

MUHAMMAD LUTHFI NABEEL

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Bioengineering graduate from Institut Teknologi Bandung specializing in microbiological analysis and bioprocess quality control. Highly experienced in microbiological laboratory techniques, including microbial growth kinetics evaluation, fermentation monitoring, and antimicrobial efficacy testing. Proficient in executing rigorous statistical data analysis for quality assurance and valid reporting. Detail-oriented professional committed to ensuring microbiological safety and product integrity.

EDUCATION LEVEL

Institut Teknologi Bandung (ITB) – Jatinangor, Indonesia Aug 2022 – Aug 2026

- Bachelor's degree in Bioengineering, GPA: 3.57/4.00

SMAS Insan Cendekia Al Kausar – Sukabumi, Indonesia Jul 2019 – Jul 2022

- High School Diploma, Mathematics and Natural Sciences Interest, GPA : 88.56/100

WORKING EXPERIENCES

Research Assistant – PPMI Program, School of Life Sciences and Technology ITB Jun 2025 – Aug 2026

Developed a functional beverage product derived from coffee plant

- Evaluated changes in chemical profiles, bioactive compounds, and bioactivity during fermentation
- Utilized 10+ analytical methods (e.g., spectrophotometry, titration, organoleptic tests), to ensure precise characterization

Laboratory Assistant – School of Life Sciences and Technology ITB Oct 2024 – Aug 2026

Laboratory Assistant for Life Science Chemistry and Bioengineering Laboratory

- Supervised and guided 40+ students during practicums with established procedures
- Assessed 40+ students' understanding and performance through discussions, assignments, and lab reports

Industrial Intern – PT Toray Synthetics Indonesia Jul – Aug 2025

Internship focusing on industrial-scale applications as a Bioengineering student

- Observed and analyzed wastewater treatment systems, evaluating 5+ industrial unit operations comprising neutralization, flocculation, aeration, and sedimentation to support the Activated Sludge Method.
- Learned practical implementation of monitoring system and control in an industrial-scale setting

Academic Tutor – HMRH ITB Oct 2024 – Jan 2025

Academic Tutorial for Organic Chemistry subject

- Taught an Organic Chemistry in the Academic Tutorial Program of HMRH to The Class of 2023

Freelancer – Perusahaan Umum BULOG Apr– Jun 2026

Supervised distribution process of government food subsidies to ensure compliance with established standards

- Monitored field distribution officers across 150+ sub-districts to ensure strict adherence to logistics protocols and system implementation
- Verified 2,000+ recipient data to ensure accurate allocation and prevent error in social assistance disbursement

ORGANIZATIONAL EXPERIENCES

Himpunan Mahasiswa Rekayasa Hayati (HMRH ITB) Jul 2023 – Apr 2026

Association of bioengineering student and acts as a developmental medium for its member

Head of Member Welfare Department HMRH ITB 2025

- Coordinate 15 ongoing welfare programs covering facilities, academic support, financial aid, and mental health initiatives

- Fulfilled various fundamental needs of HMRH ITB members, including education and mental health support among 100+ members

Head of Creative Design Department, Wisuda Oktober HMRH ITB 2024

- Led the visual design team to fulfill the visual needs of the October Graduation Ceremony at HMRH ITB and reached 550+ likes and 3400+ views on Instagram

Staff of Materials and Methods Division, Program Penerimaan Anggota Baru (PPAB)

- Designed and developed effective and relevant methods for delivering orientation materials

SKILLS, ACHIEVEMENTS, AND OTHER EXPERIENCES

- **Achievement** (2025): *Best Presentation* at National Agritech Competition 2025, IPB University, *Essay title*: Valorisasi Limbah Kakao Melalui Produksi Teobromin, Nanoliginin, dan Biochar dalam Sistem Terintegrasi
- **Achievement** (2025): *Top 10 Finalist* of The Process System Engineering Competition, Universitas Indonesia among 2800+ participants, *Paper title*: Techno-Economic and Life-Cycle Analysis of Theobromine Production Integrated with Vanillin and Biocharcoal from Cocoa Agricultural Residue via Biorefinery Approach
- **Achievement** (2025): *The 2nd Runner Up* of Chemical Engineering Paper PROCESS 2.0 AiChe ITB among 15 universities in Indonesia, *Paper title*: Valorisasi Limbah Batang Pisang (*Musa spp.*) sebagai Bahan Baku Produksi Bioetanol dalam rangka Mewujudkan Masa Depan Berkelanjutan
- **Achievement** (2024): *Best Staff* in the Materials and Methods Division, Program Penerimaan Anggota Baru HMRH ITB 2024 with the Class of 2023 as participants
- **Achievement** (2023): *Best Group Presentation* of Quantitative Physiology of Cells and Tissues subject, presented material on physiological membranes to the Class of 2022
- **Project** (2025): *Bioengineering Research*, Valorization of Cascara Coffee via Kombucha Fermentation
- **Project** (2025): *Bioengineering Research*, investigated the impact of fermentation duration using *Aspergillus niger* on nanolignin yield from oil palm empty fruit bunch (OPEFB) biomass
- **Project** (2024): *Phytoremediation Research*, investigated the effectiveness of Yellow Iris (*Iris pseudacorus*) and Vetiver Grass (*Vetiveria zizanioides*) in remediating organic waste
- **Project** (2024): *Quantitative Physiology of Cells and Tissues White Paper*, conducted a literature study on the preliminary design of Hyaluronic Acid Dermal Filler industrial scale production from *Streptococcus zooepidemicus*
- **Project** (2024): *Bioproduct Separation Principles Case Study*, determined the critical flux value in the harvesting process of *Chlorella vulgaris* using submerged microfiltration with PVDF-9 membranes
- **Project** (2024): *Transport Phenomena in Biosystem Case Study*, measured and predicted the kinematic viscosity of 3 kind of biodiesel mixtures
- **Project** (2023): *Research Based Learning* of Elementary Physics IIA, measured the diameter of natural fibers using the diffraction method
- **Project** (2022): *Research Based Learning* of Elementary Physics IA, determined the effect of various parameters on the travel distance of a pendulum-powered car
- **Volunteer** (2024): *Community Service* in Sukawangi Village, conducting outreach on the benefits and making of simple eco-enzymes for local villagers
- **Hard Skills**:
 - *Process Engineering & Sustainability*: SuperPro Designer, OpenLCA
 - *Software & Data Analysis*: Microsoft Excel, MATLAB, Python
 - *Design & Documentation*: Adobe Photoshop, Canva, Microsoft Word & PowerPoint
- **Soft Skills**: Effective Communication, Collaboration & Teamwork, Time Management & Multitasking, Critical Thinking & Problem-Solving, Creativity & Innovation, Adaptability & Resilience, Diligence & Responsibility
- **Relevant Courses**: Fermentation Technique, Mass and Energy Balances in Biosystem, Unit Operation of Bioengineering, Biomass Growth Modelling, Quantitative Physiology: Cells and Tissues, Principles of Bioproduct Separation, Bioengineering Laboratory – I & II, Transport Phenomena in Biosystem, and Clean Production Technology.