NAWAT KAWKEEREE

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SUMMARY

I have graduated from Chemical Engineering from National University of Singapore, with 2 years of working experience in a Semiconductor Manufacturing company with interest to work in Engineering Procurement Construction company in Offshore Oil and Gas industry. In my current work, I managed 5 process improvement projects and qualified 1 project by changing gas composition, resulting in process's operating expenses reduction in USD$100K/year. In my university times, I have worked on a Plant Design Project performing detailed engineering designs of 2 distillation columns according to ASME VII yielding 99.0% purity and 95.0% recovery of palmitic acid, together with creation of engineering documents such as PFD, P&ID and Energy Stream Table.

EDUCATION

National University of Singapore (NUS) **Aug 2018 – May 2022**

- Bachelor of Engineering in Chemical Engineering, Honours
- Current Cumulative Average Point (CAP): 4.24/5.00
- Relevant Modules: Programming Methodology; Process Safety, Health and Environment; Process Engineering for Gas/LNG and Pharmaceutical Industries; Advanced Process Dynamics & Control; Process Modelling and Numerical Solutions; Project Engineering; Optimisation of Chemical Process; Sustainable Process Development

PLANT DESIGN PROJECT

Palmitic Acid Recovery, Plant Design Project, Final Year Design Project **Jan 2022 – May 2022**

- Collaborated with 5 team members to develop preliminary design and economic cost analysis on Oleochemical refinery plant with HAZOP study of 8 nodes on 1 P&ID and conducted Life Cycle Assessment to achieve 0.12 of waste per products
- Designed 2 vacuum distillation columns as per ASME VIII Standards with structured packing using Aspen HYSYS Software by varying 3 parameters with Sensitivity Analysis and conducting Design of Experiment Multivariable Optimisation with MATLAB to achieve best combination for lowest Total Annualised Cost (TAC) of S$11.67M, yielding 99.0% purity and 95.0% recovery of palmitic acid
- Performed a heat integration study on 2 vacuum distillation columns using Aspen HYSYS Software through heat transfer from condenser to reboiler with Mechanical Vapour Compression, reducing TAC by 7.54%

WORK EXPERIENCE

Process & Equipment Engineer, Micron Semiconductor Asia Pte Ltd. , Singapore **Aug 2022 – Present**

- Qualified 1 Process improvement project by varying gas flow composition through performing experimental studies using Design of Experient and analyse findings using JMP Pro Software, reduce process's operating expenses by approximately USD$ 100K/year
- Lead a project in developing an automated Gas Qualification Information Tracking System (GQIS) Platform with Agile Project management Methodology for Dry Etch department using Microsoft Excel, Power Query, Visual Basic Application, Microsoft Access, Power BI and Power Automate to efficiently keep track of all incoming gas qualifications, hence improving workflow's efficiency through reduction of time spent by 60%
- Developed a dashboard using Tableau deploying to Singapore Front End site to efficiently monitor all processing steps business compliance together with automated email trigger notification on manufacturing process that fails the compliance using Microsoft Excel Visual Basic Application hence improving workflow's efficiency by 50%
- Collaborated with Equipment Engineer and Process Control Statistic department to drive corrective and prevention action (CAPA) using 8D methodology and 5Why analysis for major process deviation affecting 1300 wafers

Health, Safety, Security, Environmental Intern, TPSC-Asia Pte Ltd, Singapore **May 2021 – Dec 2021**

- Updated 1 P&ID using AutoCAD 3D to correct pipe specifications and off-page connectors and scribed during HAZOP and P&ID discussion with PHA Pro 8 in preparation for upgrading the company's wastewater treatment plant system
- Converted 1 Styrene Production line from P&ID to PFD through conducting line traces during plant walking inspection, and verified with Process Engineer, with intention to assist new technicians when onboarding to the company
- Reviewed completed Safety Case report and consolidated and analysed HAZID register, HAZOP of 86 Nodes, 1 LOPA analysis, and 3 SCE events to prepare On-site verification with the Ministry of Manpower (MOM)

Process Safety Engineer Intern, Total Process System Pte Ltd, Singapore **Dec 2020 – Jan 2021**

- Designed a sprinkler system involving 26 sprinklers at gas trailer unloading zone with supervisor's supervision using Microsoft Excel as per NFPA 15 regulations

EXTRA-CURRICULAR ACTIVITIES

F10 Dragonboat Interest Group Lead, Micron Semiconductor Asia Pte Ltd. , Singapore

Jan 2023 – Present

- Lead 2 Dragonboat Orientation Program with 7 team members to introduce 50 Micron Team Members to basic Dragonboat orientation skills, through creating program proposal and budget planning of the event.

Neighbourhood Head, Phoenix Neighbourhood House Committee, College of Alice & Peter Tan

Apr 2019 - Aug 2020

- Headed a committee of 11 members across academic year in planning enrichment platforms and initiatives for bonding among 120 residences in neighbourhood, and fostering camaraderie among freshmen and seniors
- Coordinated with freshman orientation organizing committees to recruit and vet through competent orientation group leaders for events to be put in charge of freshmen

SKILLSET/ADDITIONAL INFORMATION

- Fluent in English, Thai, and Chinese (both spoken and written)
- Proficient in Power BI, Visual Basic Application, JMP Pro 17, MATLAB, Microsoft Office Suite, and intermediate knowledge of C, Python, ASPEN HYSYS, AutoCAD Plant 3D, Tableau, PHA Pro 8, and Power Automate
- Pursues Dragonboat and personal development by reading books and listening podcasts, and taking online classes