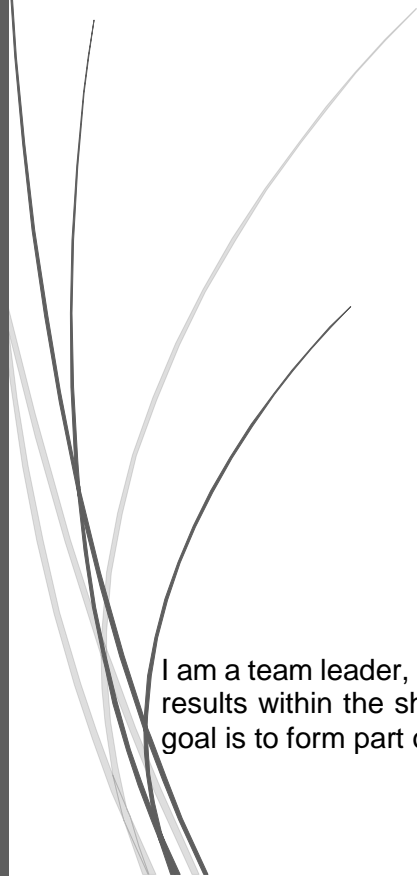




RESUME

Mr. MACHABA L.A. LETSWALO



I am a team leader, result oriented, and relates well with other people. I always strive to achieve the best results within the shortest time possible as well as promote the integrity of Laboratory profession. My goal is to form part or lead a team that has quest to win.

MR. MACHABA LEANYATSA ABRAHAM LETSWALO

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Driver's licence: C1

Language Profince: English, Sepedi, Setswana, Zulu and Tsonga



OBJECTIVE

To be a scientist involved in academic, research and professional activities with the aim of contributing positively to the growth of chemistry and physics fields and to Laboratory Sciences.

EXPERTISE

- Excellent knowledge of theory and concept of Physics and Chemistry.
- Setup, realisation and analysis of experiments in all fields of Chemistry & Physics.
- Sample preparation using Solid-State reaction and Combustion method
- Photoluminescence (PL), UV-VIS, SEM, TEM, XRD, TOF-SIM, Auger Electron spectroscopy, and XPS
- Knowledge of different materials science in Computational simulation.
- Experienced lab technician with expertise in Titration, Steam Distillation, Vacuum Distillation, and Chromatography Methods.
- In-depth knowledge of Chemistry & Physics-safety regulations.
- Handling of different measuring tools.
- Handling and operation of different measuring instruments.
- Characteristics of the most important basic circuit arrangement.
- Handling of chemicals, mixing and separating methods, knowledge of the toxic substance's regulations.

SKILLS AND COMPETENCIES

- Good academic and administrative skills.
- Excellent presentation skills.
- The ability to work under pressure.
- A high level of proficiency in spoken and written English.
- Experience using advanced mathematical typesetting software.
- Good interpersonal skills that contribute to a collegial atmosphere.
- The ability to work independently and collaboratively.
- Strong work ethic and integrity.
- Quality Assurance & Controls
- Laboratory Safety and Wet-Lab expertise
- analytical Techniques
- Writing a scientific report.
- Ability to determine work priorities and assign work to other Laboratory Technicians.
- Skill to perform laboratory tests and analyses.
- Knowledge of laboratory terminology and equipment.
- Knowledge of the methods of analysing and presenting results.
- Ability to handle samples and laboratory equipment.
- Ability to make mathematical computations.
- Ability to learn new data reduction and acquisition software packages.

EDUCATION

Degree: Doctor of Philosophy (PhD) in Physics

University of Johannesburg

Year of completion: Current study

Research study on the effect of anionic group and synthesis and luminescence properties of Zn-SO₅-RE³⁺ doped with different lanthanides for biological images, solar cells and light emitting diode application.

Degree: Master in Nanoscience (Major in Physics)

University of Johannesburg

Year of completion: 2017

Courses: Advance Nanophysics, Fundamentals of Nanoscience, Fundamental of Nano-chemistry, Fundamental Nano-biotechnology, Instrumentation in Nanoscience, Nanoscience Minor Dissertation, Management and Entrepreneur

Thesis: Effect of partially substitution of anionic on luminescence properties of CaMoO₄:Eu³⁺ for application of solid-state lighting.

Degree: Bachelor of Science Honors (Physics)

University of Limpopo

Year of completion: 2015

Major Courses: Quantum Mechanics, Solid State Physics, Statistical Mechanics, Electrodynamics & Research Project (Physics)

Thesis: Computational Studies of Oxygen Mobility on Palladium Nanocluster

Degree: Bachelor of Science (Chemistry and Physics)

University of Limpopo

Year of completion: 2014

Major Courses: Analytical Chemistry; Organic Chemistry, Physical Chemistry; Inorganic Chemistry; Thermodynamic/Statistical Mechanics; Solid State Physics & Systems Theory & Electronics

National Senior Certificate

Kheale Senior Secondary School

Year of completion: 2010

Major Awards: Best Performer in Physics – Mopani District (Mamaila circuit)

EMPLOYMENT HISTORY

UNIVERSITY OF JOHANNESBURG – DEPARTMENT OF PHYSICS

Position: Assistant Lecturer

Nov 2017 (**Current employment**)

Nature of work and responsibilities:

