

Isuru Chanilka Mawella Withanawasam

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📠 Isuru Withanawasam

Personal Statement

I am a committed, self-motivated, knowledgeable, and innovative physics master's student who wishes to contribute to the field of science by applying the knowledge and experience I gained during my studies.

Education

- **Master of Science** Sep 2024 – Present
Erasmus Mundus LASCALA (Large Scale Accelerators and Lasers) Program
 - Szeged University, Hungary: Core courses included Femtosecond and Nonlinear Optics, Scalar Diffraction Theory, Gravitational Waves with Interferometric Instruments, and Femtosecond Physics with Python.
 - Lund University, Sweden: Core courses included Light–Matter Interaction, Optoelectronics and Optical Communication, Advanced Optics and Lasers, and Biophotonics.
 - Paris-Saclay University, France: Core courses included Quantum Solid-State Physics, Atomic, Molecular, and Optical (AMO) Physics, Nuclear Physics, Laser Physics, and Experimental Physics.
 - **BSc (Hons) in Physics** Jan 2019 – June 2023
University of Colombo, Sri Lanka
 - Second Class Upper Division
 - GPA: 3.55/4.00 for 126 Credits (252 ECTS)
 - Core courses: Quantum Mechanics, Classical Mechanics, Electromagnetic Fields, Statistical Physics, Solid State Physics, Advanced Optics, Nuclear & Particle Physics
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Research Experience

- **Master's Thesis** 2026 – Present
Title: Medical Spectroscopy for Lung Monitoring Using Gas in Scattering Media Absorption Spectroscopy (GASMAS)
Supervisor: Dr. Anna-Lena Sahlberg
- **Extension of Bachelor's Thesis Project** 2023 – 2024
Title: Graphene-Based Nanomaterials for Microplastic Adsorption
Supervisor: Dr. Dilushan R. Jayasundara
- **Bachelor's Thesis Project** 2022 – 2023
Title: Aflatoxin adsorbent using Graphene-based nanomaterials
Supervisor: Dr. Dilushan R. Jayasundara
 - Created nanomaterials to adsorb aflatoxin, a food contaminant. Tasks included synthesis, characterization, optimization, and application.
- **Volunteer Research Project** 2022 – 2023
Title: Design and develop a low-cost surface plasmon resonance sensor using Cu/Graphene/ITO substrate
Supervisors: Prof. J.K.D.S. Jayanetti, Dr. M.S. Gunewardene, Dr. H.H.E. Jayaweera, Dr. J.L.K. Jayasigha, Dr. K.D.N.R. Kalubowila

Work Experience

- **Teaching Assistant** Feb 2024 – Aug 2024
Department of Physics, University of Ruhuna, Sri Lanka
 - Tutor: Thermal Physics (Level 2)
 - Assisted in General Physics Laboratory Courses (Level 1, 2, and 3) and Electronics Laboratory Course (Level 2).
 - **Teaching Assistant** June 2023 – Feb 2024
Department of Physics, University of Colombo, Sri Lanka
 - Demonstrator in Charge: Physics Laboratory (Level 1)
 - Designed experiments and guided approximately 150 students. Conducted assessments and coordinated among students, lecturers, and staff.
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Research Interests

- Applied Photonics and Optical Instrumentation, Biophotonics and Biomedical Optics, Optical Spectroscopy, Fiber Optic Sensing and Communication, Optical Remote Sensing, Integrated Photonics and Microresonators, Ultrafast Laser Systems and Nonlinear Optics
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Conference Presentations & Abstracts

- **APS March Meeting 2024**
Title: Efficient Removal of Microplastics Using Magnetic-Reduced Graphene Oxide (MrGO) as an Adsorbent Material
 - **Annual Research Symposium, University of Colombo 2022**
Title: A low-cost optical design for a surface plasmon resonance (SPR) sensor using a Cu/Graphene/ITO substrate
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Skills and Techniques

- **Programming Languages:** Python, MATLAB, Java, C
- **Embedded Systems Programming:** Arduino, ESP32 (microcontroller programming)
- **Scientific Software:** LabVIEW, Origin, NI Multisim, SPSS, Minitab, EAGLE
- **Other Tools:** MS Office package, Overleaf (LaTeX)
- **Laboratory Skills:** Optical alignment and characterization, Laser operation and safety, Spectroscopy techniques, Precision measurement techniques, Data analysis and visualization, Design of Experiments (DOE), Troubleshooting
- **Soft Skills:** Scientific communication, Teamwork, Problem-solving, Critical thinking, Time management

Projects

- Development of Three-Dimensional Optical Coherence Tomography (OCT) Microscopy System for High-Resolution Biological Tissue Imaging
- Characterization of Milk Scattering Properties Using Goniometry
- Raman Spectroscopy Analysis of Graphene Oxide on Flexible Substrates Under Tensile Strain(DOI: 10.13140/RG.2.2.35800.26886)

Leadership & Extracurricular Activities

- **Vice President**, Physics Society, University of Colombo, Sri Lanka **2022 – 2023**
 - **Director of Sustainable Development**, MLOC Leo Club, Sri Lanka **2022 – 2023**
 - **Secretary**, Physics Society, University of Colombo, Sri Lanka **2021 – 2022**
 - **Director of Education**, Leo Club of UOCFOS, Sri Lanka **2020 – 2021**
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Volunteering Experience

- **”Sarasavi Piyagata” Program**, Sasnaka Sansada Foundation, Sri Lanka **2024**
Served as a resource person at the ”Sarasavi Piyagata” program, delivering a session on physical science degrees and career opportunities for pre-university students.
 - **Project Science Bus**, Physics Society, University of Colombo, Sri Lanka **2022 – 2023**
Science outreach program aimed at promoting science education in rural areas of Sri Lanka; funded by SPIE.
 - **Project ”SIPSARA”**, Leo Club of UOCFOS, Sri Lanka **2019 – 2021**
A project focused on enhancing quality education in schools across Sri Lanka.
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Professional Memberships

- American Physical Society (APS)
 - Sri Lanka Association for the Advancement of Science (SLAAS)
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References

- **Dr. Anna-Lena Sahlberg**
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- **Dr. Cord Arnold**
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