LASITH DISSANAYAKE

MATERIALS SCIENCE & ENGINEERING

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EXPERIENCE

Temporary Instructor - Department of Materials Science and Engineering, University of Moratuwa
08/2025 - Present

- Facilitated practical sessions and laboratory experiments
- Providing academic support and mentorship for coursework
- Assisted academic staff with contribution for ongoing projects

Michelin Lanka (Pvt) Ltd - Casting Product Division
R&D Department - Intern
11/2023 - 05/2024

- Experienced in Casting Manufacturing Practices and Procedures.
- Participated in Training sessions and Managerial Meetings.
- Conducted Waste (Fine Dust) Reduction projects.

EDUCATIONAL BACKGROUND

B.Sc. Eng. Hons. in Materials Science & Engineering
University of Moratuwa
2021 - 2025, July

- CGPA - 3.55 (with 4 Dean's List Performances)
- Focused on integrating the Machine Learning and Materials Modelling with Materials Science and Engineering

Kingswood College Kandy
2005 - 2018

- GCE O/L Examination - 8A, 1B (English Medium)
- GCE A/L Examination - 2A, 1B (Sinhala Medium)

EXTRA-CURRICULAR ACTIVITIES

Web Manager
Society of Materials Engineering Students
2023, September - 2025, July

Director of Public Relations Piller
Mora Esports Community
2022 - 2023

linkedin.com/in/lasith-dissanayake/

PORTFOLIO WEBSITE

https://lasith-mse.netlify.app/

SKILLS

- Leadership
- Teamwork
- Problem-Solving
- Communication skills
- 2D Drawings (AutoCAD)
- 3D Modeling (Solid Edge, Solidworks)
- 3D Animations (Blender)
- Programming (Python)
- Machine Learning

QUALIFICATIONS

- Lean Six Sigma Black Belt
- Lean Specialist
- Minitab Beginner

VOLUNTEER WORK

International Service Director
Rotaract Club of Kandy
2021-2022

Treasurer
Rotaract Club of Kandy
2020-2021

PROJECTS

Fine Dust Addition - 2024 (Internship Period)

Conducted this project to improve the **reuse of waste** (fine dust, which is a result of sand plant processing) of the CPD plant of Michelin Lanka (Pvt) Ltd. The idea of the **first phase** of this project was to find the amount of fine dust that can be added to the sand mixture and reused. The **second phase** of this project was implemented by reusing the fine dust in the process again and **analyzing the properties and the defects** of the metal pieces before and after.

BOM Optimization - 2024 (Internship Period)

Initially, the BOM (Bill of Materials) was being updated **based on the stock availability**. The suggested approach was to optimize the BOM, considering **3 factors**: expected chemical **composition**, **availability**, and **cost** of raw material. Then a score is given to each BOM prepared according to the factors mentioned. Multiple BOMs will be prepared, and one with the highest score will be passed to proceed with the production. An **MS Excel** document was created, powered with **VBA** (Visual Basic for Applications) for monitoring and optimization of the BOM.

Dust Burning - 2024 (Internship Period)

The C content (w/w%) of the **Fine Dust waste** exceeded the threshold for disposal to the environment. To reduce the C content, an approach to burn and remove as CO_2 was suggested. Based on the premise, conducted the **LOI (Loss of Ignition)** tests and analyzed the amounts of Carbon that can be removed from the **Fine dust waste**. Separate samples were burnt with 30-minute spans from 0 to 4 hours, at 800°C, 900°C, and 1000°C.

Automated Email System - 2024 (Internship Period)

The **chemical compositions** of the samples were examined using the **spectroscopy machine** in the Furnace Laboratory. The details were output by the spectroscopy to a connected computer. Then the **output results must be examined separately**, and if any issues were noted, that **must be informed** to the respective departments via email. I have created an **automated system** that can directly **retrieve data** from the spectroscopy, and if any sample is **out of specification limits**, the responsible departments will be **alerted** immediately via email. (Used MS Excel, VBA)

Machine Learning Based Optimization of CZTS Photovoltaic Parameters - 2025

Completed the Final Year Project relating 6 output photovoltaic parameters (Short Circuit Current Density, Open Circuit Voltage, etc.) with selected input parameters and **built empirical equations** (non-linear relationships) for each output parameter using **Machine Learning models**. The built relationships were validated using **simulation (SCAPS-1D)** values. Relating the equations from ML and Simulations, a **2nd degree equation** was developed for the photovoltaic bandgap with compositional ratios of Cu, Zn and Sn.

Design and Implementation of a Corrosion Protection System for Offshore Substation Platform - 2024

Conducted simulations using **COMSOL Multiphysics Software** to design a **Corrosion Protection System** for the legs of an offshore substation platform. Suggested a **cathodic protection system** and tried multiple designs. Suggested the most suitable design for the Cathodic Protection System based on simulated results.

REFERENCES

Dr. D. Attygalle
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