



Atlantic Bhandari

Chemical Process Engineer | Process Technology | Simulation, Cost Estimation & Optimization

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Nationality: Nepalese | LinkedIn: linkedin.com/in/yourprofile

Professional Profile

Chemical Process Engineer with experience in process design, process simulation, plant engineering, production supervision, cost estimation, and optimization. M.Sc. graduate in Process Technology, with specialization in Aspen HYSYS simulation, Python-based automation, techno-economic assessment, and CO₂ capture systems.

Core Skills

Simulation	Aspen HYSYS, Aspen Plus, PRO-II, process modeling, sensitivity analysis
Process Design	PFD, P&ID, unit operation design, plant layout, heat and mass transfer
Automation	Python, Aspen HYSYS spreadsheets, Excel-based calculations, parametric studies
Carbon Capture	MEA-based CO ₂ capture, absorber/desorber systems, solvent evaluation
Cost Analysis	CAPEX, OPEX, CO ₂ capture cost optimization, NPV, techno-economic assessment
Tools	AutoCAD Plant 3D, Microsoft Excel, Aspen In-Plant Cost Estimator

Education

M.Sc. in Process Technology

Aug 2024 – June 2026

University of South-Eastern Norway (USN)

Norway

- **Master's thesis:** Process simulation in Aspen HYSYS and Python programming for automated cost optimization of CO₂ capture.
- Simulated MEA-based CO₂ capture in Aspen HYSYS v14 and connected Aspen HYSYS with Python for automated parameter studies.
- Estimated CAPEX, OPEX, CO₂ capture cost and NPV using Aspen HYSYS spreadsheets, Python and power law cost methods.
- **Group project – SIMS conference 2026 full paper submission:** Performed Aspen HYSYS v14 simulation, equipment cost estimation, and CAPEX/OPEX analysis for blended CO₂ capture solvent systems.

B.E. in Chemical Engineering

Aug 2015 – Dec 2019

Kathmandu University

Nepal

- Relevant coursework: Thermodynamics, Reaction Engineering, Heat and Mass Transfer, Process Design, PFD/P&ID Development, Unit Operations, PRO-2 simulation.

Professional Experience

Sole Proprietor – B & B Foods

Dec 2020 – Aug 2024

Tilottama

Nepal

- Developed product formulations and supported chemical composition development for food-related products.
- Supervised process operations, day-to-day production activities, planning, resource coordination, and quality-focused production practices.

CEO – True Care Business Solution Pvt. Ltd.

Jul 2020 – Aug 2024

Tilottama

Nepal

- Managed product development of chemical cleaning products, production planning, and process improvement activities.
- Coordinated business operations, product development, and production-related decision-making.

Brewer / Process Engineer – Raj Brewery Pvt. Ltd.

Dec 2019 – Jul 2020

Raj Brewery Pvt. Ltd.

Nepal

- Worked as Central Control Room Engineer for beer production processes and supported installation and commissioning of new plant units, reviewing PFD and P&ID diagrams.

Selected Engineering Projects

CO₂ Capture Cost Optimization

- Optimized heat exchanger and absorber parameters, including minimum temperature approach ($\Delta T_{\min}$), absorber stages, and gas velocity.

Water Deaeration System Design

- Designed a stripping column and three-stage energy-efficient plate heat exchanger system, reducing dissolved oxygen down to 5 ppb.

Urea Plant and Demineralization Projects

- Developed single-unit PFD/P&ID documentation for urea plant design and worked on mixed-bed ion exchange with RO water integration.

Awards, Scholarships & Additional Information

NORPART

Fully funded M.Sc. scholarship in Process Technology at the University of South-Eastern Norway (2024–2026) through the Norwegian Government-funded NORPART programme.

Best Poster Award

Best Poster Presentation Award, USN EXPO 2026 – Master's thesis work on CO₂ capture cost optimization.

Languages

English – Professional working proficiency; Norwegian – Basic proficiency; Nepali – Native

Interests

Technical simulations, process optimization, mountain hiking, instrumental music