



# Graduation Programme

**The Future. Reimagined.**



**Welcome to the  
Graduation Ceremony of the  
University of Johannesburg  
20 April 2020 at 17:00**

**Welkom by die  
Gradeplegtigheid van die  
Universiteit van Johannesburg  
20 April 2020 om 17:00**

**Le a Amogelwa  
Moletlong wa Dikapešo wa  
Yunibesithi ya Johannesburg  
20 Moranang 2020 ka 17:00**

**Niyamukelwa  
eMcimbini wokweThweswa kweZiqu  
weNyuvesi yaseJohannesburg  
20 kuMbaso 2020 ngele-17:00**

# **UNIVERSITY OF JOHANNESBURG**

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Prof T Marwala  
BS Eng (Case Western Reserve USA), MEng (UP), PhD (Cambridge UK)

### **DEPUTY VICE-CHANCELLOR ACADEMIC**

Prof A Parekh  
BA, BA Hons, MA (UDW), MA (Kansas USA), DPhil (UDW)

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BEng, MEng, PhD (UP)

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BA, HEd, BA Hons, MA, PhD (RAU)

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BCom (Rhodes), BCom Hons (UKZN), CA (SA)

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NDip, NHDip (TWR), BEd, MEd (RAU), DTech (TWR)

## **GENERAL COUNSEL**

Prof PH O'Brien  
BCom, LLB, LLM, LLD (RAU)

## **SENIOR EXECUTIVE DIRECTOR IN THE VICE-CHANCELLOR'S OFFICE**

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BA (Fort Hare), BA Hons (Rhodes), DTE (UNISA), MA (Wits), PhD  
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BSc, BSc Hons, MSc, PhD (US)

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BArch (Pret), MBA (UJ)

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Prof SJ Gravett  
BA, HEd (PU for CHE), BEd, MEd, DEd (RAU)

### **FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT**

Prof DJ Mashao  
BSc Eng (UCT), MSc Eng (UCT), MSc AM (Brown, USA), PhD (Brown, USA)

### **FACULTY OF HEALTH SCIENCES**

Prof S Khan  
BSc, BSc Hons, MSc, PhD (UWC)

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Prof K Naidoo (Acting)  
BA, BA Hons, MA, PhD (University of Manchester, UK)

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B Juris, LLB (Vista), LLM (RAU), LLD (UJ)

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Prof D Meyer  
BSc, BSc Hons, MSc (RAU), PhD (California USA)

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Ms S Dlamini  
Ms K Gugushe  
Prof D Hildebrandt  
Ms X Kakana  
Mr G Khosa  
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Ms K Khumalo  
Ms B Madikizela  
Mr M Mahlasela  
Prof T Marwala  
Ms Z Matlala  
Prof A Parekh  
Dr WP Rowland  
Prof A Strydom  
Ms C Tshilande

## **PRESIDENT OF CONVOCATION**

Prof BM Diale

Gaudeamus Igitur  
Gaudeamus igitur,  
Juvenes dum sumus;  
Post iucundum iuventutem,  
Post molestam senectutem  
Nos habebit humus.  
Vivat academia,  
Vivant professores,  
Vivat membrum quodlibet,  
Vivat membra quaelibet;  
Semper sint in flore!

### English

Let us rejoice, therefore,  
While we are young.  
After a pleasant youth  
After a troubling old age  
The earth will have us.  
Long live the academy!  
Long live the professors!  
Long live each student;  
Long live the whole fraternity;  
For ever may they flourish!

### Sesotho sa Leboa

Ka gona, a re thabeng,  
Re sa le ba bafsa.  
Ka morago ga bofsa bjo bo bose  
Ka morago ga go tšofala mo go nago  
le mathata  
Lefase le tla ba le rena.  
Phela thuto phela!  
Phelang diprofesa phelang!  
Phelang baithuti phelang;  
Phela kagišano ka botlalo phela;  
O ka re ba ka phela gabotse  
goyagoile!

### Afrikaans

Laat ons dan vrolik wees,  
Terwyl ons jonk is;  
Na 'n aangename jeug.  
Na 'n onaangename oudag,  
Sal die aarde ons hou.  
Lank lewe die universiteit,  
Lank lewe die professore,  
Lank lewe elke student,  
Lank lewe al die studente,  
Mag hulle vir ewig hul jeug behou!

