

HAZEM MENSI

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SUMMARY

- 1+ years of experience in process engineering internships spanning gas plant feasibility studies, oilfield rehabilitation, and acid gas removal unit design.
- Skilled in dynamic and steady-state process simulation using Aspen HYSYS, HYSYS Dynamics, ProMax, and PIPESIM for transient startup, hydrate mitigation, and slug analysis.
- Delivered an 85% pressure-drop reduction and 20% diameter decrease in a heat exchanger retrofit, while reducing CO₂ to 1.86 mol% at 3,500 kW reboiler duty.
- Experienced in safety valve and equipment sizing per API 521/520, flare network design in FLARENET, and heat exchanger thermal design using Aspen EDR (HTFS) and HTRI.

TECHNICAL SKILLS

Aspen HYSYS® (Certified Expert User), HYSYS Dynamics, Process Simulation, Heat & Material Balances, BR&E ProMax, SLB PIPESIM / OLGA, Aspen EDR, HTRI, Equipment Sizing / Hydraulics, Aspen Flare System Analyzer, Aspen Plus, KBC PetroSim, AFT Fathom, AFT Impulse, AVEVA PI Vision, Python (NumPy, pandas, matplotlib), JavaScript, TypeScript, Rust, Analytical Thinking, Cross-Cultural Collaboration.

EDUCATION

National Institute of Applied Sciences and Technology (INSAT)

Engineering Degree – Chemical Engineering

Tunisia

2022-Current

PROFESSIONAL EXPERIENCE

EPPM

Tunisia

Process Engineering Intern

Jan 2026 – Aug 2026

- Performed safety valve and inlet/outlet line sizing per API 521/520 standards for new gas plant feasibility study.
- Conducted staggered blowdown analysis and dynamic depressuring simulations in HYSYS for Marsa El Brega gas plant.
- Designed flare network in Aspen Flare System Analyzer (FLARENET), including stack height and radiation analysis.
- Sized flare knock-out drums and calculated pump hydraulics and NPSH, preparing process datasheets for related equipment and heat exchangers.
- Executed heat exchanger thermal design using Aspen EDR (HTFS) and completed heat and material balance calculations in HYSYS and ASW.
- Reviewed and audited process design basis and separator calculation documents for Naft Khana Oilfield Rehabilitation PMC project.
- Modeled multiphase flowline hydraulics and line sizing using PIPESIM and Aspen HYSYS Upstream for oilfield rehabilitation.

- Ran dynamic transient startup and hydrate mitigation studies alongside pigging sweep and slug analysis in HYSYS Dynamics.
- Built an internal platform with Python, JavaScript, TypeScript, and Rust to automate process calculations, document management, reporting, and engineering deliverables.

Air Liquide

Tunisia

Process Operations Intern

Jul 2025 – Aug 2025

- Led direct contact heat exchanger retrofit using Sulzer Sulcol and KG-Tower, achieving 85% pressure drop reduction and 20% diameter decrease.
- Oversaw industrial water-cooling system inspections, quality testing, and maintenance scheduling, ensuring 100% regulatory compliance.
- Enforced strict HSE protocols for cooling tower operations, sustaining 100% safety compliance using specialized PPE and respiratory protection.

OMV Tunisia Production

Tunisia

Process Engineering Intern

Jun 2025 – Jul 2025

- Supported FEED design for the Amine Sweetening Tie-In project at the brownfield Nawara CPF, integrating 3 new gas wells and modeling the AGRU in BR&E ProMax and HYSYS.
- Developed PFDs and preliminary P&IDs in AutoCAD Plant 3D and Bluebeam Revu.
- Built heat and material balances to optimize AGRU performance, achieving 1.86 mol% CO₂ using 40 wt% MDEA plus 2 wt% piperazine solvent.
- Reduced reboiler duty to 3500 kW while maintaining 0.45 CO₂ loading in rich amine stream, balancing performance and OPEX.
- Analyzed production lifecycle scenarios for well start-up and decline, defining simulation parameters aligned with long-term operational constraints.

Hydrogen Energy: A Technico-Economic Assessment of SMR and AWE for Hydrogen Production

Jan 2025 – May 2025

- Conducted a techno-economic assessment of hydrogen production via Steam Methane Reforming and Alkaline Water Electrolysis. Modeled a complex carbon capture system in Aspen HYSYS, optimizing CO₂ reduction and process efficiency.

STUDENT LIFE AND VOLUNTEERISM

SecuriNets ENSIT

Apr 2024 – Jan 2025

Founding Committee Member & Media Manager

- Co-founded the cybersecurity club and helped establish its initial structure and activities.
- Organized DarkNets CTF, drawing 200+ attendees and recruiting 50+ members.

IEEE PES x PELS Joint Chapter Student Branch

Sep 2023 – May 2024

Media Manager

- Led a three-member media team and created more than 60 social media publications.
- Increased the chapter's visibility and contributed to 250% membership growth.

CERTIFICATIONS

- **Aspen Certified Expert User in Aspen HYSYS** - Aspen Technology
- **Life Cycle Assessment** - Coursera, University of Michigan
- **Renewable Energy Technology Fundamentals** - Coursera, University of Colorado Boulder