

## REZKY MAHESA NANDA

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### PERSONAL PROFILE

Growing up in a small county in Indonesia reminds me of its fresh and clean air. Now that I had to move to a bigger city, I realized that the county air is something I took for granted. Received my B.Sc. and M.Sc. in Engineering Physics with an emphasis on Energy Management, I intend to make cities cleaner by making their buildings work more energy-efficiently.

My research interests include building energy systems and artificial intelligence for energy system applications. I have been involved in numerous research projects that made me excel in Python, COMSOL Multiphysics, SketchUp, and EnergyPlus.

### EDUCATION

Master of Science (M.Sc) – Engineering Physics  
*Institut Teknologi Bandung*

August 2021 –  
August 2022

- GPA: 4.00 out of 4.00 (Cum Laude)
- Thesis: “Development of Reinforcement Learning Controller for Air Conditioning System to Increase Self-Consumption in University Buildings”
- Courses: SCADA System, Thermal Comfort System, Building Management System, Lighting Design, Automation System, Energy System Reliability, Energy System Efficiency, Hybrid Renewable Energy System

Bachelor of Science (B.Sc) – Engineering Physics  
*Institut Teknologi Bandung*

August 2017 –  
July 2021

- GPA: 3.68 out of 4.00 (Cum Laude)
- Thesis: “Microclimate Regulation System Design in Greenhouse to Promote Precision Agriculture”
- Courses: Building Physics, Energy and Thermal System, Energy and Thermal Laboratory, Thermal Environmental Engineering, Energy Conservation, Renewable Energy, Engineering Data Science

### WORK AND RESEARCH EXPERIENCE

Research Associate  
*Department of The Built Environment, National University of Singapore*

March 2024 -  
Present

- Assigned in Profile-based Indoor Positioning System with Directional Fans project.
  - Surveying various technologies for indoor positioning system.
  - Evaluating the hardware technical feasibility.

Environmentally Sustainable Design (ESD) Engineer  
*Afogreen Build Pte Ltd*

February 2023 –  
July 2023

- Being a pioneering team member to conduct greenhouse gas emission analysis for several projects.
- Assisted in preparing documents for green building certifications (Green Mark and LEED)

Junior Research Engineer	August 2022 –
<i>Energy Management Laboratory, Institut Teknologi Bandung</i>	January 2023

- Assisted in research paper writing. One paper was published in a Q3 Journal.
- Responsible for conducting battery thermal modelling in a project.

Postgraduate Researcher	August 2021 –
<i>Energy Management Laboratory, Institut Teknologi Bandung</i>	August 2022

Project: “Development of Reinforcement Learning Controller for Air Conditioning System to Increase Self-Consumption in University Buildings”

- Programmed a Reinforcement Learning Controller which was able to increase the building’s maximum PV self-consumption to as high as 6.58% and saved 400kWh of electricity annually, while maintaining thermal comfort to be around  $-0.5 \leq PMV \leq 0.5$ .

## PUBLICATION

Leksono, E., Mandhany, A., Haq, I. N., Pradipta, J., Utama, P. H. K., Iskandar, R. F., & **Nanda, R. M.** (2023). Development of Non-Intrusive Load Monitoring of Electricity Loads Classification with Low-Frequency Sampling Based on Support Vector Machine. *Journal of Engineering and Technological Sciences*.

## TEACHING EXPERIENCE

- |  |                        |
|--|------------------------|
| • Energy and Thermal System Teaching Assistant | January – May 2022     |
| • Heat and Mass Transfer Teaching Assistant    | August – December 2021 |
| • Fluid Mechanics Teaching Assistant           | August – December 2019 |

## FUNDING AND AWARDS

- |  |           |
|--|-----------|
| • Dean Award: Highest GPA in Master’s Program of Engineering Physics                                 | 2022      |
| • Ganesha Talent Assistantship Master Program Scholarship Awardee                                    | 2021-2022 |
| • 2 <sup>nd</sup> Place in International Design Competition: Applied Engineering Challenge by ASHRAE | 2020      |

## EXAM SCORES AND CERTIFICATION

- Certified SOLIDWORKS Associate  
Dassault Systemes (Credential ID: C-7GJCYNWHE4)  
No expiration date
- IELTS Academic (Overall Band Score 7.5)  
IELTS Official  
Valid until October 2024
- GRE General (323 for Verbal and Quantitative Reasoning, 3.5 for Analytical Writing Assessment)  
ETS  
Valid until November 2028