### Zulu

Ngakho, masithokoze  
Sisebasha nje.  
Emva kobumnandi bobusha  
Emva kwezinkinga zobudala  
Umhlaba uzosithatha.  
Phambili ngemfundo!  
Phambili boSolwazi!  
Phambili nakuwe mfundi;  
Phambili ngenhlangano yonke;  
Maziqhubeke ngonaphakade!

# QUALIFICATIONS

## 1. National Diploma (N Dip)

**Bhebe**, Denzel Thulani (Biotechnology)  
**Chipu**, Tumelo Chuene (Analytical Chemistry)  
**Damba**, Abongile (Analytical Chemistry)  
**Dladla**, Mbalienhle (Biotechnology)  
**Dlamini**, Nonjabuliso Nokubonga Bongekile (Analytical Chemistry)  
**Gqwashu**, Nomonde (Analytical Chemistry)  
**Hadebe**, Nompumelelo Bonisile (Food Technology)  
**Kabudura**, Tapiwa Blessing (Analytical Chemistry)  
**Kekana**, Boitshoko Surprise (Food Technology)  
**Kesebaketse**, Sibongile (Food Technology)  
**Kganakga**, Sibongile Gwendolin (Biotechnology)  
**Kgatla**, Remelda Noko (Biotechnology)  
**Khorommbi**, Mulisa (Food Technology)  
**Khulo**, Thandi (Biotechnology)  
**Khupe**, Emmanuel (Biotechnology)  
**Kwelementini**, Gugu Mirriam Nhlanhla (Analytical Chemistry)  
**Lebiana**, Mokgohlwe Precious (Analytical Chemistry)  
**Ledwaba**, Lehlogonolo Grace (Food Technology)  
**Letsoisa**, Kekeletso Beauty (Analytical Chemistry) **(with distinction)**  
**Mabasa**, Tiyiselani (Analytical Chemistry)  
**Mabaso**, Asiphile (Biotechnology)  
**Mabula**, Puleng Dorothy (Biotechnology)  
**Mabunda**, Magogo Johanna (Analytical Chemistry) **(with distinction)**  
**Machebe**, Innocentia (Biotechnology)  
**Madonsela**, Wandile (Food Technology)  
**Magabani**, Allen Tumiso (Analytical Chemistry)  
**Magwedla**, Buhle (Analytical Chemistry)  
**Mahlangu**, Reginald Mzwakhe (Food Technology)  
**Mahlare**, Lydia Ntene (Food Technology)

**Makakavhule**, Neo (Analytical Chemistry)  
**Makhubela**, Gugu Armelia (Analytical Chemistry)  
**Maluleke**, Nsuku Ingrid (Analytical Chemistry)  
**Maluleke**, Xonisani Sharon (Analytical Chemistry) **(with distinction)**  
**Manamela**, Boitumelo (Analytical Chemistry) **(with distinction)**  
**Mandou** Mouchipku, Berthe Adriana (Biotechnology)  
**Mangole**, Goitseone Portia (Biotechnology)  
**Maqala**, Mawande (Biotechnology)  
**Mashiane**, Mokgaetsi Godfrey (Biotechnology)  
**Masuku**, Thobile Patience (Analytical Chemistry)  
**Matlala**, Mahlatse Faith (Food Technology) **(with distinction)**  
**Matlou**, Samuel Kwena (Biotechnology)  
**Mayer**, Channah Kirsten (Food Technology) **(with distinction)**  
**Mdludlu**, Asiphe Monica (Analytical Chemistry)  
**Mkansi**, Shoi Shoi (Biotechnology)  
**Mkase**, Tinyiko (Analytical Chemistry)  
**Mntambo**, Sanele (Food Technology)  
**Modibedi**, Tshepang (Food Technology)  
**Mogashoa**, Meladi Lethabo (Food Technology)  
**Mohlala**, Nucky Pheladi (Analytical Chemistry)  
**Mokoena**, Koena Abram (Analytical Chemistry)  
**Mokoena**, Sebolelo (Food Technology)  
**Mokoena**, Tshepiso Ernest (Biotechnology)  
**Moleko**, Nkhali Irene (Analytical Chemistry)  
**Monkwe**, Mankaba Sekgopje (Analytical Chemistry)  
**Mosagale**, Kelebogile Moroba (Biotechnology)  
**Mosikatse**, Palesa Petunia (Analytical Chemistry)  
**Moswane**, Benjamin (Biotechnology) **(with distinction)**  
**Motau**, Tryphinah Nthabiseng (Food Technology)  
**Moyo**, Brenden Nqobani (Biotechnology)  
**Mphuthi**, Lebohang Lorraine (Analytical Chemistry)  
**Mtimkulu**, Nhlakanipho Caluin (Analytical Chemistry)  
**Mtsoeni**, Lindokuhle Perfect (Biotechnology)  
**Mulaudzi**, Takalani (Food Technology)  
**Mulovhedzi**, Lufuno Tshimangadzo (Food Technology)  
**Mutambe**, Nordina (Analytical Chemistry)  
**Ndaba**, Nokwanda (Food Technology)



