

TIFANI DJILHAM SALSABILLA

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EDUCATION

Institut Teknologi Sepuluh Nopember (ITS), Bachelor of Chemistry

GPA: 3.56 (Cumlaude) / 4.0

2022 - 2026

Courses: Instrumental Measurement Methods | Molecular Spectroscopy | Gases and Liquids | Chemical Thermodynamics | Compound Identification | Computational Chemistry | Laboratory Occupational Health and Safety Management (K3)

SKILLS

Certifications	ISO/IEC 17025:2017 Laboratory Management System ISO 13528:2022 Statistical Data Processing for Proficiency Testing
Technical Skills	Analytical Chemistry Instrumentation (HPLC, AAS, UV-Vis, FTIR), Laboratory Quality Management (ISO/IEC 17025), Proximate & Ultimate Analysis, Membrane Fabrication & Modification, Gas Separation & Adsorption Systems, Polymer & Materials Characterization.
Software	Matlab, OriginPro, ChemDraw, FTIR & HPLC Data Processing Software, ImageJ, Material Studio, Mercury.
Languages	Indonesian and English

WORK EXPERIENCES

PT Charoen Pokphand Indonesia Tbk, Internship | Research and Development July 2025-September 2025

- Conducted 200+ analytical tests (HPLC, AAS, UV-Vis, Soxhlet, Ankom) to support feed R&D and formulation optimization.
- Analyzed 100+ samples for vitamins, metals, phosphate, crude fat, and fiber using calibrated and verified methods.
- Interpreted data and prepared technical reports to support product improvement and quality enhancement.

PT Anindya Wiraputra Consult, Internship | Quality Control January 2025-February 2025

- Performed coal quality analysis through Proximate and Ultimate Analysis, including determination of ash, volatile matter, moisture content, calorific value (bomb calorimetry), and sulfur using FTIR spectroscopy.
- Analyzed 50+ coal samples, achieving >95% accuracy in compliance with industry standards.
- Processed and interpreted data and prepared laboratory reports to support the energy and power plant industries

Pertamina Foundation-Sains (PF-Sains), Research Assistant January 2025-January 2026

- Collaborated in hollow fiber membrane fabrication, including graphene filler synthesis (90% yield) and preparation of dope solution (18% PSF, 82% NMP, 5% graphene).
- Operated hollow fiber spinning equipment to produce membranes and conducted surface modification to enhance permeation performance.
- Implemented membrane modules in community-based biogas purification systems, achieving methane concentration above 92%.

PROJECTS

Program Kreativitas Mahasiswa-Riset Eksakta (RE) 2025 Funding by Kemendikbudristek

- Developed thin film composite (TFC) membranes for CH₄/CO₂ gas separation.
- Increased the calorific value of cow manure biogas through purification, achieving methane (CH₄) concentration up to 92.5%.
- Presented final research outcomes in the PKP2 session and prepared the research manuscript for journal submission.

Water & Wastewater Treatment System Development 2024 Funding by DRPM ITS

- Designed and optimized a reverse osmosis (RO) membrane-based water purification system with a capacity up to 60 L/day, improving water quality by reducing TDS by >95%.
- Evaluated system performance through routine testing (pH, TDS, conductivity), ensuring compliance with clean water standards and consistent supply for 100+ users at YYP Al Hayatul Islamiyah.

Personal Care Product Formulation Project (Bar Soap)

Funding by None

- Conducted literature review of scientific articles and market reports to identify key issues related to bar soap usage in Indonesia.
- Developed and optimized 5+ formulation prototypes enriched with 5–10% VCO additive, achieving skin-friendly pH range (5.5–6.5) suitable for sensitive skin.
- Incorporated 1–3% lavender extract into the formulation to provide natural mosquito-repellent functionality and enhance product value.

