

RAFI ARRAHMAN

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SUMMARY

Soon-to-be Bioprocess Engineering graduate from Universitas Indonesia with a proven track record of bridging large-scale industrial optimization and rigorous laboratory precision. Successfully developed process simulations at Wilmar International to optimize plant methanol requirements by 7.08%, complemented by R&D experience scaling up complex mammalian cell cultures under strict aseptic standards at IMERI FKUI. A collaborative leader with project management expertise gained as Head of Internal and Lecturer Assistant, ready to drive continuous improvement in the manufacturing, oleochemical, or biopharmaceutical sectors.

EDUCATION

UNIVERSITAS INDONESIA

(2022 - 2026)

Bachelor of Bioprocess Engineering – GPA 3.52 / 4.00

Final Thesis: Production and Characterization of the Secretome from Bone Morphogenetic Protein-2 (BMP-2) Recombinant Umbilical Cord Mesenchymal Stem Cells (UC-MSc)

SMA NEGERI 1 TANJUNGPINANG

(2019 - 2022)

Final Score: 89.05

PROFESSIONAL EXPERIENCE

Stem Cell and Tissue Engineering Cluster, IMERI FKUI - Salemba, Indonesia

Research Assistant (Final Thesis)

(January 2026 – July 2026)

- Maintained and expanded multiple cell lines, including HEK293T, CHO, and UC-MSCs, adhering to specific project requirements.
- Successfully scaled up cultures to achieve high cell densities, reaching yields of up to 23 million cells for HEK293T, 3.5 million for CHO, and 1.5 million for UC-MSCs.
- Expertly prepared specialized basal and growth media, such as α -MEM and DMEM, ensuring exact formulations and maintaining strict aseptic techniques to support various cellular nutritional needs.
- Managed daily cell culture operations, including routine health monitoring, subculturing (seeding), and precise cell counting to ensure optimal growth kinetics and viability throughout the incubation period.

Wilmar International Tbk., PT Multimas Nabati Asahan – Cilegon, Indonesia

Process Engineer Internship

(August 2025 – September 2025)

- Developed comprehensive process simulations utilizing Aspen HYSYS, Aspen Plus, and SuperPro Designer for large scale biodiesel production, specifically focusing on CPO pre-neutralization and transesterification stages.
- Evaluated and optimized plant methanol requirements by 7.08% through detailed component flowrate analysis, providing data driven recommendations to balance stoichiometric needs with production cost efficiency.

Integrated Creative Engineering Learning Laboratory (i-CELL) FTUI – Depok, Indonesia

Laboratory Assistant: Bioethanol Production - Bioprocess Unit Operation II

(February 2026 – June 2026)

- Guide and assist students in understanding the concepts of conventional bioethanol production processes.

- Assist students in preparing glucose energy sources for yeast cultivation.
- Guide students in using instruments: Refractometer, Microscope, Spectrophotometer.
- Assess students' final reports using criteria specified in Excel.
- Enforced strict HSE protocols and aseptic techniques during yeast cultivation and instrument handling to ensure a safe laboratory environment.

Laboratory Assistant: Fluidization - Bioprocess Unit Operation I *(September 2025–December 2025)*

- Guide and assist students in understanding the concept of fluidization in industry.
- Help students practice the concept of fluidization in reactors through chambers in practical sessions.
- Assess students' final reports using criteria specified in Excel.
- Supervised the safe operation of fluidization reactor chambers, ensuring all practical sessions strictly complied with equipment safety guidelines and operational SOPs.

Laboratory Assistant: Oil Extraction and Identification of Lipid and Fatty Acid *(February 2025–June 2025)*

- Guide and assist students in understanding the basic principles in lipid extraction from cooking oil and analyze its saturation and solubility.
- Assist students in determining the amount of free fatty acid in cooking oil.
- Maintained rigorous chemical safety standards and supervised proper hazard-handling procedures during lipid extraction and acid determination.

Laboratory Assistant: Spectrophotometric Assessment of Vitamin C Content *(September 2024–December 2024)*

- Guide and assist students in understanding the basic principles in measuring drug levels using spectrophotometric methods.
- Assist students in measuring drug component levels based on spectrophotometric methods.
- Ensured strict adherence to laboratory safety regulations, including the proper handling and disposal of chemical reagents during assessments.

Lecturer Assistant of Chemical Engineering Department FTUI – Depok, Indonesia

Lecturer Assistant: Microalgae Cultivation Technology *(February 2026 – June 2026)*

- Assisting in resolving cases in the microalgae industry for 41 students before taking the midterm and final exams.
- Evaluate class assignment of students and recapitulate all of the score into single file
- Responsible for making an answer key for each assignment before evaluating students assignments

Lecturer Assistant: Heat Transfer *(February 2025 – June 2025)*

- Providing assistance for 32 students to ensure that students have a more comprehensive knowledge before taking the midterm and final exams.
- Evaluate class assignment of students and recapitulate all of the score into single file
- Responsible for making an answer key for each assignment before evaluating students assignments.

