



Vaughan Royce Kildaire

BSc. science graduate,
physics & chemistry.

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About me

My name is Vaughan, I am a **BSc. Physics and Chemistry** graduate. My passion has always been within the field of physics, which I excelled in during my studies. I have, however, taken quite an interest into chemistry as well - a field I find a lot more approachable.

I even have my own mini chemistry lab with professional equipment which I conduct regular experimentation within along with documenting it for my [YouTube channel](#).

Citizenship

I am a dual-citizen of **South Africa** and **Portugal**. Willing to **relocate**.

Spoken languages

English

Portuguese

Afrikaans

Education

2021 - 2024 Bachelors of science Degree, **CUM LAUDE**
BSc. Physics and chemistry (complete) University of South Africa (UNISA)

Relevant coursework:

Chemistry:

THEORY:

- Organic chemistry
- Inorganic chemistry
- Analytical chemistry
- Physical chemistry
- Polymer chemistry

APPLIED:

- TLC, NMR, IR +UV-vis spectroscopy
- Extraction of organic and inorganic compounds
- Synthesis of organic compounds, inorganic complexes, and synthetic or bio-organic polymers.
- Crystallization and recrystallization of pure elements and organic chemicals.
- Standard titrations, potentiometric titrations, Volhard back titrations.
- Metal Electroplating, construction of Galvanic or electrolytic cell.
- Distillation of SO Many Different Chemicals.

Physics:

- Electromagnetism and thermodynamic physics.
- General relativity gravity and tensor calculus*.
- Differential geometry, applied metric spaces*.
- Engineering physics and statistics.
- Ordinary and Partial differential equations* (ODE, PDE*).
- Calculus in higher dimensions.
- Linear algebra.
- Real analysis*.
- Quantum mechanics, solid state physics.

* Taken as extra for enrichment purposes

2019 - 2020 Amended matric NSC
Amended matric: physical science and mathematics.

Dec. 2013 High school Bridge House School
High school matric, Bridge House, Franschhoek, 7690, South Africa

Experiences

since 2020 Tutoring Teach Me 2, and Private practice
I have worked as a private and part time employed tutor since 2020. If I could, I would Teach at a formal institute, as I really enjoy teaching as much as I enjoy learning. Subjects I Teach include: University; mathematics, physics and chemistry, and Highschool; math and physical science. This includes letters of reference from past clients.

since 2022 Lab work UNISA, and Delta Labs (Pty) Ltd.
I have Laboratory Experience In may synthesis and procedures; e.g., in saponification, nitrating, synthesis of aspirin and extraction of caffeine from tea. I have Also Funded and conducted my own experiments and synthesis, for the following:

- 1. Solvated electrons experiment and condensation of ammonia
- 2. Teaching titrations to students
- 3. Nitrating of cellulose, to make nitrocellulose
- 4. Saponification to make soap

Delta Labs

I run Delta Labs, a passion project of mine, whereby I create education chemistry content in the form of YouTube videos. These take place in a small-scale laboratory of mine that I have built over the years. It has helped me maintain my practice in the lab environment along with helping me gain a huge amount of additional experience in the process.

Religion

Roman Catholic.

No frequent Sunday work, if possible.

Projects

2021-2025

Chemistry Projects

Successfully funded and accomplished personal project experiment of: Solvated electrons of lithium metal in liquid ammonia! Chemistry and general Science Lab Experience; TLC, NMR, IR +UV-vis spectroscopy, Extraction of caffeine, formation and crystallization of iodine, synthesis of pharmaceutical complex, many inorganic cobalt complexes, soap, synthesis of nitrocellulose, ammonium nitrate crystallization, Chen-Kao organic complex, Solvated electrons, standard titrations, potentiometric titrations, Volhard back titrations, copper electroplating, determination of eutectic point and azeotropic point of liquid and solid (organic and metal) substances, and many more.

Personal project

2021-2025

Computer programming

Experienced in Python programming language and applied applications, both from training and self-project research. Learned how to implement RSA encryption in C++.

Personal project

Programming Languages: **Python and C++/C .**



We certify that

VAUGHAN ROYCE KILDAIRE

*having complied with the requirements of the Higher Education Act
and the Institutional Statute, was admitted to the degree of*

BACHELOR OF SCIENCE

at a congregation of the University

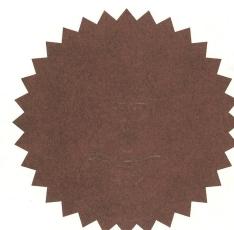
on 7 June 2025

CUM LAUDE



Vice Chancellor


University Registrar





Executive Dean

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