HONORS AND AWARDS

- Awarded Adaro Foundation Scholarship by **PT Adaro Energy Indonesia 2025-2026**
- Funded Program Kreativitas Mahasiswa-Riset Eksakta (PKM-RE) by **Kemendikbudristek 2025**
- 1st Place in Scientific Writing Competition Indonesia Knowledge Management Summit (IKMS) All of Category by **PT Kilang Pertamina Internasional 2024**
- 1st Place in a Scientific Writing Competition Indonesia Knowledge Management Summit (IKMS) Category of Environmental by **PT Kilang Pertamina Internasional 2024**
- Presenter in Conference Interfaith Rainforest Initiative Indonesia National 2024
- 1st Place in a Scientific Writing Competition Enviro Creact by Universitas Islam Negeri Sunan Ampel Surabaya 2024
- 1st Place in a Scientific Writing Competition Piping Engineering Paper Competition (PEPC) by Politeknik Perkapalan Negeri Surabaya 2024
- 1st Place in a Scientific Writing Competition Sikarya by Universitas Sriwijaya 2024
- 1st Place in Scientific Writing Competition Gema Teknologi by KMTM Universitas Muhammadiyah Surakarta 2024
- 1st Place in Scientific Writing Competition Konstanta by HMP Fisika Universitas Negeri Surabaya 2024
- 1st Place in Scientific Writing Competition PIK by Himamia FKIP KBM Universitas Bengkulu 2024
- 1st Place in Scientific Writing Competition PRU by Universitas Singaperbangsa Karawang 2024
- 1st Place in Scientific Writing Competition by HMPS PIPS Universitas Negeri Malang 2024
- 1st Place in Essay Competition by Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung 2024
- 1st Place in Essay Competition by AhaTalks 2.0 2023
- 2st Place in Poster Competition Sianida VIII by HMPS UIN Raden Fatah Palembang 2024
- 3st Place in Scientific Writing Competition TRYCITI 2.0 by Himakim FMIPA Universitas Tadulako 2024
- 3st Place in Scientific Writing Competition Ceer's Scientific Fair VI by KSPE Universitas Jember 2024
- Gold Medalist at the Olympics Indonesian Student Science Competition (ISSC) 2024
- Gold Medalist at the Olympics in Olimpiade Sains Nusantara (OLIMNUS) 2024
- Gold Medalist at the Olympics in Indonesian Youth Science Olympiad (IYSO) 2024
- Winner of Writing Competition "Warner of Literature" and Booked Work
- Best Paper in Scientific Writing Competition TRYCITI 2.0 by Himakim FMIPA Universitas Tadulako 2024
- Best Paper in Essay Competition by Lomba Pena Indonesia 2023
- Best Paper in Scientific Writing Competition by KMTM Universitas Muhammadiyah Surakarta 2024
- Finalist in Scientific Writing Competition TRYCITI 2.0 by Himakim FMIPA Universitas Tadulako 2024
- Finalist in Essay Competition by Lomba Pena Indonesia 2023
- Finalist in Scientific Writing Competition by KMTM Universitas Muhammadiyah Surakarta 2024

VOLUNTERING EXPERIENCES

Green Product Council Indonesia (GPCI) | Copywriter

2025-2026

- Conducted research on 30+ eco-friendly products aligned with ISO 9001, ISO 14001, Ecolabel standards, SDGs, and Net Zero Emission principles to ensure regulatory compliance and credible sustainability claims.
- Developed a 50+ page Green Label guideline book outlining environmental criteria, verification parameters, and product qualification standards for sustainable certification claims.
- Delivered sustainability-focused product messaging to clients, improving clarity of environmental claims and supporting brand positioning in green markets.

- Produce articles tailored to the requests of the company, meeting a quota of 5-7 articles per week while ensuring alignment with their objectives and audience preferences.
- Participate in bi-weekly meetings with company executives to review and revise articles, resulting in a 30% improvement in article quality and a evaluate to 10% reader engagement over a six-month period.
- Facilitate weekly writing training sessions aimed at enhancing writing skills and fostering continuous improvement.

- Authored 10+ climate change and sustainable energy articles, generating 1,000+ total social media views and increasing public awareness on environmental issues.
- Collaborated with top management and a team of 5+ copywriters to analyze environmental trends and develop weekly content themes.
- Conducted in-depth research using 10+ credible sources per article to ensure data accuracy and minimize misinformation in published content.

PAPERS

Undergraduate Thesis – *Fabrication of Polysulfone-based Mixed Matrix Membranes with ZIF-L Carbon Filler for H₂/CO₂ Gas Permeation.*

- Developed and characterized mixed matrix membrane (MMM) for gas separation using C-ZIF-L as a filler, achieving H₂/CH₄ selectivity of 7.97 and permeability of H₂ up to 20,55 barrer.
- Conducted membrane fabrication via phase inversion method and performed characterization using SEM, FTIR, XRD, sBET and gas permeation testing.
- Analyzed transport mechanisms (solution-diffusion model) to evaluate separation performance and optimize membrane composition.

Gold Medal Award by PT Kilang Pertamina Internasional – *Development of a Mixed Matrix Membrane Technology Using Diethanolamine-Modified Zeolite Derived from Coal Fly Ash for Carbon Capture, Utilization, and Storage (CCUS) Applications in the Coal Industry.*

- Awarded Gold Medal at the Indonesia Knowledge Management Summit (IKMS) 2.0 by PT Kilang Pertamina Internasional among 100+ participating teams for developing a CCUS-oriented mixed matrix membrane (MMM).
- Synthesized diethanolamine-modified zeolite derived from coal fly ash with >85% conversion efficiency and incorporated 5–20 wt% filler into the polymer matrix to enhance CO₂ affinity.
- Achieved up to 97% CO₂ separation efficiency from mixed gas streams, with improved CO₂/CH₄ selectivity (>960) and increased CO₂ permeability (189,42%) compared to pristine membranes.
- Presented research findings at the 2-day summit attended by industry leaders, enhancing academic-industry collaboration and knowledge sharing.

PKM-RE 2025 by Kemendikbudristek – *Fabrication of PDMS/PVDF-Based Thin Film Composite Membrane Incorporating Protonated g-C₃N₄ for CH₄/CO₂ Gas Separation*

- Fabricated thin film composite (TFC) membranes with PDMS selective layer (~5–10 µm) on PVDF support, incorporating 1–3 wt% protonated g-C₃N₄ as functional filler.
- Optimized membrane formulation to achieve CO₂/CH₄ selectivity up to 11,94 and CH₄ permeance of 3194,04 Barrer, representing ~35% improvement compared to pristine membranes.
- Demonstrated CH₄ purity enhancement up to 92–95% in biogas upgrading trials, supporting renewable energy applications.