



Graduation Programme

The Future. Reimagined.





Dear UJ Graduate

At the University of Johannesburg (UJ), graduation not only signifies an academic milestone but also represents the emergence of a new cohort of leaders. Our objective has been to empower you as leaders who are primed to face the challenges of an ever-changing world defined by a plethora of challenges and opportunities. As you navigate these great societal shifts, we hope that your time at UJ will serve as a constant source of reference and inspiration. As we have sought to demonstrate, the Fourth Industrial Revolution (4IR) presents the opportunity for the exploration of new and exciting spheres, and you are uniquely poised to navigate this terrain. Our focus at UJ has been to create graduates who are agile, curious, and able to be active participants against this backdrop.

Your graduation today serves as a celebration of this momentous achievement! I want to take this opportunity to remind you that you now represent the privileged few in our country. You are uniquely poised to address some of the serious challenges we face and a qualification from UJ will stand you in good stead!

At UJ, you have encountered the finest academic minds from diverse backgrounds, spanning across the world as well as innovative technology-rich approaches to teaching and learning. As a result, UJ's global stature and academic robustness are recognised by the most prestigious global higher education ranking systems in the world. UJ has become a competitive player, not only in South Africa but also on the continent. You are an important part of this story.

We welcome you as a new member of our esteemed alumni community, which is making a lasting impact on society. We encourage you to join the UJ Alumni Network and become an active member of the University Convocation, which affords you an opportunity to make a significant contribution to our academic projects and beyond. Our promise in return to you is that we will continue to build UJ as an international university of choice, anchored in Africa, dynamically shaping the future.

Congratulations on this significant achievement. We look forward to witnessing you reimagine the future!

Prof Letlhokwa Mpedi
Vice-Chancellor and Principal
University of Johannesburg

**Welcome to the
Graduation Ceremony of the
University of Johannesburg
3 May 2023 at 09:30**

**Welkom by die
Gradeplegtigheid van die
Universiteit van Johannesburg
3 Mei 2023 om 09:30**

**Le a Amogelwa
Moletlong wa Dikapešo wa
Yunibesithi ya Johannesburg
3 Mopitlo 2023 ka 09:30**

**Niyamukelwa
eMcimbini wokweThweswa kweZiqu
weNyuvesi yaseJohannesburg
3 kuNhlaba 2023 ngele-09:30**

UNIVERSITY OF JOHANNESBURG

CHANCELLOR

Dr P Mlambo-Ngcuka

BA Ed (Lesotho), MPhil (UCT), DTech Ed (Warwick, England)

MEMBERS OF THE MANAGEMENT EXECUTIVE COMMITTEE

VICE-CHANCELLOR AND PRINCIPAL

Prof LG Mpedi

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

DEPUTY VICE-CHANCELLOR: ACADEMIC

Prof S Khan

BSc, BSc Hons, MSc, PhD (UWC)

DEPUTY VICE-CHANCELLOR: RESEARCH AND INTERNATIONALISATION

Prof S Sinha

BEng, MEng, PhD (UP)

REGISTRAR

Prof B van Vuuren
BSc, BSc Hons, MSc, PhD (UP)

CHIEF FINANCIAL OFFICER

Ms N Mamorare
BCom (Rhodes), BCom Hons (UKZN), CA (SA)

CHIEF OPERATING OFFICER

Dr M Ralephata
BSc Eng (Wits), MBA (UOVS), MSc, DBA (Heriot-Watt, UK)

SENIOR EXECUTIVE DIRECTOR

Dr N Vukuza
BA (Fort Hare), BA Hons (Rhodes), DTE (UNISA), MA (Wits),
PhD (SUN)

GENERAL COUNSEL

Mr D Pretorius
BCom, LLB, LLM (NWU)

EXECUTIVE DEANS

COLLEGE OF BUSINESS AND ECONOMICS

Prof L Ntsalaze

BCom, BCom Hons (NMMU), MPhil (UCT), PhD (SUN)

FACULTY OF ART, DESIGN AND ARCHITECTURE

Prof D Smal (Acting)

NDip, NHDip Clothing (TP), MTech Fashion (TUT),
DTech Design (CPUT)

FACULTY OF EDUCATION

Prof N Petersen

BA Ed (UNISA), BEd Hons, MEd (RAU), DEd (UJ)

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

Prof DJ Mashao

BSc Eng, MSc Eng (UCT), MSc AM, PhD (Brown, USA)

FACULTY OF HEALTH SCIENCES

Prof A Temane (Acting)

BNSc (UNW), MCur (RAU), PhD (UJ)

FACULTY OF HUMANITIES

Prof K Naidoo

BA, BA Hons, MA (UDW), DTE (Unisa), PhD (Manchester, UK)

FACULTY OF LAW

Prof W Domingo

B SoSc (UCT), LLB (UWC), LLM (Columbia, USA),
SJD (Wisconsin-Madison, USA)

FACULTY OF SCIENCE

Prof R Meijboom (Acting)

M (Groningen, Netherlands), PhD (UCT)

DEAN

JOHANNESBURG BUSINESS SCHOOL

Dr R Carolissen

BSc, BSc Hons, MSc (UWC), BBA Hons,
MBA (SUN), MCom (NWU), PhD (UWC)

MEMBERS OF COUNCIL

CHAIRPERSON

Ms X Kakana

DEPUTY CHAIRPERSON

Dr Y Ndema

MEMBERS

Prof H Abrahamse

Mr FM Baleni

Ms K Gugushe

Prof D Hildebrandt

Prof S Khan

Ms K Khumalo

Ms B Madikizela

Mr M Mahlasela

Mr M Manana

Ms L Mateza

Dr A Mokoena

Ms N Molope

Prof LG Mpedi

Mr LM Mpunzi

Ms NP Mvubu

Dr WP Rowland

Ms JA Schreiner

Prof A Strydom

Mr T Thobejane

PRESIDENT OF CONVOCATION

Mr LM Mpunzi

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!

FACULTY OF HEALTH SCIENCES

QUALIFICATIONS

1. Higher Certificate

- Badashe**, Vuyo (Sport Coaching and Exercise Science)
Bosch, Berwyn (Sport Coaching and Exercise Science)
Goeieman, Dalernay Logan (Sport Coaching and Exercise Science)
Legodi, Benjamin Ponatshego Letlhogonolo (Emergency Medical Care)
Letsabo, Letshabo Meshack (Emergency Medical Care)
Mahlatsane, James Thabo (Emergency Medical Care)
Makitla, Otto (Emergency Medical Care)
Maribe, Hloriso Victor (Emergency Medical Care)
Marks, Callyn (Sport Administration)
Matela, Kgothatso Mthunzi (Emergency Medical Care)
Mbunge, Aphelele (Emergency Medical Care)
Mdeyi, Acwenga (Sport Administration)
Mohlakoana, Tlaleng Judith (Emergency Medical Care)
Msila, Tshiwo (Sport Coaching and Exercise Science)
Scheepers, Bernicio Rick (Sport Coaching and Exercise Science)
Serolong, Katlego Ernest (Emergency Medical Care)
Toni, Sikuselo (Emergency Medical Care)
Tshantshane, Olwam (Sport Administration)

2. Diploma

Javu, Anga (Emergency Medical Care)

Mudau, Vhutshilo Life (Emergency Medical Care)

Plaisier, Jacques Frans (Emergency Medical Care)

Sengani, Mashudu (Sport Management)

Tshula, Mwamba Gershoun (Sport Management)

3. Bachelor of Arts

Classen, Tammy Caroline (Sport Psychology)

Makola, Lerato (Sport Communication)

Raphels, Ethan Brian (Sport Development)

Sebati, Boitumelo (Sport Psychology)

4. Bachelor of Commerce

Mkhomazi, Amogelang Grace (Sport Management)

5. Bachelors Degree

Van Heerden, Natalie (Diagnostic Ultrasound)

6. **Baccalaureus Curationis**

Baker, Megan Jane

Baloyi, Ntwanano

Barnes, Mckayla

Boroko, Atlegang

Cumbe, Elisa Roberto

Dlamini, Noxolo Reginah

Fry, Callin Lynette

Kamanga, Elizabeth Thumbiko

Kgomoeswana, Precious Raisibe

Khumalo, Patrick Sazi

Maifo, Mokgatjana Evidence

Majola, Onwabile

Makhanya, Mamello

Makhaya, Primly Veliswa

Maphalala, Nolwethu Ernie Ray

Maqolo, Lilihle

Maroane, Gomolemo Charmaine

Mathambo, Regenarate Kgaugelo

Mathebula, Precious

Mavunda, Duncan Sello

Mazibuko, Nondumiso

Mhlatshana, Minentle **(with distinction)**

Moime, Thoriso

Mothapo, Lehlogonolo

Mothobeki, Kgomotso

Msibi, Sphiwe

Mthembu, Sikhululekile Xolisile

Mutheiwana, Asingamaanda

Myeza, Sibusiso Siphamandla
Ndlovu, Conseter Nokukhanya
Ngakane, Molebogeng Selinah
Ngcoyiya, Aviwe
Ngobeni, Nyiko Gift
Ngwenya, Simanga Lawrence
Nhlapho, Dimpho Dimakatso Huputso (**with distinction**)
Norubela, Zizipho Octarvia
Nqubuka, Silindokuhle Felicity
Ramodibe, Lebohang
Sechele, Mpho Precious
Xulu, Zodwa Natasha

7. Bachelor of Health Sciences

Berger, Jesse Olivia (Complementary Medicine)
Brown, Justin Paul (Chiropractic)
Charles, Ronel (Podiatry)
Dlamini, Sivesandzile Mhlalina (Emergency Medical Care)
Ebrahim, Ammaarah (Chiropractic)
Gumani, Mulalo (Podiatry)
Jonker, Ricardo (Chiropractic)
Joubert, Shani Lee (Chiropractic)
Madileng, Lucert (Podiatry)
Maluleke, Mpho (Podiatry)
Matlosa, Mpho Justice (Podiatry)
Ndaba, Phakamani Thembakuye (Podiatry)
Nhlapo, Hope Hluphas (Complementary Medicine)
Nkhoma, Busisiwe (Emergency Medical Care)

Nkomo, Masego (Podiatry)

Ntuli, Kwenzokuhle Samukelisiwe (Complementary Medicine)

Pretorius, Waldo (Emergency Medical Care)

Steyn, Robyn Pamela (Chiropractic)

Tlhavani, Unique (Chiropractic)

Woolley, Ashley Jade (Chiropractic)

8. