



# Aqila Luthfiana Sarastya

♀ Ghent, Belgium

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## PROFILE

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Doctoral researcher with a passion for advancing greener industry. With a background in chemical engineering and circular economy, I focus on reducing the environmental impact of industrial processes through sustainability assessment tools such as life cycle assessment, scenario modelling, and systems thinking. My current research focuses on developing a digital decision support tool for prospective sustainability assessment in the pharmaceutical industry, integrating machine learning to support sustainability evaluations across different stages of pharmaceutical process development.

**Interest: Sustainability, Environmental Assessment, Decarbonisation, Digital Tools, Machine Learning**

## EDUCATION

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### PhD in Bioscience Engineering

Ghent University

**2025 – now**

Ghent, Belgium

- Part of PHARMECO project with research focus on developing digital decision support tool for prospective sustainability assessment in pharmaceutical industry.

### Erasmus Mundus International Master in Technology and Management for Circular Economy

University of Chemistry and Technology Prague | University of Oviedo | Abo Akademi University

**2023 – 2025**

Czechia-Spain-Finland

- Awarded the Erasmus Mundus fully funded scholarship.
- Courses highlight: Sustainability Assessment; Product Ecology; Pollution Prevention and Sustainable Technologies; Greenhouse Gas Mitigation, CO<sub>2</sub> Capture and Utilisation; Chemical Product Technology.
- Thesis: Decarbonisation of Chemical Industry through Electrification.

### Bachelor of Engineering | Chemical Engineering

Universitas Indonesia

**2017 – 2021**

Depok, Indonesia

- Completed bachelor studies with cum laude predicate with CGPA of 3.76/4.00.
- Courses highlight: Chemical Product Design, Plant Design, Chemical Process Simulation, Unit Operation Process.
- Thesis: Simulation of Rooftop PV System: A Case Study of House in BSD City.

### ASEAN International Mobility for Students (AIMS) Semester Exchange

Tokyo University of Agriculture and Technology

**2019 – 2020**

Tokyo, Japan

- Awarded the Japan Student Services Organisation (JASSO) and Tokyo University of Agriculture and Technology scholarships.
- Courses highlight: Environmental Engineering and Microbiology, Chemical Reaction Engineering, Separation Process.

## WORK EXPERIENCES

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### Global Research and Development Intern

ArcelorMittal Spain | Aviles, Spain

**Jun – Jul 2024**

- Research on Circular Economy in Mining Industry as a part of Summer Internship programme.
- Conducted a literature review on alternative use of mining tailings, focusing on steelmaking slag in cement clinker production.
- Studied the alternative steelmaking pathway for a low-carbon circular steel.

### Decarbonisation Expert

EQUATR by IDSURVEY | Jakarta, Indonesia

**Jun – Aug 2023**

- Pre-designed and developed a carbon calculator for business based on ISO 14064.
- Monitored the decarbonisation and carbon-related policies in Indonesia.
- Supported IDSURVEY's decarbonisation business strategy.

## Environment, Climate Action and Digital Trainee

Apr – Sep 2022

### Delegation of the European Union to Indonesia and Brunei Darussalam | Jakarta, Indonesia

- Supported the First Counsellor for Environment, Climate Action and Digital on matters related to climate change, renewable energy, circular economy and biodiversity in Indonesia.
- Conducted monitoring and analysis of Indonesia's political and economic landscape, with a particular focus on ongoing policies and their implications in environmental issues.
- Prepared monthly newsletters on the green agenda in Indonesia for distribution to EU Member States in Jakarta and EU Directorates-General in Brussels.
- Assisted the European Commission delegation in G20 2022 Environment, Climate and Energy Transition meetings.
- Assisted in organizing EU's annual events on climate change and environment in Indonesia.

## Key Account for Carbon Calculator

Dec 2021 – Jul 2022

### CarbonEthics | Jakarta, Indonesia

- Developed user-friendly carbon calculators to help businesses enhance their public outreach on sustainability.
- Educated individuals, businesses and organisations on carbon footprints and carbon offsetting.
- Promoted low-carbon lifestyle and raised awareness on the benefit of carbon sequestration, with a focus on blue carbon.

## PROJECTS

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### Decarbonisation of Chemical Industry through Electrification

Feb – Jun 2025

#### University of Chemistry and Technology Prague

- Master's thesis work on evaluating electrification as decarbonisation strategy in Czech chemical industry.
- Analysing Czech electrical grid readiness for electrification and evaluating electrification potentials in a fertiliser plant in the Czech Republic to improve its environmental performance.

### Life Cycle Assessment of Transitioning Mining Equipment Fleet to Biofuels in Finland

Nov – Dec 2024

#### Abo Akademi University

- Final project on Sustainability Assessment course, awarded as one of the best works in class.
- Conducted a life cycle assessment (LCA) of three different biofuels to identify the most effective option for reducing carbon emissions from mining fleet operations in Finland.

### Solar to Chemical: HMF from Biomass to FDCA

Jul 2020 – Jan 2021

#### Universitas Indonesia

- Capstone project for Plant Design course, awarded best in class.
- Designed a production plant for 2,5 furandicarboxylic acid (FDCA) from 5-hydromethylfurfural (HMF) derived from palm oil fruit bunches for bio-based plastics powered by photovoltaic.

### Evaluation of Soybean Meal with Protease and Carbohydrase as an Alternative Fermentation Medium and Purification Assessment of Cephalosporin C Production

Aug – Oct 2020

#### Agency for the Assessment and Application of Technology (BPPT)

- Internship work as part of Bachelor studies.
- Experimental lab work assessing soybean meal with protease and carbohydrase as an alternative fermentation medium for the production of Cephalosporin C.
- Experimental lab work evaluating the performance of fermentation broth purification in Cephalosporin C production.

## ADDITIONAL INFORMATION

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### SOFTWARE SKILLS

- SimaPro
- GAMS
- Aspen HYSYS
- PVsyst
- Power BI

### LANGUAGE SKILLS

- Indonesian (Native)
- English (C1): IELTS: 8.0
- Japanese (A1): JLPT N5: 113