**Ndhlovu**, Innocent (Food Technology)  
**Nemakanga**, Ndidzulafhi (Analytical Chemistry)  
**Njomane**, Nontuthuzelo Kyomotso Portia (Food Technology)  
**Nkoane**, Sehopotso Johannes (Analytical Chemistry)  
**Nkosi**, Temaswati (Food Technology)  
**Ntuli**, Bafana Johannes (Analytical Chemistry)  
**Nxumalo**, Alinah (Food Technology)  
**Nzima**, Zethile Sphiwe (Analytical Chemistry) **(with distinction)**  
**Phakaditha**, Joyce Mamahlosi (Food Technology)  
**Radingwana**, Lerato Johannah (Analytical Chemistry)  
**Ralefatane**, Kedibone Octavia (Biotechnology)  
**Ramodibe**, Koketso Sbongile (Food Technology)  
**Ramothwala**, Felicia Lerato (Food Technology)  
**Seanego**, Tshwene (Food Technology)  
**Seimela**, Lethabo (Food Technology)  
**Shibalabala**, Bliss Mercy (Biotechnology)  
**Sibanyoni**, Nokukhanya Sphiwe (Food Technology)  
**Solomon**, Mena (Analytical Chemistry) **(with distinction)**  
**Suliman**, Zaakera (Food Technology) **(with distinction)**  
**Tshabalala**, Zamokuhle Princes (Analytical Chemistry)  
**Tshuma**, Nandipa Conscious (Biotechnology)  
**Khakaza**, Nombuso Petunia (Analytical Chemistry)

## 2. Bachelor of Technology (B Tech)

**Dibidi**, Zinzile (Biotechnology)  
**Fhedzisani**, Rudzani (Food Technology)  
**Hlangwani**, Edwin (Biotechnology)  
**Kamega** Djonkam, Sandy (Food Technology) **(with distinction)**  
**Kele**, Lerato Charmaine (Food Technology)  
**Kongolo Kalemba**, Mavie Rose (Biotechnology)  
**Mabatamela**, Mahlattji (Food Technology)  
**Mabunda**, Confidence Thembisile (Biotechnology)  
**Mabunda**, Tshegofatso (Food Technology)  
**Mahlangu**, Gugu Promise (Food Technology)  
**Malebye**, Moipone Winnie (Food Technology) **(with distinction)**  
**Maleka**, Itumeleng Rose (Biotechnology)

**Masehlele**, Dipuo Patricia (Food Technology) **(with distinction)**  
**Mavhetha**, Modeline (Food Technology)  
**Mokoena**, Nthabiseng Elizabeth Mariam (Food Technology) **(with distinction)**  
**Morobane**, Dimpho Michelle (Biotechnology) **(with distinction)**  
**Msimango**, Nomthandazo Gloria (Food Technology) **(with distinction)**  
**Mulohwe**, Fatimah Siffah (Food Technology)  
**Musoliwa**, Rofhiwa (Biotechnology)  
**Naranjee**, Radhika (Food Technology) **(with distinction)**  
**Ncube**, Buyile (Food Technology)  
**Ndwandwe**, Cebile Samkelisiwe (Biotechnology)  
**Nhlapo**, Thabo Gareth (Food Technology) **(with distinction)**  
**Ntambua**, Joel Mukendi (Biotechnology) **(with distinction)**  
**Phiri**, Nhlanhla Blessing (Food Technology)  
**Ramncwana**, Siyasanga (Biotechnology)  
**Shongwe**, Eucy Credentia (Food Technology) **(with distinction)**  
**Sindikolo**, Athenkosi (Biotechnology)  
**Skhosana**, Amahle Antonette (Biotechnology)  
**Teffo**, Thabitha Matjatji (Biotechnology)

