**Zailin Yuan**

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**POSITION DESIRED**

2020 Campus\_CDP\_Chemical Engineer, Zhangjiagang, UOP, PMT HRD74343

**EDUCATION**

**M.S., Chemical Engineering** Dec.2018

University of Southern California (USC)

GPA: 3.3 / 4.0

Courses: Process Modeling & Analysis, Viscous Flow, Heat & Mass Transfer, Reaction Kinetics, Thermodynamic

**B.S., Chemical Engineering**  June.2016

Qingdao University of Science & Technology (QUST)

**WORKING EXPERIENCE**

**HUAYIHEFENG Specialty Chemicals - 50000 t/y special ester products project** Jan.2016-May.2016

* Created and developed industrial chemical process and plants of producing 14 types of esters. Drew chemical process flow diagrams (PFD) using *AutoCAD,* designed *PID* on *AutoCAD.*
* Communicated with customers on technical details. Upgrade process and equipment design according to customer requirements.
* Compiled part of feasibility study report. Specified product’s instructions and safety specification on all raw chemical materials, products, by products and auxiliaries.

**RESEARCH**

**Synthesis of *3-Cyclohexene-1-methanol-6-methyl methacrylate*** May.2015

* Tested optimal reaction conditions of synthesizing 3-Cyclohexene-1-methanol-6-methyl methacrylate.
* Built a *reactive distillation* plant coupled with vacuum distillation devices to separated product / by-products.
* Tested repeatability of the most effective catalyst, recording its recycling time vs its performance.
* Designed orthogonal tests to find the best combination of all considered reactions.
* Analyzed fraction of product / by-products by GC, characterized product by 1H-NMR, calculated products’ yield.
* Presentation and thesis oral defense.

**PROJECTS & COMPETITIONS**

**Data Analytics and Monitoring on Tennessee Eastman Process** May.2017

* Employed PCA, LDA and CCCA methods using R and MATLAB modeling on both the quality and process datasets of the Tennessee Eastman Process.
* PCA combined with T2 and Q limit to detect potential disturbance in distorted data sets.
* Introduced LDA method to decide which observation belongs to normal region/abnormal region.
* Used CCCA method to monitor the input and output of process with disturbances.
* Presentation and oral defense.

**Chevron-USC Student Design Competition** Jan.2017-Feb.2017

* Collaborate working to analyze cost recovering period of replacing *Dimersol* process by *Difasol* process.
* Estimated prices of raw materials, key equipment and catalysts, inflation and costs.
* Presentation and oral defense.

**Depropanization Process Design** Nov.2013

* Led a team to design *Depropanization Distillation* Devices. Designed process framework with lowest energy consumption. Designed PFD on Aspen Plus.
* Performed process simulation on *Aspen.* Examined reliability of simulation results. Determined column type, stages, feed stage and all equipment parameters, determined plane column/pump/heat exchanger parameters. Analyzed sensitivity regarding feed stage.
* Operated simulation and animation of plant’s startup/shutdown on *Yokogawa CS 3000* system (DCS) by setting process parameters.

**SKILLS**

* Chemical Lab Skills: Chemical products tests and analysis (GC), Chemical Lab experiences
* Programming Languages: Java, C/C++, JavaScript, HTML, CSS, Python
* Tools: AutoCAD, Aspen Plus, Eclipse(Java), Matlab, R

**AWARD**

* Second prize in *“Chevron Student Design Competition”* Feb.2017
* Second prize in Depropanization Process Design Nov.2013
* Activist in Student Community (Tech & Innovation club) 2011-2012