

**XXX**

ryyrbc

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3+ years of experience in process industries and 4+ years of research experience. Process engineering experiences in the largest EPC brand, adept on process development, process improvement, throughput increase. Experiences of designing and operation of adsorption, distillation columns and utility system. Proven track record of technical and scientific writing, preparing-publishing scientific papers and conference presentations from lab/research findings. Currently looking for opportunity for internship in computational or experimental study

## EXPERIENCE

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### **CC University**

*Research Assistant*

XXX, XX

*Aug 2020 - Present*

Graduate research on computational modeling, optimization and machine learning for process systems and molecular design.

- **Derivative-Free Optimization (DFO):** DFO a balck-box optimization suite named RBFopt is used to optimize the annualized cost function of intensified chemical process. The optimization function contained twenty decision variables.
- **Competing Technology Comparison:** Cost-effective technologies are identified among the competing technologies for, both conventional and modularized configuration. The uncertainties of significant parameters were propagated to estimate the uncertainty of cost for each process. Developed Aspen Plus process simulation and automated the process simulation for assessing cost comparison at a wide range of inlet flow rate and hydrogen sulfide concentration.
- **Flexibility Analysis:** Derivative Free Optimization of Intensified Chemical Process: Balck-box optimization suite RBFopt is used to optimize the annualized cost function.

### **CC University**

*Research Assistant*

CC, AL

*Aug 2019 -Aug 2020*

Processes different material synthesis procedures such as microwave, hydrothermal, chemical vapor deposition, and self-assembly. material synthesis, physical vapor deposition techniques (sputtering, etching)

### **JJ fsfv**

*Senior BB Officer*

CC, CC

*Feb 2019 - May 2019*

Performed documentation for standard audits (JSA , WRA, CRA, PPE audits etc). Developed visual management in the production line (i.e. Pictorial SOPs). Trained operation team on standard operating procedures. Implemented product and process compliance and adherence to VV CoP. Ensured work place safety and effective communication of Safety, Health and Environment to all team members. Performed Change Control Document Review, Deviation Investigation, Effectiveness Check, OOS/OOT, Product Complaint, Addendum Audit Commitment Tracking

**Projects:** Installation of Boshch Packaging Equipment

### **JJ Equipment Pte. Ltd.**

*Process Engineer*

KK,

*Jun 2012- Dec 2014*

Commissioned process plant. Performed mass energy balances, heat transfer calculations, hydraulic calculations, PSV calculations, process design, root cause failure analysis (RCFA), troubleshooting troubleshooted process operation & PLC DCS-HMI Control Logics. PID Control loop, DMC, process Optimization

### **Project: 30 MMSCFD TEG Dehydration Natural Gas Plant:**

- Developed Heat and Mass Balance model using Aspen-HYSYS software to determine and optimize process operation and overall cost structure. Reviewed entire process PFD and PID to improve performances of facilities.
- Coordinated with plant manager and other functional department managers for timely completion. Designed plant equipment according to codes and industrial practices such as API, ASME, and TEMA.
- Coordinated proactively with the vendor that facilitated timely completion of the project. Performed Operability Study (HAZOP) and Hazard Identification (HAZID) that enabled client's engineering team to operate the plant safely.

### **Project: 1250 BPD Condensate Fractionation Plant, Sylhet Gas Field Limited:**

- Coordinated with a team of cross-departmental engineers responsible for plant startup commissioning.
- Monitored process control operations to identify and resolve technical problems. Subsequently handed over the project after ensuring optimum production level within stipulated timeline.
- Developed user interface (i.e. Allen-Bredly PLC HMI) of the process control system due to lack of available expertise. Directly contributed to save \$4000 CAD worth of consultancy expenses and 3 weeks of lead time.

## RESEARCH JOURNAL

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### PRESENTATION AND PROCEEDINGS

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XX, YY, XX "Cost-Effective Technology Identification Uncertainty Quantification of Processes." AIChE Annual Meeting, 2021

XX, YY, ZZ "Cost-Effective Technology Identification Uncertainty Quantification of Processes." AIChE Annual Meeting, 2020

XXX "Synthesis of 3D copper-cobalt oxides with different morphologies for binder-free supercapacitor electrodes." Accepted Presentation, Nano Korea Symposium 2017

XXX, XXX "Preparation of 3D mixed metal oxides with different morphologies for supercapacitor electrode application." Clean Energy Priority Research Center, 2017, Poster Presentation, Best Poster Award

## SKILLS

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**PLCs:** Rockwell PLCs, Kerberos, RFID pucks

**GMP:** ICHQ7; Training: "Overview of ICH Q7 Online Training Course" Parental Drug Association

21 CFR 11 Training: "GAMP® Data Integrity 21 CFR Part 11 Training Course T50" International Society for Pharmaceutical Engineering

**Programming:** Python, Matlab, Machine learning, LaTeX

**Process Simulation:** Aspen HYSYS, Aspen Plus, PYPESIM. Heat exchanger Design: HTRI Certified (Jakarta, Indonesia), Aspen Exchanger Design & Rating (EDR). Aspen Economic Analyzer (Graduate course), AutoCAD, Visio

**Material Synthesis Equipment:** Microwave reactor, hydrothermal reactor, chemical vapor deposition, self-assembly. Used tube furnace, ISCO pump (supercritical CO<sub>2</sub>), microwave reactor, tip ultrasonicator, cryo-refrigerator, freeze dryer, vacuum evaporator, and centrifuge)

**Material Characterization:** SEM (morphology, uniformity), TEM (morphology, uniformity, structural information), AFM (surface topographic profile), XRD (crystallographic study, unit cell parameters), NMR (local symmetry to chemical identity. Or identification of organic compounds), XPS (surface chemical composition), FTIR (chemical bonds and functional group identification), EDX (elemental composition), TGA (thermal stability analysis), Raman (molecular and structural analysis), CV (Electrochemical performance under applied potential), EIS (frequency dependent charge resistance measurements), CD (Charge-Discharge) Quantification of electrochemical Charge storage, UV-VIS (light absorbance ability), ICP-AES (Ion concentration in Solution)

## EDUCATION

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**VV University**

*Doctor of Philosophy in HH Engineering; (Ongoing)*

HHH, HH

*Aug 2019 – Present*

**JOOK University**

*Master of Science in BBB Engineering; GPA: 4.31/4.50*

HH, BBB

*Aug 2016 – Feb 2018*

**HHH University of Engineering and Technology**

*Bachelor of Science in NNN Engineering; GPA: 3.22/4.00*

HH, HHH

*Aug 2008 – Mar 2012*