### 3. Bachelor of Science Honours (BSc Hons)

**Baloyi**, Nonhlanhla (Chemistry)  
**De Lange**, Samantha Diandre (Chemistry)  
**Dintsi**, Bennett Sipiwe (Chemistry)  
**Gambu**, Bongiwe Fisiwe (Chemistry) **(with distinction)**  
**Liebenberg**, Keziah Elizabeth (Chemistry) **(with distinction)**  
**Mahumane**, Nondumiso Mavis (Chemistry)  
**Malomane**, Nomzamo Sharlote (Chemistry)  
**Mampane**, Trevor Thabang Phillip (Chemistry)  
**Mkhonazi**, Blessing Danisile (Chemistry)  
**Mnisi**, Lunga Frederick (Chemistry)  
**Molaudzi**, Ntsieni Romani (Chemistry) **(with distinction)**  
**Ngema**, Khanyisile (Chemistry)  
**Retief**, Andre (Chemistry)

#### 4. Master of Technology (M Tech)

**Duma, Samukelisiwe Crescentia** (Biotechnology)

**Dissertation:** Investigating the physical-chemical properties and determining the suitability of conventional treatment versus advanced coagulants, nano-iron and nano iron composites in the treatment of coffee wastewater from Nestlé Estcourt

**Supervisor:** Mr K Maclean

**Co-supervisor:** Prof P Ndungu

**Co-supervisor:** Dr C Zvinowanda

**Motsogi, Gladness** (Chemistry)

**Dissertation:** Evaluation of Different oxidizing reagents, as an attempt to replace FeCl<sub>3</sub> in the mirror face cleaning process

**Supervisor:** Prof XY Mbianda

**Co-supervisor:** Prof A Mulaba

**Zulu, Nombulelo Jabulile** (Food Technology)

**Dissertation:** Addition of red palm olein as natural antioxidants to sunflower Oil: Effect on frying quality

**Supervisor:** Dr E Kayitesi

**Co-supervisor:** Dr OM Ogundele

#### 5. Master of Science (MSc)

**Makhado, Bveledzani Pertunia** (Nanoscience)

**Minor dissertation:** Early transition metal carbides- multiwalled carbon nanotubes-biopolymer nanocomposites in the application of hydrostatic Pressure Sensor

**Supervisor:** Dr M Mamo

**Co-supervisor:** Prof DT Ndinteh

**Masalo Ngulla, Horace** (Biotechnology)

**Dissertation:** Production of mycotoxin standards with 99% chromatographic purity

**Supervisor:** Prof PB Njobeh

**Co-supervisor:** Dr M Fernandes-Whaley (NMISA)

**Co-supervisor:** Dr D Naicker (CSIR)

**Thosago, Magadima Mary (Chemistry)**

**Dissertation:** Analysis and speciation of Arsenic in staple food products in South Africa by Ion Chromatography coupled to High Resolution Inductively Coupled Plasma-Mass Spectrometry

**Supervisor:** Prof HH Kinfe

**Co-supervisor:** Dr A Botha (NMISA)

**Co-supervisor:** Dr AA Ambushe

**Co-supervisor:** Prof PP Coetzee

**Co-supervisor:** Prof TW Godeto

**Zikalala, Nkosingiphile Excellent (Chemistry) (with distinction)**

**Dissertation:** Green synthesis, functionalisation and cell viability study of zinc indium sulphide (ZIS) core and ZIS/ZnSe core-shell quantum dots

**Supervisor:** Prof SO Oluwafemi

## 6. Philosophiae Doctor (PhD)

**Amos Tautua, Bamidele Martin (Chemistry)**

**Thesis:** Synthesis and Photodynamic Activity of Porphyrins Conjugated Superparamagnetic Iron Oxide – Gold, Core - Shell Nanoparticles Against Nosocomial Bacterial Species

**Supervisor:** Prof SO Oluwafemi

**Co-supervisor:** Prof SP Songca (University of Zululand)

**Belay, Yonas Habtegiorghies (Chemistry)**

**Thesis:** Lanthanide organic frameworks of azole type linkers as catalysts for epoxidation of olefins

**Supervisor:** Prof AJ Muller

**Co-supervisor:** Prof DBG Williams (University of Technology Sydney)

**Devi, Nishu (Chemistry)**

**Thesis:** Performance of bismuth based materials for electrochemical energy storage devices

**Supervisor:** Prof K Mallick

**Dlamini, Njabuliso Lucia** (Chemistry)

**Thesis:** Synthesis and characterization of carbon nanospheres and carbon nanotubes conjugated bisphosphonates as potential drug for the treatment of secondary bone cancer

