

Muthukrishnan Anand

University of Alberta, No. 37, 3-336 Donadeo
Innovation Centre for Engineering,
Edmonton, Alberta, Canada T6G 2E1

<https://bit.ly/mk-personal-website>
muthukr1@ualberta.ca
[linkedin.com/in/muthu-krishnan1/](https://www.linkedin.com/in/muthu-krishnan1/)

Objective

I am currently pursuing a graduate program in Chemical Engineering to deepen my expertise and contribute to research in carbon capture and sustainability. With 5 years of industry experience in upstream process monitoring, troubleshooting, process simulation, and advanced data analytics, I aim to leverage my skills to drive innovative, data-driven solutions in the field of sustainability.

Education

National Institute of Technology, Tiruchirappalli (NIT Trichy)

Aug`15 – Jun`19

Bachelor of Technology (Hon.) - Chemical Engineering

CGPA 9.39/10

Research Experience

Undergraduate Thesis, National Institute of Technology, Tiruchirappalli, India

Jan`19 – Apr`19

- Conducted literature review on grade-2 biorefinery concept and 2,5-Furan Di-Carboxylic Acid (FDCA) biopolymer production. Assessed the feasibility of scaling up lab-scale production to an industrial level, conducting comprehensive heat and material balances, providing cost estimates, and performing high-level equipment sizing.

Work Experience

Process surveillance engineer, ExxonMobil Canada Energy, St. John's, Canada

Dec`22 – Aug`24

Provided onsite technical support for Hebron operations as the system owner for oil processing and utilities systems, focusing on troubleshooting, process optimization, and identifying opportunities for asset modifications and improvements.

- Implemented** viscosity reducing agent chemical trial, providing an additional uplift of **3.5kDb** for Hebron.
- Developed risk-based maintenance/sparing philosophy** workflow for control valves yielding an overall risk mitigation worth **11.7M\$** for Hibernia.
- Project lead** on MPG#A exhaust stack remediation for Hebron involving collaboration with operations, third-party vendors, and structural departments for a total project value of **US\$1.7M**.
- Commissioned and optimized** pioneering 3 phase level technology measurement system for Hebron (Electric Tomography), working in conjunction with subject matter experts and third-party vendor.

Process Surveillance Engineer, ExxonMobil GBC, Bengaluru, India

Jun`19 – Nov`22

Deliver process surveillance workflow support to different upstream operations for maximizing business value.

- Point of contact** for process engineering in the **cross-functional initiative** of maintenance transformation aimed at **reducing maintenance effort by 4000-man hours** for Hebron (Canada).
- OPEX reduction** of **US\$ 50k/yr.** is realized by gas lift optimization study by investigating TEG losses and establishing baseline performance for Hibernia (Canada).
- Sensitivity analysis** utilizing **HYSYS simulations** for Bonny River Terminal (Nigeria) resulted in **minimizing GHG emissions** by 30% and **power savings** of **2MW**.
- Realized cumulative savings** of **4.2M US\$** from insights generated through workflows for East Asia Platform (Nigeria).

Achievements

- Awarded **University of Alberta Graduate Recruitment Scholarship** and **Capt. Thomas Farrell Greenhalgh Memorial Graduate Scholarship** in 2024.
- Smt. G.S. Rajalakshmi Memorial Award Citation** for securing third rank in bachelor's course in 2019.
- Completed **Early Career Milestone (ECM)** in Process Engineering (2022).

Skills

Process Simulation Tools:

Aspen HYSYS, HTRI and Promax

Languages:

English, Tamil and Hindi

Programming:

Python, MATLAB, HTML and C++

Data Analytics:

SEEQ, SAS JMP, AVEVA PI and PowerBI