

# LYA SULISTYIONING RAHAYU

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**Professional Summary:** Detail-oriented Chemistry Graduate (GPA: 3.64/4.00) from Brawijaya University with specialized research experience in biomass technology, bioenergy, and green chemical synthesis. Proficient in operating advanced laboratory instrumentation including FTIR, HPLC, UV-Vis Spectrophotometry, and Freeze Dry, alongside robust data analysis using Origin and Microsoft Office. Proven track record in scientific research, international publication, and cross-functional leadership, seeking impactful opportunities in R&D, Laboratory Analyst, Research Assistant, Quality Assurance (QA), Quality Control (QC), Quality Analyst, and Academic/Industrial Research.

## EDUCATION

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### BRAWIJAYA UNIVERSITY

Malang, Indonesia

**Bachelor of Science in Chemistry (GPA: 3.64 / 4.00)**

Sep 2022 – Jul 2026

- **Undergraduate Thesis:** "Optimization of Alkalization Reaction in Carboxymethyl Cellulose Synthesis with Deep Eutectic Solvent (DES) for Hydrogel-Biochar Applications"
- **Relevant Coursework:** Physical Organic Chemistry, Polymer Chemistry, Instrumental Chemical Analysis, Chemical Structure Analysis, Synthetic Organic Chemistry, Laboratory Management, Advanced Analytical Chemistry.

## RESEARCH & WORK EXPERIENCE

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### NATIONAL RESEARCH AND INNOVATION AGENCY (BRIN)

Tangerang Selatan, Indonesia

**Research Assistant**

Jun 2026

- Engineered bioethanol production processes from *Eucheuma cottonii* macroalgae by implementing Separate Hydrolysis and Fermentation (SHF) alongside Simultaneous Saccharification and Fermentation (SSF) methods to optimize bio-energy conversion yields.
- Standardized experimental workflow documentation and comparative datasets, enabling streamlined evaluation of conversion efficiency across reaction batches.
- Analyzed and interpreted complex analytical parameters using Microsoft Office and statistical data tools, providing key Insights for bioenergy protocol optimization.

### NATIONAL RESEARCH AND INNOVATION AGENCY (BRIN)

Tangerang Selatan, Indonesia

**Research Intern (MBKM Program)**

Feb 2025 – Jul 2025

- Co-authored 2 high-impact research papers published in indexed international journals (*Biomass and Bioenergy*, Elsevier and *E3S Web of Conferences*, ICCME-ISAC) by conducting advanced continuous/batch delignification on oil palm empty fruit bunches and coconut husk.
- Accelerated bioethanol and Carboxymethyl Cellulose (CMC) synthesis efficiency through systematic modeling and characterization data processing using Origin and Microsoft Office.
- Mastered scientific communication techniques by winning research presentation modules and completing specialized training in Scientific Poster Design and 3-Minute Scientific Presentations.

## PUBLICATIONS

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- **Nano/submicron lignin particles from oil palm empty fruit bunches: Synthesis, amination, performance of Pb<sup>2+</sup> adsorption, and DFT insights** – *Biomass and Bioenergy*, Elsevier (2026)
- **A Comparison of Organosolv-Formic Acid and Continuous-Soda Delignification of *Elaeis guineensis* Empty Fruit Bunch for Optimizing Reducing Sugar Production** – *E3S Web of Conferences*, ICCME-ISAC (2025)

## LEADERSHIP & ORGANIZATIONAL EXPERIENCE

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### STUDENT RESEARCH AND SCIENTIFIC ASSOCIATION (RITMA) – BRAWIJAYA UNIVERSITY

Malang,  
Indonesia

#### *Coordinator of Advisory Board*

*Jan 2025 – Dec 2025*

- Supervised operational governance and organizational integrity across ~80 active members by leading a 4-member Advisory Board in conducting structured evaluations and general assembly meetings with executive leadership.

### STUDENT CREATIVITY PROGRAM (PKM) COACHING TEAM – BRAWIJAYA UNIVERSITY

Malang, Indonesia

#### *Coordinator of Competition Division*

*May 2023 – Feb 2024*

- Increased quality and submission rate of scientific proposals by leading a 4-staff division to establish guidelines, standardized assessment rubrics, and reviewer selection workflows for freshman university contingents.

### STUDENT RESEARCH AND SCIENTIFIC ASSOCIATION (RITMA) – BRAWIJAYA UNIVERSITY

Malang,  
Indonesia

#### *Expert Staff & Staff of Competition Division*

*Mar 2023 – Dec 2024*

- Mentored 10 junior staff in executing 4 major university scientific programs, driving student participation in national academic competitions and scientific proposal development.

## HONORS & AWARDS

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- **Finalist**, International Conference of Innovative Biofrontiers Students (ICIBS) (2024)
- **Silver Medalist**, World Youth Invention and Innovation Award (WYIIA) (2023)
- **Bronze Medalist**, Indonesia International Invention Expo (IIEX) (2023)
- **3rd Place Winner**, Nucleon Science Papers Contest (NUSPEST) (2023)
- **Finalist**, Student Creativity Program Proposal Competition (LP2PKM) - Exact Research (PKM RE) & Social Humanities (PKM RSH) (2023)
- **Implementation of BIOSAKA Research Project** in Kalisongo Village, Dau, Malang (2023)
- **Finalist**, Competition Catalyst SRE UB (2022)
- **1st Honorable Mention**, Science Cup – Student Creativity Program for Social and Humanities Research (PKM RSH) (2022)

## CERTIFICATIONS

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- **AI for Work & Career Readiness with Google AI Products** – Hacktiv8 Indonesia (Aug 2026)
- **Google AI Certified Student** – Google AI (May 2026)
- **Generative Artificial Intelligence Application** – Institute for Data Innovation & AI (IDEA-AI), Australia (Nov 2025)
- **IT Competency Certification (Microsoft Office Desktop Applications)** – Trust Training Patners – Brawijaya University (Oct 2025)

## SKILLS & INTERESTS

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|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Laboratory &amp; Instruments:</b>     | FTIR, HPLC, UV-Vis Spectrophotometry, Freeze Dryer, Thin-Layer Chromatography, Potentiometry.                                                   |
| <b>Wet Chemistry &amp; Purification:</b> | Gravimetric Analysis, Titration, Distillation, Recrystallization, Compound Isolation, Biomass Extraction & Delignification, Chemical Synthesis. |
| <b>Software &amp; Tools:</b>             | Origin, ChemDraw, MS Office (Word, Excel, PowerPoint), Google Workspace, Canva, CapCut.                                                         |
| <b>Languages:</b>                        | English (Intermediate, TOEFL 502), Indonesian (Native), Javanese (Native).                                                                      |
| <b>Soft Skills:</b>                      | Scientific Writing, Data Analysis, Academic Mentoring, Event Moderation/MC, Graphic Design.                                                     |