**Supervisor:** Prof XY Mbianda

**Khunoana, Sewela** (Chemistry)

**Thesis:** Plant components as low cost alternatives to Luminol for the Detection of Blood at Crime Scenes

**Supervisor:** Prof K Pillay

**Co-supervisor:** Prof DT Ndinteh

**Masekoameng, Ngwanamohuba Wilhemina** (Chemistry)

**Thesis:** Novel Porous Organic Polymer Supported Gold-based Nanocatalysts for Production of Biopolymer Chemicals

**Supervisor:** Prof S Sinha Ray

**Motsoeneng, Rapelang Gloria** (Chemistry)

**Thesis:** Detailed investigation on the correlation between magnetization and sensing properties of the n-type ( $\text{SnO}_2$ ) and p-type ( $\text{NiO}$ ) and mixed oxides heterostructures

**Supervisor:** Prof S Sinha Ray

**Co-supervisor:** Dr DE Motaung

**Simelane, Siphamandla** (Chemistry)

**Thesis:** Synthesis, Reactivity Studies and Biological Evaluation of Novel 1,2-Epoxy Bisphosphonic Acids

**Supervisor:** Prof XY Mbianda

**Co-supervisor:** Prof DT Ndinteh

**Songo, Morongwa Martha** (Chemistry)

**Thesis:** Hybrid-designed porous carbon dispersed gold/metal oxides nanocomposites for catalytic synthesis of biomass-derived chemicals

**Supervisor:** Prof S Sinha Ray

**Amos Tautua, Bamidele Martin (PhD)**

Mr Amos-Tautua was born in Badagry (Nigeria). He completed his secondary school education at St. Patrick's Grammar School, Ibadan (Nigeria) in 1976 and his 'A' levels at the Polytechnic, Ibadan in 1978. He obtained a BSc degree (1982) in Chemistry from University of Ilorin, and an MSc degree majoring in Organic Chemistry from the Obafemi Awolowo University, Ile-Ife (1990). Martin taught organic chemistry in several institutions in Nigeria before he enrolled in a PhD at the University of Johannesburg in 2015. He is currently a Senior Lecturer at Niger Delta University, Wilberforce Island, Nigeria.

The rapidly growing resistance of bacteria to antibiotics is regarded as one of the most important clinical challenges facing the world today. It is therefore imperative to consider an alternative treatment approach such as antibacterial photodynamic therapy (aPDT) for treating nosocomial infections that defy antibiotic treatment. Mr Amos-Tautua's doctoral thesis focused on the synthesis, characterization and photodynamic efficacy of *meso*-substituted porphyrins, gold-coated superparamagnetic iron oxide nanoparticles (SPIONs), and water-soluble thiolated polyethylene glycol gold-coated superparamagnetic iron oxide nanoparticle-porphyrin conjugates, on highly antibiotic resistant hospital-borne bacterial pathogens. The results obtained supports aPDT as a promising treatment approach to effectively photo-inactivate antibiotic resistant bacterial strains. The student has published three international peer reviewed articles and presented his work at two conferences.

**Supervisor:** Prof SO Oluwafemi

**Co-supervisor:** Prof SP Songca (University of Zululand)

**Belay, Yonas Habtegiorghies (PhD)**

Mr Belay was born in Asmara (Eritrea). He obtained a BSc degree majoring in Chemistry and Physics from the University of Asmara. He worked for six years as a teacher of Chemistry in Secondary Schools and for two years as a Chemist at Coca-Cola (Red Sea Bottler's Share Company) in Eritrea. In 2014, he obtained an MSc degree (cum laude) in Chemistry at the University of Johannesburg. He enrolled for a PhD degree at the University of Johannesburg in 2014.

