

Gracia Alfa Betha Simanjuntak, S.T.

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Medan, Sumatera Utara, Indonesia

Chemical Engineering graduate from Institut Teknologi Sumatera (GPA 3.40) with a strong academic foundation in reaction kinetics and process engineering. Experienced as a Process Engineer Intern at PT Toba Pulp Lestari Tbk, gaining hands-on exposure to industrial plant operations, process evaluation, and workplace safety standards. Proven expertise in experimental accuracy, data analysis, and engineering tools including Aspen HYSYS, ALOHA, and Minitab from roles as a Laboratory and Teaching Assistant. Knowledgeable in integrated QHSE and quality management frameworks (GMP, HACCP, ISO 9001, 14001, 45001, and 22000), complemented by a solid track record in organizational leadership and administration. A detail-oriented and adaptable professional eager to leverage technical proficiency and analytical skills to drive operational efficiency in an industrial setting.

EDUCATION

Institut Teknologi Sumatera – Lampung, Indonesia

Graduation: July 2026

Bachelor's Degree in Chemical Engineering, 3.40/4.00

Project:

- Research journal project on "**Kinetics Of Biodiesel Production From Used Cooking Oil Using Methyl Ester As A Co-Solvent**" (January 2025 - December 2025).
- Internship program at **PT Toba Pulp Lestari as Process Engineer Fiberline Production** (July 2025 - August 2025)
- Final project on the **Preliminary Design of a Succinic Acid Plant from Maleic Anhydride Using Hydrolysis and Hydrogenation Processes with a Capacity of 21,000 Tons per Year** (August 2025 - April 2026).

Achievement:

- Selected as a team member for the project "**Kinetics of Biodiesel Production from Used Cooking Oil Using Eggshell-Derived Biochar Catalyst and Methyl Ester Co-Solvent**" in the internal Student Creativity Program (Program Kreativitas Mahasiswa) proposal selection at Institut Teknologi Sumatera (May 2025)
- Awarded 2nd Place in the PKKM Innovation Competition (Program Kreativitas Kewirausahaan Mahasiswa) for "**Seduh Rice**" an innovative instant rice product, Faculty of Industrial Technology, Institut Teknologi Sumatera (August 2025)

WORK EXPERIENCES

Institut Teknologi Sumatera – Lampung, Indonesia

Laboratory Assistant – Chemical Engineering Laboratory

February 2025 - June 2025

- Supported the **Isotherm Adsorption module** in the Physical Chemistry and Colloid course by guiding students in adsorption theories and models, assisting laboratory experiments and data analysis, while ensuring safety and effective practicum sessions.

PT Toba Pulp Lestari Tbk– North Sumatera, Indonesia

Intern as Junior Process Engineer in the Fiberline production

July 2025 - August 2025

- Monitored and evaluated daily production parameters across the Fiberline Plant, ensuring 100% compliance with quality standards and optimizing chemical dosage parameters.
- Performed ANOVA analysis in Microsoft Excel to evaluate the effect of chlorine dioxide (ClO₂) consumption on pulp brightness during the D1 bleaching stage in the Bleaching Plant at PT Toba Pulp Lestari Tbk.

Laboratory Assistant – Chemical Engineering Laboratory

July 2025 - December 2025

- Supported the **Distillation module** in Chemical Engineering Laboratory II by guiding ethanol–water separation experiments, including HETP and theoretical stage determination, while reinforcing vapor–liquid equilibrium concepts and ensuring safe laboratory operations.

Lecturer Assistant – Chemical Engineering

August 2025 - November 2025

- Supported the **Chemical Engineering Statistics course** by assisting students in data analysis, probability, and hypothesis testing, including the use of Minitab and Design-Expert for data processing and experimental design.

ORGANIZATIONAL EXPERIENCES

Persekutuan Mahasiswa Kristen Institut Teknologi Sumatera (PMK ITERA) – Institut Teknologi Sumatera

Secretary General of the association

March 2023 - March 2024

- Supported the planning and implementation of campus-wide fellowship and community programs, including new student engagement activities and routine gatherings, while coordinating communication across multiple study programs to strengthen member involvement and accommodate student input.
- Contributed to the smooth execution of internal programs by supporting administrative coordination, ensuring activities were organized, inclusive, and aligned with the organization's goals.

Himpunan Mahasiswa Teknik Kimia (HIMATEKIA-ITERA) – Institut Teknologi Sumatera

Secretary of the Strategic Studies Commission

June 2024 – January 2025

- Served as Secretary of the Strategic Studies Commission by conducting reviews and analyses of current issues within and beyond the university, compiling findings into structured insights, and disseminating them to students to increase awareness and critical understanding.
- Managed administrative operations of the commission, including meeting coordination, documentation, report preparation, and internal communication to support effective decision-making

- Supported the planning, coordination, and implementation of campus-wide creative economy programs, including student entrepreneurship initiatives and business-oriented events involving participants across multiple departments.
- Assisted in developing external partnerships and sponsorship opportunities, while contributing to the successful execution of programs aimed at increasing student engagement, fostering entrepreneurial skills, and supporting the growth of creative industry activities within the university environment.

ADDITIONAL INFORMATION

- **Hard Skills:** Aspen Hysys, ALOHA, Minitab, Design Expert, Matlab, Microsoft Excel, Microsoft Office, Canva.
- **Soft Skills:** Communication, Analytical and Critical Thinking, Food Processing, Market Analysis Negotiation, Problem Solving, Leadership, Team Collaboration, Team Building, Honesty, Integrity, Time Management, Project Management, Laboratory Skills, and Good Computer Skills.
- **Training and Certification:**
 - Certificate Chemical Engineering Workshop “**Process Simulators for Modelling and Optimizing Complex Chemical Processes (Aspen HYSYS)**” By Sumatera Institute of Technology (September 2024)
 - Certificate Webinar Training “**The Role of Krakatau Semen Indonesia in Food Security and the Construction Industry**” By Sumatera Institute of Technology (September 2025)
 - Certificate Webinar Training “**Megaproject Planning in Refinery and Petrochemical Industries**” By Sumatera Institute of Technology (October 2025).
 - Certificate Webinar Training “**Application of Life Cycle Assessment (LCA): Environmental Audit Strategies for Sustainable Development**” By Sumatera Institute of Technology (November 2025).
 - Certificate Webinar Training “**Refinery and Energy Conservation.** ” By Sumatera Institute of Technology (October 2025).
 - Certificate Training “**Good Processed Food Manufacturing Practices (CPPOB)**” by Mutiara Mutu Sertifikasi (April 2026).
 - Certificate Training “**Ahli K3 Migas (Oil and Gas Occupational Health & Safety Expert)**” by HECCONS Learning & Consulting (July 2026).
- **Reference:**
 - Reni Yuniarti, S.T., M.T. (reni.yuniarti@tk.itera.ac.id – Lecturer Final Project)
 - Dr. Edwin Rizki Safitra, S.Si., M.Eng (edwin.rizki@tk.itera.ac.id – Lecturer Final Project)
 - Dr. Jabosar Ronggur Hamonangan Panjaitan, S.T., M.T (jabosar.panjaitan@tk.itera.ac.id- Lecturer Research)