cooling water Control Valves with large size valves and increased the **Stroke Length of Control valves** to improve the Performance of Polymerization Reactor.
4. Reduction of Power Consumption in spray dryer unit from **195 KW/ MT of PVC Resin to 190 KW/MT** altering motor pulley diameter.
5. Replaced **Plate Heat Exchanger** with **Shell and Tube Heat Exchanger** for heating the Hot Water used for heating the Polymerization Reactor and reduced the heating time of Reactors by **10%** from **1.45 hours to 1.30 hours**.
6. Improved the Performance of Polymerization Reactors (Reduction of Batch Cycle Time) by providing **Slip Plate/ Restricted Orifice Plate** to Jacket's Nozzles to reduce **Chilled Water Demand** and to maintain Chilled Water Header Pressure at 5 kg/cm².
7. Erected **Dustex System** at PVC Resin Bagging area for eliminating Resin Spillage during Packing and avoiding dust emission.

Course and Certification

- Completion of **Comprehensive Overview on Process Design and Technical Safety Studies** in oil & gas industry course in **iFluids**.
- Completion of **Mini Diploma in Process Engineering** course in Aaharya Technologies.
- Completion of **Aspen Plus V11 masterclass** in Udemy
- Completion of Lean Six Sigma Course in Coursera
- Completion on Supply chain management Course in Coursera.
- Course Completion in **Minimizing and Identifying Process Safety Hazards** on **AICHE**.

Education

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| • B. TECH CHEMICAL ENGINEERING | (2018 - 2022) |
| <i>Amrita Vishwa Vidhyapeetham, Coimbatore</i> | CGPA 7.65/10 |
| • HSLC | (2017 - 2018) |
| <i>Senthil Public School, Salem</i> | 74% |
| • SSLC | (2015 - 2016) |
| <i>Senthil Public School, Salem</i> | CGPA 9.2/10 |