Catalysed reactions supply the majority of the world's chemical feedstock, but with ever-tightening regulations on environmental footprint, there is an ongoing drive towards cleaner manufacturing processes. A current trend in this research area is the use of metal-organic frameworks (MOFs) which act as heterogeneous support for the catalytic active species, and result in less leaching of harmful metals into the environment. Mr Belay's project focused on the synthesis of lanthanide frameworks with azole based linkers. He synthesised and characterised four of these frameworks, and as is customary in this research community, these materials are named after the institution where it was prepared, in this case: UJMOF-1 to 4. These MOFs demonstrated excellent catalyst activity and recyclability in oxidation of alkene test reactions, with general selectivity towards epoxides. Mr Belay presented the work at local and international conferences, and was featured as a front cover in a leading international journal.

**Supervisor:** Prof AJ Muller

**Co-supervisor:** Prof DBG Williams (University of Technology Sydney)

**Devi, Nishu (PhD)**

Ms Devi holds an MTech in Chemical Engineering from DCM University of Science & Technology, India. She joined the University of Johannesburg in 2017 for PhD studies on “Performance of bismuth based materials for electrochemical energy storage devices”.

Bismuth is a post-transition metal element with the atomic number 83 and its chemical properties resembling that of arsenic and antimony. Incidentally its toxicity is much lower than that of its neighbours in the periodic table, such as lead, antimony, polonium and certainly arsenic. Bismuth in its elemental form and also in the form of an ore is available in Limpopo, Mpumalanga and the North West provinces of South Africa. Elemental bismuth occurs naturally, and its sulfide and oxide forms are important commercial ores.

Ms Devi chemically synthesized different bismuth based materials and used them for supercapacitor application. Supercapacitors, also known as electrochemical capacitors, are widely used in consumer electronics, hybrid vehicles and industrial power management systems, and has bridged the gap between battery and conventional capacitors, because of advantages such as high power density, long life cycle, flexible operating temperature, and environmental friendliness. However, its low-energy density, limits its further development. The candidate’s study was mainly focused on improving the energy density of the device by tailoring composite architecture of different bismuth based compounds. She has published 3 peer reviewed journal articles. Her work is directly aligned with the global trend towards the generation of low-carbon based renewable energy by replacing the fossil fuel based energy which causes greenhouse-gas emissions.

**Supervisor:** Prof K Mallick



**Dlamini, Njabuliso Lucia (PhD)**

Ms Dlamini was born in Swaziland, where she matriculated from St Michael High School. She obtained her bachelor's degree from the University of Swaziland, and her master degree in Chemistry from the University of Johannesburg.

In her doctoral study, Ms Dlamini synthesized and conjugated bisphosphonates onto carbon nanotubes and carbon nanospheres as potential drugs for the treatment of secondary bone cancer. Most forms of cancer metastasize to bones from other body organs, and bisphosphonates have been earmarked as a drug of choice for bone metastasis since it can be delocalized throughout the body. However, their shortcoming of being excreted from the body before reaching target sites due to their low molecular weight, reduces their efficacy. By conjugating bisphosphonates onto carbon nanomaterials, the candidate constructed unique bisphosphonate structures with an increased molecular weight that could evade excretion. In vitro tests of these compounds on cancer cells gave promising results. This work was presented at three local and international conferences, and two articles were published in international peer-reviewed journals.

**Supervisor:** Prof XY Mbianda

**Khunoana, Sewela (PhD)**

Sewela Khunoana was born and attended school in Soweto (Johannesburg). She holds an MTech in Chemistry from the University of Johannesburg.

In her doctoral study, Ms Khunoana found that two plant components (Rutin Flavanoid and Tryptamine) present in the bulb extract of *Crinium Macowanni* were chemically similar to luminol and could be used just as effectively for blood detection through chemiluminescence. She also found that the crude bulb extract which contained a multitude of organic compounds could detect blood. Further to these observations, she was able to synthesize gold nanoparticles from the crude bulb extract and observed these to enhance chemiluminescent signals for blood detection in the presence of Luminol, Rutin Flavonoid, Tryptamine and the crude bulb extract. The candidate presented her work at the Frank Warren Organic Chemistry conference held at Rhodes University in 2016 and published one peer-reviewed journal article.

**Supervisor:** Prof K Pillay

**Co-supervisor:** Prof DT Ndinteh

**Masekoameng, Ngwanamohuba Wilhemina (PhD)**

Ms Masekoameng was born and raised in Ga-Molepo (Limpopo) and matriculated in 2006 from Mamodikeleng High School. She completed a BSc degree in Chemistry and Microbiology and an honours degree in Chemistry, and in 2014 obtained an MSc degree in Chemistry from the University of Limpopo. She enrolled for a PhD degree in Chemistry at the University of Johannesburg in 2016.

