

Yuxin Zhang

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Education

Master of Engineering, Chemical Engineering
University of Toronto

Sep 2022 – May 2024

Bachelor of Applied Science, Chemical Engineering
University of British Columbia

Sep 2017 – May 2022

- Major GPA: 3.65/4.0

Publication

- Liu Xiuming, **Zhang Yuxin** (2022). Measurement-Based Experimental Research for High Concentration Organic Wastewater in Urban Areas (in Chinese). *Chinese Science and Technology*.

Awards & Recognitions

- **Dean's Honour List (2021, 2022)**
Award issued from achieving a standing of 80% or better while taking a course load of at least 27 credits
- **Third place in the Rain It In Competition**
An across-Canada competition that challenges to create climate-resilient solutions that focus on intense rainfall and flooding

Research Experience

Research Group Member, Chinese Academy of Sciences (part-time, remote), Vancouver, BC

Sep 2021 – Mar 2022

- Conducted studies on TOC and COD measurements
- Assisted in developing research strategies
- Created and maintained spreadsheets for data recording and analysis. I implemented an effective system for recording data by coding the process in Excel Macros, and reduced the document time by 40%
- Maintained 100% error-free documentation for all laboratory tests

Laboratory Assistant, Chinese Academy of Sciences, Guangzhou, China

May 2020 – Aug 2020

- Tested samples for required wet chemistry assays and archived optimal quality control through detailed testing
- Transferred the collected data to Microsoft Excel for an effective data management
- Communicated regularly with the research team to keep everybody informed of the testing results and progress
- Prepared, labelled samples, and staged them under required conditions
- Assisted in managing laboratory space by keeping a well-stocked inventory and maintaining equipment

Work Experience

Intern, RAM Consulting, Vancouver, BC

Jun 2021- Aug 2021

- Reviewed volume-based estimate models for the marine terminal project. Errors were identified and I was able to improve the estimates by 30%
- Reviewed monthly invoices and updated project cash flow graphs to illustrate the status of our budget, per the client's request
- Inspected contractor's construction activities and summarized work reports
- Used Excel Macros to export information from MS Project to Excel
- Attended weekly project meetings with clients and contractors and produced meeting minutes

Project Experience

Bipolar Membrane Electrodialysis for Ammonia Recovery from Wastewater Jan 2022 – Apr 2022

- Researched the principle and experimental details of the bipolar membrane electrodialysis (BMED)
- Designed a new solution with a three-compartment membrane layout
- Conducted literature review of applied voltage, current densities, and operating time on the performance of ammonia recovery and indicated options for improvements

Biodegradable LDPE Production from Ethanol (Capstone) Sep 2021 – Apr 2022

- Researched and analyzed the current biodegradable low-density polyethylene (LDPE) demand and generated an innovative idea of adding a new additive (D2W™) to make it more environmentally friendly
- Created an Aspen Plus simulation with 7-unit operations including recycle streams and submitted multiple reports capturing the process details
- Generated 7 Process Flow Diagrams (PFD) and 7 Piping and Instrumentation Diagrams (P&ID) to demonstrate the process
- Performed the Hazard and Operability Analysis (HAZOP) study and environmental impact assessment
- Calculated the Fixed Capital Investment (TCI) using Lang Factor and evaluated the Total Product Cost

Process Control of Methanol Purification Sep 2021 – Dec 2021

- Designed a control system with 2 advanced control techniques (cascade and split-range control)
- Built a Simulink file to tune controllers, optimize setpoint tracking and disturbance rejections performances
- Compared performance of the control system with a traditional feedback loop and suggested possible improvements

Simulation of Soda Ash Production Sep 2020 – Dec 2020

- Researched and selected a reaction pathway employing the Solvay process to produce soda ash
- Created an Aspen Plus simulation with 4-unit operations including reactors and fractionating columns and submitted multiple reports capturing the process details
- Utilized sensitivity analyses and set out design specifications to maximize soda ash production while still adhering to safety guidelines listed in the research paper

Life Cycle Assessment of Electricity Generation from Biomass and Natural Gas Sep 2020 – Dec 2020

- Compared GHG emissions from two resources of electricity generation in Canada
- Compiled GHG emissions data for the different compounds emitted through the various life cycle stages (production, transportation, end-use)
- Evaluated the Global Warming Potential (GWP) of each heating technology and recommended the resource of electricity generation due to its smaller carbon footprint

Skills

- **Essentials:** Microsoft Office Suite
- **Computer:** C, Python, Aspen Plus, SolidWorks, Excel VBA, MATLAB
- **Wet Lab:** Safe Chemical Handling, Gas Chromatography, Infrared Spectroscopy, Atomic Absorption Spectroscopy
- **Language:** Mandarin (native), English (fluent), Cantonese (intermediate), Japanese (beginner)