- Plan and present suitable learning experiences for all students.
- Develop course materials and teaching (Analytical Chemistry and Building Science) Dimensional Analysis, Basic Mathematics for Physics, Mechanics, Geometric Optics, Hydraulics, Photometry, Sound, Heat and Heat transfer.
- Documenting tools used for physics concept demonstrations.
- Moderating tests and exams
- Grading and administering classroom tests and assignments in the Physics class.
- Maintain and manage records and follow needed methods and practices.
- Participate in meetings and perform on staff committees as needed.
- Monitor students' laboratory work.
- Conducting course assessment tests.
- Designing curricular tests.
- Arranging practical work sessions at the laboratory.
- Guiding students on the procedures of performing specific experiments.
- Demonstrated and designed models relating to physical phenomenon.
- Using available teaching aids such as charts, Power Point presentations, etc.
- Maintaining attendance record.
- Strong commitment to good teaching and research.

**UNIVERSITY OF LIMPOPO
SCHOOL OF PHYSICS**

Position: Tutor

Duration: 2015 Jan to Nov 2015

Nature of work and responsibilities:

- Tutored approximately 150 students each semester for metallurgy, mechanic, electrical, chemical Engineering and construction science.
- Assessed both beginning knowledge and progress made to facilitate student success.
- Wrote weekly progress note for each student.
- Collaborated with lecturers to assess and set goal plans for each individual student.
- Provided feedback to student; assessed for knowledge and progress.
- Assessed each student to determine needs.

UNIVERSITY OF LIMPOPO-SCHOOL OF PHYSICS

Position: Lab Assistant

Duration: 2014 Jan to Dec 2015

Nature of work and responsibilities: Demonstrate practical to undergraduates' and, ensure that apparatus for the experiments are all available and installed simulation are working before the practical commenced. Ensure the scripts are marked; assist with the practical write-ups and assessment and facilitating safe disposal of laboratory waste. Performs other related work as assigned

UNIVERSITY OF LIMPOPO-SCHOOL OF CHEMISTRY

Position: Lab Assistant

Duration: Jan 2013 to Dec 2013

Nature of work and responsibilities: Presenting Practical's to undergraduate students maintain lab equipment and keep an up to date record of lab assets, Preparation of chemical reagents and equipment for laboratory experiments. Assist with assessment of practical write-ups in liaison with respective course lecturers, maintaining the chemical storage facilities, facilitating safe disposal of laboratory waste, marking the scripts of practical's, marks and teaching purposes. Assisting in analyzing and evaluating materials using various analytical techniques. Performs other related duties as assigned.

EXTRA CURRICULAR ACTIVITIES

- Attended the learning and teaching development workshop
- Nanoscience Workshop
- MAMs and blackboard training
- Moderation of Tests and Exams

KNOWLEDGE

- Basic lab procedures (wet chemistry, pH, dilutions, etc.).
- Working knowledge of HPLC, GC, UV-Vis, IR, FT-IR
- Excellent documentation skills.
- Basic understanding of statistical techniques, data analysis, and variability.
- Excellent computer skills (Excel, Word, PowerPoint).
- Specific experience with Empower chromatographic data system beneficial.
- Gravimetry.
- XRD (X-Ray Diffraction), SEM (Scanning Electron Microscopy) & Transmission electron microscopy (TEM).

AWARD AND LEADERSHIP

- Best presenter MSc student in Condensed Matter (SAIP 2017)
- Treasurer of the St. John's Apostolic Faith Mission Church Youth 2019
- Chairperson of the Turfloop United Apostolic Youth Guild (UL) 2014
- Choir Master of the Turfloop United Apostolic Youth Guild (UL) 2011- 2013
- Ordained Evangelist of the S. John's Church in Limpopo Province 2015
- General Secretary of the St. John's Church in Limpopo Province Eastern Diocese

PUBLICATION AND SUBMITTED

- **Effect of BO_3^{3-} ions on photoluminescence of $\text{CaMoO}_4:\text{Eu}^{3+}$ phosphor**
M.L.A Letswalo, L. Reddy, A. Balakrishna, H.C. Swart and O.M. Ntwaeaborwa.
- **Significant improved luminescence properties in $\text{CaMoO}_4:\text{Eu}^{3+}$ materials as highly efficient solid-state LED phosphors-Influence of anionic group SO_4^{2-} systems**
M.L.A Letswalo, L. Reddy, A. Balakrishna, H.C. Swart and O.M. Ntwaeaborwa.

- Investigation on Eu^{3+} ion red-emitting in PO_4^{3-} substituted CaMoO_4 phosphors by a simple solid-state method.

M.L.A Letswalo, L. Reddy, A. Balakrishna, H.C. Swart and O.M. Ntwaeaborwa.

CONFERENCE PRESENTATIONS

- South Africa Institution of Physics at Stellenbosch University (June 2017)
- University of Limpopo Research day at Bolivia Lodge (Sept 2015)

REFERENCES

Position	E-mail	Tell/Cell
Prof O.M Ntwaeaborwa (Professor) (University of Witwatersrand)	ntwaeab@gmail.com	011 717 6887
Dr. A Balakrishna (Researcher) University of Johannesburg	bavula@uj.ac.za	011 559 9230
Dr. L Reddy (Senior Lecturer)	krishr@uj.ac.za	011 559 6015