Ms Masekoameng's doctoral study focused on developing porous organic polymer-based nanocatalysts for application in the catalytic upgrade of biomass-derived model compounds to valuable chemicals. She synthesized and characterized three porous organic polymer-based catalysts, namely, magnetic acid functionalized, gold incorporated and bifunctional gold incorporated acid catalysts, and investigated their catalytic activity in the dehydration of fructose to 5-hydroxymethyl furfural, oxidation of 5-hydroxymethyl furfural to diacids, and for one-pot conversion of fructose to diacids. Ms Masekoameng's work resulted in nanocatalysts with high substrate conversion and product yield and the magnetic properties were advantageous for easy recovery of the catalysts. Her research resulted in two publications in international peer-reviewed journals.

**Supervisor:** Prof S Sinha Ray

**Motsoeneng, Rapelang Gloria (PhD)**

Ms Rapelang Motsoeneng was born in Sterkspruit (Eastern Cape) and has an MSc in Chemical Science from the University of the Western Cape. She enrolled for a PhD at the University of Johannesburg in 2016.

In her doctoral study, Ms Motsoeneng's focused on the fabrication of low power consumption metals oxide-based gas sensors for the detection of volatile organic compounds (VOCs) and toxic gases. This was due to vast market demands for gas sensors to detect and monitor gases in labour safety, environmental protection, medical treatment and safety requirements of industry and daily life. Through her thesis, Ms Motsoeneng was able to design and produce a dual gas sensor that can detect two VOCs by tuning the operating temperature. She further managed to optimise the properties of the sensor by reducing its operating temperature. Ms Motsoeneng presented her work at a local conference and published two peer-reviewed articles in high-quality international journals

**Supervisor:** Prof S Sinha Ray

**Co-supervisor:** Dr E Motaung

**Simelane, Siphamandla (PhD)**

Mr Simelane holds a BSc in Chemistry and Mathematics from the University of Swaziland and an MSc in Chemistry from the University of Johannesburg. He enrolled for a PhD at the University of Johannesburg in 2015.

In his doctoral study, Mr Simelane synthesized 1,2-substituted epoxy bisphosphonic acids and investigated the biological activity of these novel class of bisphosphonates. Bisphosphonates are well-known for the treatment of bone-related diseases, but very little has been reported on the activity of these molecules against other diseases. Mr Simelane's novel molecules were tested and found very potent for their antibacterial, antimalarial and antitrypanosomal activities. He has presented his work in local and international conferences, and one article has been accepted for publication in a peer-reviewed international journal.

**Supervisor:** Prof XY Mbianda

**Co-supervisor:** Prof DT Ndinteh

**Songo, Morongwa Martha (PhD)**

Mrs Morongwa was born in Wintervelt (Pretoria) and was raised by her single mother Patricia Mashigo, together with the help of her late grandmother Selinah Mokoditlwa in Soshanguve. She holds an MTech in Chemical Engineering from the Tshwane University of Technology. She enrolled for a PhD in Chemistry at the University of Johannesburg in 2016.

In her doctoral study, Mrs Songo developed the TiO<sub>2</sub>-Au-carbon nanocomposite catalysts and used them in various chemical reactions such as dehydration, oxidation and esterification to derive the biomass-based chemicals. The TiO<sub>2</sub>-Au-carbon catalyst was found to be highly active and stable in all the catalytic reactions that were tested under optimum conditions. She has published two articles in peer-reviewed high impact international journals.

**Supervisor:** Prof S Sinha Ray

See the back cover for the words of the National Anthem.



A word of thanks to the UJ Alumni Office for sponsoring the flower arrangements at the University of Johannesburg graduation ceremonies.

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## National Anthem of South Africa

Nkosi sikelel' Afrika  
Maluphakanyisw' uphondo lwayo,

Yizwa imithandazo yethu,  
Nkosi sikelela, thina lusapho lwayo.

Morena boloka setjhaba sa heso,  
O fedise dintwa le matshwenyeho,  
O se boloke, O se boloke setjhaba sa heso,  
Setjhaba sa South Afrika - South Afrika.

Uit die blou van onse hemel,  
Uit die diepte van ons see,  
Oor ons ewige gebergtes,  
Waar die kranse antwoord gee,

Sounds the call to come together,  
And united we shall stand,  
Let us live and strive for freedom,  
In South Africa our land.