

Ida Ayu Indrayani

Tangerang Selatan, Indonesia | idayuindr@gmail.com | 087741450555 | in/IdaAyuIndrayani

LABORATORY & R&D | FORMULATION DEVELOPMENT | ANALYTICAL TESTING

SUMMARY

Chemical Engineering graduate from the University of Indonesia with hands-on experience in laboratory analysis, formulation development, experimental design, and product testing across research, personal care, fuel, and biotechnology projects. Experienced in Design Expert/RSM, analytical testing, stability evaluation, laboratory data analysis, and scientific reporting, with exposure to ISO/IEC 17025 and GLP practices. Proven ability to optimize formulations, analyze experimental data, and translate laboratory findings into actionable recommendations while collaborating with R&D, QC, production, and multidisciplinary teams.

SKILLS

Technical Skills :

Laboratory & Analytical :

Spectrophotometry | Chromatography | Microbiological Analysis | Analytical Testing | Stability Testing | Laboratory Documentation

R&D & Formulation :

Formulation Development | Design Expert | RSM | Experimental Design | Product Validation

Engineering & Process:

SAP S/4HANA | Aspen HYSYS | AutoCAD | Process Optimization | Microsoft Office

Soft Skills :

Analytical Thinking | Problem Solving | Attention to Detail | Cross-functional Collaboration

EXPERIENCE

Corporate Process Development Plant Officer (Contract)

January – August 2026

PT Mega Persada Group, Bogor – Jawa Barat

- Led process improvement initiatives by analyzing manufacturing workflows and identifying opportunities to improve operational efficiency.
- Evaluated and standardized business processes through SOP optimization and system integration initiatives.
- Supported SAP S/4HANA process improvements across production planning, inventory management, quality monitoring, maintenance tracking, and manufacturing reporting
- Translated operational requirements into process and system improvements to increase process visibility and data accuracy.
- Collaborated with Production, Quality, Maintenance, and Warehouse teams to align process improvements with operational requirements.

Project Intern in Biology Molecular, Trypsin Enzyme Division

Badan Riset dan Inovasi Nasional – Serpong, Tangerang Selatan

October 2024 - April 2025

- Optimized enzyme formulation using Design Expert and Response Surface Methodology (RSM), achieving an 85% increase in enzyme activity for a digestive supplement formulation.
- Designed and executed formulation optimization experiments using statistical experimental design and data analysis.
- Managed experimental datasets and translated analytical findings into actionable formulation recommendations.
- Conducted data-driven process optimization to support product performance improvement.
- Supported research decision-making through quantitative analysis and scientific problem-solving.

Project Intern in Health, Safety, Security and Environment Division

PT Pertamina Hulu Mahakam – Balikpapan, Kalimantan Timur

July – August 2024

- Utilized MoTuM simulation and modeling tools to analyze operational scenarios and support environmental risk management.
- Analyzed datasets covering weather conditions, tidal movements, and oil spill behavior to generate predictive insights.
- Supported multidisciplinary risk mitigation projects through technical modeling and scenario evaluation.
- Contributed to data-driven decision-making by interpreting simulation results and operational scenarios.

Product Applicant Analyst (Internship)

Balai Besar Pengujian Minyak dan Gas Bumi – Jakarta, Indonesia

July - Agustus 2023

- Conducted laboratory testing and evaluation of fuel products against national quality and performance standards.
- Analyzed laboratory and quality data to evaluate product performance against technical and regulatory requirements.

- Prepared analytical reports to support product quality evaluation and improvement initiatives.
- Applied standardized testing methodologies and data interpretation techniques to support technical decision-making.

Assistant Research Personal Care Lab Application (Contract)

PT Tritunggal Arthamakmur – Jakarta, Indonesia

Mei - Juli 2022

- Conducted laboratory testing and generated analytical data to support product development and quality improvement.
- Evaluated product performance through systematic testing and data-driven assessments.
- Collaborated with technical teams to troubleshoot formulation issues and improve product quality.

Water Waste Treatment Analyst Intern

Badan Tenaga Nuklir Nasional – Jakarta, Indonesia

February - April 2021

- Conducted laboratory data analysis using analytical instrumentation and quality management procedures.
- Applied ISO 17025 standards to ensure data accuracy, traceability, and reliability.
- Performed statistical evaluation and uncertainty analysis to improve measurement confidence and reporting quality.

