

Felisha Hazairina

Process Engineering | Research & Development | Quality Control
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SUMMARY

Chemical Engineering graduate from Universitas Negeri Semarang with a GPA of 3.80/4.00 and hands-on experience in process engineering, material synthesis, characterization, and formulation optimization. Experienced in conducting systematic experiments, performing mass and energy balance calculations, analyzing process and experimental data, and documenting results using Microsoft Excel, Origin, ImageJ, and Aspen Hysys. Demonstrated ability to optimize experimental parameters and translate technical findings into data-driven solutions. Interested in pursuing a career in Process Engineering, Research & Development, or Quality Control.

EDUCATION

Universitas Negeri Semarang – Semarang, Indonesia 2022– 2026
Bachelor of Chemical Engineering, GPA: 3.80/4.00

- Relevant Coursework: Chemical Industrial Processes, Chemical Reactor Engineering, Mass and Energy Balance, Chemical Plant Design, Engineering Economics, Utilities, Organic Chemistry, Analytical Chemistry.

INTERNSHIP EXPERIENCE

PT Indonesia Toray Synthetics – Tangerang, Indonesia 2025
Process Engineer-Intern

- Performed mass balance calculations for two production lines of the polymerization unit, including identifying inlet and outlet material compositions.
- Recorded, organized, and compiled operational data using Microsoft Excel to support process monitoring and analysis
- Observed production processes across multiple units, the Quality Control and Utilities
- Gained practical knowledge of Distributed Control System (DCS) and process instrumentation for monitoring and controlling production processes.

SELECTED PROJECTS

Hydrogel Silver Nanoparticles (AgNPs) Development for Photodegradation of 4-Nitrophenol (4-NP) 2025-2026
Research Assistant

- Optimized synthesis parameters, including temperature and pH, through systematic experiments, achieving an optimal silver nanoparticle size of 14 nm.
- Evaluated the immersion method for AgNP incorporation into hydrogel and developed a direct incorporation approach with composition variations after identifying suboptimal results.
- Evaluated the photodegradation performance of the optimized AgNP hydrogel, achieving nearly 100% 4-nitrophenol degradation within 120 minutes.
- Conducted material characterization using UV-Vis Spectrophotometry and analyzed characterization data using Origin and ImageJ.

Aspirin Plant Design – 5,000 Tons/Year Capacity

Chemical Engineering Design Project 2025-2026

- Performed mass balance, energy balance, and utility requirement calculations as the basis for process design.
- Designed specifications for process equipment, including reactor, rotary kiln, mixer, rotary cooler, rotary dryer, centrifuge, ball mill, and vibrating screen
- Prepared the Process Flow Diagram (PFD) to represent the proposed process flow.
- Conducted economic feasibility analysis, achieving a projected Return on Investment (ROI) of 37.26%, a payback period of 2.12 years, and a Break-Even Point (BEP) of 32.34% over a projected 30-year plant lifespan.

ORGANIZATIONAL EXPERIENCE

Chemical Engineering Paper Competition 2024
Public Relations Staff

- Increasing competition participant numbers from around 50 to 70 (40%) compared to the previous year through outreach activities and promotional partnerships with student organizations.
- Managed communication between the committee, participants, and jury throughout the competition.

CERTIFICATIONS & TRAINING

Quality Management System – ISO 9001:2015 | Makin Ahli, 2026
Laboratory Management System – ISO/IEC 17025:2017 | Makin Ahli 2026
Food Safety – GMP, HACCP, ISO 22000, FSSC 22000 | Makin Ahli 2026

SKILLS

Technical Skills : Material Synthesis, Formulation Optimization, Experimental Design, UV-Vis Spectrophotometry, Material Characterization, Data Analysis, Origin, ImageJ, ISO 9001:2015, ISO/IEC 17025:2017, GLP, GMP, HACCP, ISO 22000, FSSC 22000, SJPH

Software : Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Microsoft Visio, Aspen Hysys

Soft Skills : Problem solving, communication, teamwork, adaptability

Languages : Indonesia – Native, English – TOEFL Prediction Test | Score 520