

LASITH DISSANAYAKE

MATERIALS SCIENCE & ENGINEERING

lasithdissanayake.official@gmail.com

419/1, Mankada Road, Kadawatha

+94 770 212 604



EXPERIENCE

Temporary Instructor - Department of Materials Science and Engineering, University of Moratuwa

08/2025 - Present

- Facilitated practical sessions and laboratory experiments
- 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.
- Developed an automated email system to alert for out-of-specification issues in Spectrometers
- Conducted a Time Series Analysis for BOM optimization

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 Pillar

Mora Esports Community

2022 - 2023



[linkedin.com/in/lasith-dissanayake/](https://www.linkedin.com/in/lasith-dissanayake/)

PORTFOLIO WEBSITE

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

SKILLS

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

QUALIFICATIONS

- Supervised Machine Learning (Stanford Online)
- Neural Networks and Deep Learning (DeepLearning.ai)
- Skill Certificate - Python (HackerRank)
- Lean Six Sigma Black Belt (Udemy)

VOLUNTEER WORK

International Service Director

Rotaract Club of Kandy

2021-2022

Treasurer

Rotaract Club of Kandy

2020-2021

PROJECTS

Image Analysis for Fish Embryo Acute Toxicity (FET) Tests - 2026 (Ongoing)

Developing an **image analysis pipeline** using already developed models such as ImageNet, ResNet, SAM, and YOLO models to analyze the images of the **fish embryo at 24h, 48h, and 72h** time intervals. Test samples were repeated at varying composition ratios, such as 1:1, 1:2, and 2:1. Varying concentrations were selected as for example, 1:1 ratio uses, 225ppm:225ppm, 450ppm:450ppm, 900ppm:900ppm, and so on. The image analysis model development aimed to **analyze the deviation of the characteristics** of the grown embryos and compare the damage from toxicity on the grown fish in the testing wells compared to the control experiment.

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. By relating the equations from ML and Simulations, a **2nd-degree equation** was developed for the photovoltaic bandgap as a function of compositional ratios of Cu, Zn, and Sn.

Automated Email System - 2024 (Internship)

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 are noted, they must be reported 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)

Design 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.

Investigating a Diffusion-Based Approach for Time-Since-Death Estimation - 2023

Completed a project focused on accurately estimating **post-mortem interval (PMI)** by analyzing **potassium ion concentration** in biological samples. Developed a scientifically **validated equation** for determining time since death, leveraging **diffusion theory** and precise potassium ion measurements to enhance the reliability of forensic investigations. Developed a program in **Python**, when the specific parameters are given, display the estimated Time-Since-Death.

REFERENCES

Prof. D. Attygalle
Department of Materials Science and Engineering
University of Moratuwa
dattyga@uom.lk
+94 77 017 2026

Prof. G.I.P. de Silva
Department of Materials Science and Engineering
University of Moratuwa
indikagip@uom.lk
+94 71 848 4886