EDUCATION

S1 Chemical Engineering

UNIVERSITY OF INDONESIA - GPA 3.62

- Academic Project: Acrylic Acid Plant Design from Glycerol – 172,000 tons/year capacity.
- Thesis: Production and Formulation Protease Like Trypsin Enzyme using Maltodextrin, Pectin and Corn Starch.

D3 Chemical Analyst

VOCATIONAL SCHOOL OF IPB UNIVERSITY – GPA 3.73

- Final Essay: Uncertainty Estimation for the determination of Iron in Post Mining Soil Using Atomic Absorption Spectrophotometer.

CERTIFICATIONS

ISO 14001:2015

SIERRA Management Consulting - 2021

- Awareness Environmental Management System ISO 14001:2015.

Good Laboratory Practice and ISO/IEC 17025:2017

PT SAFF Suprima Utama - 2022

- Introduction of Good Laboratory Practice (GLP) and ISO/IEC 17025:2017.

The Role of Project Engineering in EPC Project

Alpha Petroleum Indonesia - 2025

- Introduction of Role as a project engineering in EPC Project

INVOLVEMENT

Research and Development Staff

AROMATIK (Chemical Analyst Student Community) - 2019 - 2020

- Developed educational content through the "Narasi" podcast featuring alumni and student experiences in academics, careers, business, and scholarships.
- Supported peer tutoring activities for Chemical Analyst students.
- Collaborated with AKA Bogor on an online chemistry project discussing the implementation of ISO 17025:2017 in Industry 4.0

Finance Staff

AIChE SCUI (American Institute of Chemical Engineers) - 2023 - 2024

- Monitored financial transactions and funding activities for marketing and training programs.
- Prepared event financial plans and final financial reports.

Mass and Energy Balance Assistant Lecture

Fakultas Teknik Universitas Indonesia - Aug 2023 – June 2024

AWARDS & HONORS

3rd Winner Of Program Kreativitas Mahasiswa – Artikel Ilmiah (PKM – AI) - 2023

Topic : Recalculation as a step in optimizing aerobic tanks and sedimentation tanks at pharmaceutical waste treatment plant of PT Caprifarmindo Laboratories



UNIVERSITAS INDONESIA

memberikan kepada

Ida Ayu Indrayani

nomor pokok mahasiswa 2206100400

NIK 3174106508000006

lahir di Jakarta pada tanggal 25 Agustus 2000
ijazah

Sarjana Teknik (S.T.)

Program Studi Teknik Kimia

Fakultas Teknik

dengan segala hak dan kewajiban yang berhubungan dengan gelar ini.
Dinyatakan lulus pada 8 Juli 2025

Rektor

Prof. Dr. Ir. Heri Hermansyah, S.T., M.Eng., IPU.



Jakarta, 18 Juli 2025

Dekan

Prof. Kemas Ridwan Kurniawan, S.T., M.Sc., Ph.D.

Tanda tangan pemilik ijazah

NC. 25- 005303

ASLI

Nama (Name) : Ida Ayu Indrayani
 N.P.M. (Student Number) : 2206100400
 Tempat Lahir (Place of Birth) : Jakarta
 Tanggal Lahir (Date of Birth) : 25-08-2000
 Program (Program) : Sarjana (Bachelor)
 Fakultas (Faculty) : Teknik (Engineering)
 Program Studi (Major) : Teknik Kimia (Chemical Engineering)

