

# Sohrab Moradi

P.Eng. Application in Progress  
 Permanent Residency of Canada in Progress  
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## Process Engineer

### Petroleum Process Engineer | Safety & Risk Engineer

A results-driven engineering professional with 9 years of experience in the oil and gas industry, specializing in production optimization, process troubleshooting, and plant reliability improvements. Extensive expertise in process modeling, HAZOP studies, and performance monitoring. Proven ability to deliver innovative solutions that enhance operational efficiency, safety, and environmental compliance. Proficient in HYSYS, Python, and industry-standard tools.

## WORK EXPERIENCE

### Process Advisor (Remote)

ESGWAY Corporation, Houston, USA

Apr 2023-Jun 2023

- Analyzed oil and gas production data to identify energy optimization opportunities and reduce carbon emissions.
- Translated Excel-based process modeling algorithms into Python, increasing modeling efficiency by 30%.
- Delivered actionable recommendations on energy use and emissions management based on advanced data analytics.

### Process Engineer

National Iranian Oil Company, Gachsaran, Iran

Aug 2013 – Dec 2022

- Modeled and analyzed oil, gas, and water processing systems—including separators, heater treaters, compressors, flare system, and utility systems—using Aspen HYSYS to optimize performance, improve throughput, and reduce operational costs while ensuring system reliability.
- Reduced crude oil salt content by 67% enabling export compliance, through complete overhaul of dehydration and desalting unit.
- Improved three-phase separator efficiency by simulating operations in Aspen HYSYS, and implementing design modifications, reducing oil-in-water and water-in-oil levels and lowering downstream costs, and issuing updated P&IDs, datasheets, and operating procedures
- Led process and safety engineering efforts to resolve high-pressure drop issues by analyzing PFDs/P&IDs, proposing separator internal modifications, optimizing pump selection, coordinating multidisciplinary teams, and preparing updated specifications, and datasheets to boost crude oil production by 15% within schedule and budget.
- Conducted a comprehensive HAZOP study, identified overpressure hazards, and implemented safety measures such as additional PSVs and design revisions in compliance with API-520/521 and NFPA standards, collaborated with mechanical and safety teams to assess and validate changes to eliminate gas release risks and enhance overall process safety.
- Applied simulation and manual calculations using API 12J and Darcy-Weisbach equation to verify separator sizing and pressure drop analysis, cross-checked results with IPS standards, and updated process documents (PFDs, P&IDs) to validate optimized design integrity.
- Planned and executed pigging operations for high-pressure gas pipelines by reviewing P&IDs, assessing pressure and flow conditions, updating procedures, mitigating slugging and pressure surge risks through adjusted gas injection and valve sequencing.

### Hazard Identification & Risk Assessment

- Performed site inspections to identify hazards before issuing permits or doing an operational job

- Evaluated the work environment, equipment, and process conditions (fire/explosion risk for hot work, chemical hazards, confined spaces, working at height risks).

#### **Regulatory & Safety Standards Compliance**

- Enforced compliance with OHS legislation, company procedures, and industry standards (API, NFPA, ISO).
- Ensured that workers had valid certifications (e.g., confined space entry, fall protection).

#### **Permit-to-Work System Administration**

- Managed the Permit-to-Work (PTW) system for hot work, cold work, and working at height, which is a cornerstone of OHS management in oil and gas.

#### **Personal Protective Equipment (PPE) Verification**

- Checked that all workers had appropriate PPE and were physically fit for the task.

#### **Risk Mitigation & Preventive Controls**

- Implemented control measures such as fire watches for hot work, barriers for fall prevention, and atmospheric testing for hazardous gases.

#### **Stakeholder Communication & Safety Leadership**

- Coordinated with contractors, maintenance teams, and supervisors, ensuring everyone understood the safety requirements.
- Supported incident investigations, performed root cause analysis using fault tree analysis, and recommended preventative safety measures.

### **EDUCATION**

#### **Memorial University of Newfoundland (Ranked 1<sup>st</sup> in Class), St. John's, Canada**

Master's Degree – Safety and Risk Engineering Jan 2023-Aug 2024

- Project: Comprehensive Risk Assessment of a Gas Compressor Station using HAZOP and PHAST/SAFETI, including calculation of safe personnel distances and hazard zones.

#### **Shiraz University, Shiraz, Iran**

Master's Degree-Petroleum Reservoir Engineering Sep 2013-Aug 2017

#### **Petroleum University of Technology (PUT), Ahwaz, Iran**

Bachelor's Degree – Petroleum Reservoir Engineering Sep 2008-Aug 2012

### **CERTIFICATIONS**

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| • <b>TechPrep-</b> Murphy Center                                 | 2025 |
| • <b>Power BI for Data Analysis-</b> Udemy                       | 2024 |
| • <b>AutoCAD P&amp;ID Essential Training</b> – LinkedIn Learning | 2023 |
| • <b>Mastering Additive Manufacturing-</b> Memorial University   | 2023 |
| • <b>Learning Python-</b> LinkedIn Learning                      | 2022 |

### **SKILLS**

- **Process Optimization & Troubleshooting:** Specialized in identifying and resolving complex process-related issues in oil and gas production systems.
- **Process Modeling & Simulation:** Proficient in Aspen HYSYS for designing, analyzing, and optimizing processes.
- **PFDs & P&IDs:** Skilled in preparing, updating, and analyzing Process Flow Diagrams (PFDs) and Piping and Instrumentation Diagrams (P&IDs) for system design and performance assessment.
- **Reliability Engineering:** Focused on improving plant reliability and operational integrity.
- **Performance Monitoring:** Skilled in developing and implementing monitoring strategies for production systems.

- **Safety & Risk Engineering:** Experienced in conducting HAZOP studies and ensuring compliance with safety and environmental standards.
- **Technical Reporting:** Strong ability to prepare comprehensive reports and present actionable insights.
- **Tools:** HYSYS | MATLAB | Python | Excel | AutoCAD | PHAST | SAFETI | Eclipse 100/300 | Tableau | Power BI | SAP

#### **PUBLICATION**

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- Khayyat, Y., Moradi Kashkouli, S., Esmaeilzadeh, F. "Solubility of fluvoxamine maleate in supercritical carbon dioxide." Fluid Phase Equilibria 399, 2015, 98-104

#### **HONORS & AWARDS**

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- **Fellow of the School of Graduate Studies**  
Issued by Memorial University of Newfoundland · Oct 2024
- **1st Class Scholarship**  
Issued by Memorial University of Newfoundland · May 2024
- **National Iranian Oil Company Full Scholarship for Bachelor's Degree**  
Issued by National Iranian Oil Company · Sep 2008

#### **LANGUAGES**

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- English (Fluent)
- Persian/Farsi (Native)
- Dari (Fluent)
- Turkish (Native)
- Arabic (Basic)

#### **ADDITIONAL INFORMATION**

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- P.Eng application in progress with PEGNL (Result will be finalized in September)
- Legally authorized to work in Canada (Permanent Residency in Progress)
- Flexible availability including evenings and weekends
- Valid NL Class 5 driver's license with own vehicle
- Willing to relocate