

# John Lawrence Zachariah Ddungu

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**D.O.B:** 14 June 1991

My Masters Research Project has directed my current research interests into the area of supramolecular photochemistry, in which I have explored the development of optical imaging nanoprobe for cancer cell detection. I am now eager to apply my acquired skills in the new challenge of a PhD project, exploring the development of novel luminescent materials. My ultimate aim is to use the experience gained from the project, along with my other skills, in order to embark on a career as a professional research chemist.

## Education

### **2010-2014 MSci (Hons) Chemistry with Study Abroad (Upper-second Class)**

University of Birmingham, UK (Year abroad at Phillips Universität Marburg, Germany)

**Dissertation Project:** "Luminescent nanoparticles in the visible and near IR functionalised with peptides for targeting cancer cells", under supervision of Professor Zoe Pikramenou (First class)

### **2009-2010 1<sup>st</sup> year of BSc Chemistry**

Aston University, UK

### **2002-2009 The Ecclesbourne School, UK**

A Levels: Chemistry (B), Economics (B), Biology (C), AS Level German (C), 10 GCSEs (A-C)

## Research experience

### **May 2015-present Karlsruhe Institute of Technology (KIT): Research Associate**

- Synthesis and characterisation of ultra-small silicon nanoparticles. Acquiring the necessary skills and knowledge of techniques for the development and continuation of this project towards a PhD thesis (Supervisor: Professor Luisa De Cola. Funded through the "NanoTrackng" project of the Helmholtz Association).

### **Oct 2013-April 2014 Research training during Masters Research Project**

- Analysis and documentation of all risks and hazards associated with experimental methods by producing comprehensive COSHH forms, resulting in zero incidents over the course of the project.
- Thorough analysis of synthesised products using mass, IR and NMR spectrometry as well as UV/Vis, elemental analysis, luminescence spectroscopy and Dynamic Light Scattering (DLS) with use of the associated computer programmes.
- Use of Schlenk and high vacuum techniques for advanced inorganic and organic syntheses; explored novel methods of existing syntheses, attempting to make a number of target molecules more readily available.

## Key skills

### **Technical:**

- Used different Varian Cary and Shimadzu spectrophotometers for accurate calculation of the absorption maxima of prepared transition-metal complexes, gold nanoparticles and silicon nanoparticles.
- Operated different PTI fluorescence systems and an Edinburgh Instruments FLSP920 Steady State fluorescence and phosphorescence lifetime spectrometer to determine emission maxima, luminescence lifetimes and quantum yields of prepared samples.
- Early training in the operation of electron microscopes for the techniques TEM and SEM, required for the visual size and dispersity characterisation of ultra-small nanoparticles.

### **Communication:**

- Created and delivered regular coherent presentations during my projects and throughout my degree in order to communicate work and research to peers and co-workers.
- Utilised excellent interpersonal skills during my year abroad to quickly adapt to the new environment and develop strong contacts with others of different nationalities.
- Applied my language skills to promote study in the UK to German students as an ambassador for Birmingham University at a foreign study fair in Germany.

### **Organisation and time management:**

- Produced long term plans, allocating adequate time for lab work and the use of high demand analytical equipment well in advance, allowing the acquisition of a good quantity of highly relevant results within the timeframe of my masters research project.
- Planned out academic tutorials and karate classes to include a number of specific sections, which allowed all students to have their differing requirements addressed within the allocated class time.
- Scheduled the delivery of the various equipment needed to build the Valefest festival site well in advance of the festival, upholding prior agreements with the site owners and avoiding late arrivals by meeting the deadlines.

### **Academic teaching experience**

#### **Sept 2014- Private Tutor**

**May 2015**

- Deliver tailored tuition in the Sciences and German to students at all levels of schooling and to adult learners, boosting the progression towards their educational goals.

### **Other work experience**

#### **Mar 2010- JMK Restaurants Ltd McDonald's Restaurants: Full & Part-time Crew Member**

**Aug 2012**

- Supported and at times led a team of other crew members, contributing to increased productivity levels, high customer satisfaction and the stores good assessments.

#### **Sept 2011- Guild of Students, University of Birmingham: Student Mentor Welcome Team Member**

**Jun 2012**

- Provided support and advice for new students at the university as part of a team of mentors, streamlining their transition into university life.

#### **Jul 2007- GKR Karate International: Volunteer Karate Instructor**

**Sept 2009**

- Trained and enthused students of all ages in Karate using creative, self-formulated class plans, leading to their sustained successes in grading assessments and tournaments.

### **Professional Memberships**

#### **2009- Affiliate Member of the Royal Society of Chemistry (RSC)**

**present**

### **Other Skills**

**IT:** High competency with Microsoft Office programmes, Origin, Kaleidagraph, ChemDraw and MestreNova, which were used extensively throughout my project to produce reports, reference databases and presentations.

**Languages:** German (B2/B1), French (A1), Polish (A1)

### **Interests**

- Avid reader of the RSC publications Chemistry World, RSC News, Chemical Science, and Chemical Communications, which I use to keep up to date with developments in chemistry, particularly in inorganic, and supramolecular photochemistry.
- Training and competing in karate (member of GKR Karate, 2002-present, current black belt).
- Event management ("Valefest" Organising Committee Member, 2011-2014: Contributed to the organisation, promotion and running of the UK's largest student run festival for three editions, raising thousands of pounds for different charities each time).
- Breakdancing (member of the university Breakdance society, 2010-2014: Promoted the society and advised the president on events and further training opportunities, which led to more memberships and higher attendance at competitions).

### **Referees:**

#### **Professor Zoe Pikramenou**

*MSci Project Supervisor*

*Professor of Inorganic Chemistry and Photophysics*

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#### **Professor Graham Worth**

*Professor in Theoretical Chemistry*

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