Kode (Code)	Mata Kuliah (Course Title)	K	(C)	N	(G)
Semester 2022/2023 - 1					
ENCH600002	Kecakapan Komunikasi (Communication skills)	2		A	
ENCH600005	Komputasi Numerik (Numerical Computation)	3		A-	
ENCH600006	Kimia Analitik Instrumental (Instrumental Analytical Chemistry)	3		A-	
ENCH600007	Kimia Fisika (Physical Chemistry)	3		B+	
ENCH600008	Praktikum Kimia Fisika dan Kimia Analitik (Physical & Analytical Chemistry Lab)	1		A	
ENCH600009	Neraca Massa dan Energi (Mass and Energy Balance)	3		A-	
ENCH600010	Peristiwa Perpindahan (Transport Phenomena)	3		A-	
Semester 2022/2023 - 2					
ENCH600011	Pemodelan Teknik Kimia (Chemical Engineering Modelling)	3		A-	
ENCH600012	Mekanika Fluida dan Partikel (Fluid and Particle Mechanics)	3		B-	
ENCH600013	Termodinamika Teknik Kimia (Chemical Engineering Thermodynamics)	4		B	
ENCH600014	Perpindahan Kalor (Heat Transfer)	3		B+	
ENCH600015	Menggambar Teknik Proses (Process Engineering Drawing)	2		A	
ENCH600016	Ilmu Bahan dan Korosi (Material Science & Corrosion)	3		A	
ENCH800034	Teknologi Penyimpanan dan Pengemasan (Storage and Packing Technology)	3		A-	
ENCH800047	Teknologi Polimer (Polymer Technology)	3		A	
Semester 2023/2024 - 1					
ENCH600017	Perpindahan Massa (Mass Transfer)	4		B-	
ENCH600018	Praktikum UOP 1 (Unit Operation Process Lab I)	1		A	
ENCH600019	Teknik Reaksi Kimia 1 (Chemical Reaction Engineering I)	3		A-	
ENCH600020	Simulasi Proses Kimia (Chemical Process Simulation)	3		A	
ENCH800018	Material Komposit (Composite material)	3		A	
ENCH800027	Energi Berkelanjutan (Sustainable Energy)	3		A-	
ENGE600011	Ekonomi Teknik (Engineering Economics)	3		A	
ENGE600012	K3LL (HSE)	2		A-	
Semester 2023/2024 - 2					
ENCH600021	Pengendalian Proses (Process Control)	3		A-	
ENCH600022	Praktikum UOP 2 (Unit Operation Process Lab II)	1		A	
ENCH600023	Teknik Reaksi Kimia 2 (Chemical Reaction Engineering 2)	3		B	
ENCH600024	Perancangan Alat Proses (Process Equipment Design)	3		A	
ENCH600025	Perancangan Produk Kimia (Chemical Product Design)	4		B+	
ENCH800036	Teknologi Obat dan Kosmetik (Drugs and Cosmetics Technology)	3		A-	
ENCH800038	Proses Petrokimia (Petrochemical Processing)	3		A	
ENCH800041	Pengelolaan Limbah (Waste Management and Prevention)	3		B+	
Semester 2024/2025 - 1					
ENCH600026	Manajemen Proyek Industri (Industrial Project Management)	2		B	
ENCH600027	Perancangan Pabrik Proses (Process Plant Design)	6		B+	
ENCH600028	Kerja Praktik (On The Job Training)	2		A	
ENCH600029	Metodologi Penelitian dan Seminar (Research Methodology & Seminar)	2		A	
ENCH600030	Kapita Selecta (Capita Selecta)	2		A	
ENCH800017	Teknologi Herbal (Herbal Technology)	3		A-	
Semester 2024/2025 - 2					
ENCH600031	Skripsi (Undergraduate Thesis)	6		A	

Transfer kredit yang diakumulasi dari (Transfer credit from)

Program Studi DIII Analis Kimia Sekolah Vokasi Institut Pertanian Bogor
 Nomor SK : Surat Keputusan Dekan Fak. Teknik Universitas Indonesia No. 1067/SK/D/FTUI/2022

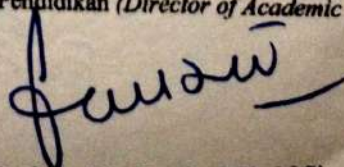
Blok SKS (SKS Block)

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----- Akhir dari Transkrip (End of Transcript) -----

Tanggal Lulus (*Date of Graduation*) : 08-07-2025
Nomor Ijazah (*Certificate Number*) : 001002242012025100124
Nomor Transkrip (*Transcript Number*) : 0181/Transkrip/S1-FT/Par/2/2025
I.P.K. (*G.P.A.*) : 3.62 dengan (*with*) 110 Total Kredit (*Credit Earned*)
Predikat (*Predicate*) : Cumlaude (*Cumlaude*)
Judul Skripsi/Tesis/Disertasi (*Undergraduate Thesis/Master's Thesis/Doctoral Thesis Title*)
Produksi dan Formulasi Enzim Protease Serupa Tripsin (PST) Dengan Maltodekstrin, Pektin dan Pati Jagung
(*Production and Formulation of Trypsin-like Protease Enzyme with Maltodextrin, Pectin and Corn Starch*)

4 September 2025
Direktur Pendidikan (*Director of Academic Affairs*)



Prof. Dr. Vivi Fauzia, S.Si., M.Si.
NIP. 197201181995122001