ORGANIZATIONAL EXPERIENCE

PROCESS AND GREEN ENGINEERING DAYS UI – Depok, Indonesia

Vice PIC of Design *(September 2024 – September 2025)*

- Design marketing collateral, including brochures, social media graphics, and digital ads.
- Maintain a cohesive visual style that reflects Process and Green Engineering Days Universitas Indonesia brand identity across all mediums.
- Work on projects that require custom visuals, icons, and illustrations.

Anak Awak UI – Depok, Indonesia

Head of Internal *(August 2023–August 2024)*

Focuses on activities, appreciation, and welfare related to internal members of Anak Awak UI.

- Create internal membership services for members in the areas of finance and health.

- Record members' achievements on a regular basis.
- Create internal activities to strengthen the relationship between all members.

PIC of Welcoming Mahasiswa Baru (Welmab) 2023

(August 2023–September 2023)

- Collecting data on Universitas Indonesia students from SNBP, SNBT, SIMAK, PPKB, and Talent Scouting.
- Creating an event to accept the membership of Anak Awak UI.
- Provide direction to new students in carrying out activities.

IMTK, Department of Chemical Engineering UI – Depok, Indonesia

PIC of Media and Design for Software Training Series (STS)

(April–August 2023)

- Create poster designs and collaborate with other student chapters.
- Collaborated with the publicity department to create a publicity video, and posted it on Instagram @imtkftui. There was a 105% increase in participants this year compared to the previous year.
- Create and build creative design of graphics and video using professional tools like Photoshop, Figma, etc. to promote and increase organization branding.

Staff of Science and Technology

(February 2023–February 2024)

Responsible for organizing all activities related to science and technology, as well as improving the scientific climate in the Chemical Engineering Department.

- Create monthly articles in the form of videos and Instagram posts.
- Tracking records the achievements of students of the Department of Chemical Engineering FTUI.
- Organizing national and international software training under the teaching of professionals and alumni.
- Organized paper training for new students.

SOCIETY OF BIOLOGICAL ENGINEER, University of Indonesia Student Chapter – Depok, Indonesia

PIC of Future Big Impactors

(March 2023–December 2023)

- Contacting professionals to serve as coaches during the event.
- Establish the relation and cooperation with internal divisions like creative and other
- Take the documentation of all the activities of FBI
- Being the PIC for Future Big Impactors, where there is training on competitions by professionals who have won the same field of competition that has been passed.

Staff of Training and Competition

(February 2023–February 2024)

- Being the PIC for Future Big Impactors, where there is training on competitions by professionals who have won the same field of competition that has been passed.
- Collaborated with PT Chandra Asri to be the source of study case ideas and to be the judging panel for BIOLEAGUE.

IKATAN AHLI TEKNIK PERMINYAKAN INDONESIA – Depok, Indonesia

Staff of Secretary

(February 2023–February 2024)

- Responsible for the Accountability Report in each division (total 12) and work program.
- Being the secretary of the division and organizing the timeline and projects.

HONORS, AWARDS, & OTHER EXPERIENCE

- 1st Catalytic Biorefinery International Conference Material Developer at Chulalongkorn University
- Best Staff of Training & Competition of SBE UISC 2023
- Top 3 Essay about Net Zero Emission by OIM DTK FTUI
- 2nd Runner-Up for PETRODAYS Business Case Competition held by SPE UISC 2024
- 2nd Runner-Up for BIOLEAGUE Product Innovation Competition held by SBE UISC 2024
- Excel for Advance Training by Digital Skill Area
- Copywriting Training by Digital Skill Area
- PowerPoint & Word Training by Digital Skill Area

- Production Planning and Inventory Control (PPIC) by Ioda Academy
- Digital Literacy by DB's Business Consulting Foundation
- Department of Chemical Engineering UI Study Case delegation for BIOLEAGUE Internal Competition
- 1st place in KSN-K in Biology 2020
- 3rd place in KSN-K in Biology 2021
- Finalist of KSN-P in Biology 2020
- Finalist of KSN-P in Biology 2021

SKILLS

SKILLS	Aseptic Techniques, Communication, Content Planning, Continuous Improvement, Economic Evaluation, English Proficiency, Health, Safety and Environment (HSE), Laboratory Techniques, Leadership, Problem Solving, Process Optimization, Project Management, Public Speaking, Quality Control, Research and Development, Teamwork.
IT SKILLS	Aspen HYSYS, Aspen Plus, Canva, Figma, MATLAB, Microsoft 365, SuperPro Designer
LANGUAGES	● Indonesia (UKBI's Score by Kemendikbud: 680 out of 800) ● English