



FATIN HAZIMAH

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Fresh graduate in Mechanical Engineering from Institut Teknologi Sepuluh Nopember (ITS) Surabaya with a GPA of 3.35, possessing a strong technical background in mechanical systems, energy conversion, and manufacturing processes. Experienced in product design, equipment maintenance, and project development through internships, research, and academic work. Proficient in CAD modeling (SolidWorks, AutoCAD), computational analysis using ANSYS, and technical documentation. Demonstrated ability in problem-solving, teamwork, and project execution gained from both industrial and organizational experiences. Adaptive, detail-oriented, and eager to contribute to diverse engineering roles across design, production, maintenance, and energy sectors.

Work Experiences

PT. INDOSPRING, Tbk – Gresik, Jawa Timur Jan 2024 - Feb 2024

Internship – Design Engineering

- Design and develop products from concept to completion, including testing for efficiency, safety, and reliability.
- Analyze and improve product design to address issues and enhance performance.

PT. Berkah Industri Mesin Angkat - Surabaya, Jawa Timur Jan 2025 - Jun 2025

Internship – Equipment and Maintenance

- Performed routine maintenance on heavy port equipment including Container Cranes, Rubber Tyred Gantry Cranes, and Reach Stackers. Troubleshoot technical issues, replaced damaged components, and conducted structural repairs reducing equipment downtime by 15% and improving operational reliability.
- Designed and developed a multi-level container office and Advance 18.00-25 IND-4 tire storage rack to improve logistics warehouse efficiency at Terminal Nilam, Port of Tanjung Perak, Surabaya. Responsibilities included designing a 7-tire capacity rack (119,000 kg), preparing Work Breakdown Structure (WBS), construction methods, and a budget plan worth IDR 48.5 million, as well as proposing a vertical tire storage system to optimize space utilization and safety.

Education

Institut Teknologi Sepuluh Nopember - Surabaya, Jawa Timur Jun 2021 - Aug 2025

Bachelor of Mechanical Engineering, 3.35/4.00

- **Concentration** : Mechanical Systems, Energy Conversion, Manufacturing Processes, Mechanical Design and Analysis.
- **Relevant Courses** : Engineering Mechanics (Statics and Dynamics), Fluid Mechanics, Thermodynamics, Heat Exchanger, Energy Conversion Systems, Computer-Aided Design (CAD), Computational Fluid Dynamics (CFD), Power and Drive Train Systems, Maintenance and Reliability Engineering.

Organizations

ANARGYA ITS – Surabaya, Jawa Timur Nov 2022 - Dec 2022

Logistic and Accommodation

- Managed team administration and documentation, including data organization, correspondence, and record keeping to support team operations.
- Oversaw supplier management and quality assurance by identifying, evaluating, and mitigating supplier risks, ensuring timely delivery of components that met specifications for efficient electric vehicle production.

Mechanical City VI – Surabaya, Jawa Timur Apr 2023 - Nov 2023

Secretary

- Prepared pre- and post-event reports to evaluate outcomes and ensure documentation accuracy.
- Created and managed event-related documents for Mechanical City VI, supporting 300+ participants and ensuring smooth administration across 5 sub-events.

Dewan Presidium Mesin – Surabaya, Jawa Timur Jan 2023 - Dec 2023

Secretary

- Implemented and maintained the Basic Constitution of the Mechanical Student Family (KMM) by ensuring compliance with regulations, supervising HMM performance, drafting laws with HMM, and overseeing candidate selection for the General Election Committee.
- Organized key legislative and organizational activities, including monthly performance reporting to KMM, as well as coordinating Congresses and RUMD to ensure governance continuity.

Badan Legislatif Mahasiswa FTIRS ITS – Surabaya, Jawa Timur Feb 2024 - Dec 2024

Vice President

- Assisted the Head of BLM FTIRS ITS in organizing, supervising, and coordinating activities, including forwarding instructions and delegating tasks to the Commission and Bureau.
- Monitored and evaluated member performance through intensive supervision and provided performance reports to the Departmental Student Associations.

Skills

Hard Skills : Mechanical Design and Analysis, Equipment Maintenance and Troubleshooting, Thermal and Fluid System Analysis, Energy Conversion, Renewable Energy Systems and Heat Exchangers, Manufacturing Processes, Computational Analysis using ANSYS, CAD Modeling (SolidWorks, AutoCAD), Data Analysis, Technical Documentation and Reporting, Microsoft Office (Excel, Word, PowerPoint), Project Planning and Execution, Root Cause Analysis, Continuous Improvement, and Occupational Health and Safety (HSE) Awareness including risk and hazard analysis.

Soft Skills : Leadership and team coordination gained from organizing student and community projects; analytical thinking and problem-solving applied in research and design development; effective communication and collaboration in multidisciplinary environments; adaptability and continuous learning across renewable energy, maintenance, and safety projects; and strong interpersonal and time management skills supporting successful project execution.

Achievements

- Pass of Simbelmawa Kemendikbud PKM KC 2025 "Smart Robot Sprayer Bertenaga Surya untuk Pertanian Berkelanjutan".
 - Developed a solar-powered autonomous robot for pesticide spraying in agricultural fields, targeting sustainable and low-risk farming practices. The system integrates photovoltaic panels for energy supply, remote-control operation, and dual-nozzle spraying mechanisms to enhance pesticide distribution efficiency.
 - Designed the mechanical structure using SolidWorks and simulated the electrical system—including Arduino/ESP32, sensors, and motor drivers—for field reliability. A functional prototype was built and tested for terrain adaptability, spray accuracy, and power autonomy under tropical conditions.

Certification and Training

- Certified User Autodesk Auto CAD [🔗](#) (2025): Certipoint - A Pearson VUE Business
- Training Autodesk Auto CAD [🔗](#) (2025): ITS Techno Sains Academy
- Training Operation Safety Excellence 2024 [🔗](#) (2024): Fleetnix
- Training EST 2024: Ansys Fluent [🔗](#) (2024): ITS Techno Sains Academy
- Training ISO 45001:2018 Occupational Health and Safety Management System [🔗](#) (2023): ITS Techno Sains Academy

Project

- Design Project "Capstone Design Dual Fuel Diesel System Design With Mixer Optimization For Waste To Electric" (2024)
 - Developed a dual-fuel diesel system with a custom venturi-based mixer to optimize blending of air and syngas from biomass gasification, enabling partial substitution of diesel fuel while maintaining engine performance.
 - Improved fuel economy and reduced emissions through efficient fuel-air mixing, with the system designed for both practical energy generation (Waste to Electric) and as an educational tool to promote renewable energy integration in conventional engines.
- Community Empowerment through Recycling Utilization and Early Waste Management Education via Booklets – Thematic Community Service (2024)
 - Led a community engagement program on waste sorting and recycling, including the development of educational materials (booklets, posters, stickers), in-person training sessions, and collaboration with local youth organizations to establish a scheduled recyclable waste collection system.
 - Led waste management program involving 100+ households, reducing inorganic waste generation by ~20% within six weeks and securing ITS News publication.
- Final Thesis "Numerical Study of Photovoltaic Cooling Integrated with Porous Material" (2025)
 - Conducted computational fluid dynamics (CFD) analysis on photovoltaic cooling performance using natural porous materials banana fiber and oil palm fiber integrated into cooling channels beneath the panel, with forced convection water assistance to enhance heat transfer.
 - Found oil palm fiber achieved superior cooling effectiveness (up to 79.98% at higher flow rates) compared to banana fiber and water alone, demonstrating the potential of sustainable, low-cost natural fibers to improve photovoltaic efficiency in tropical environments.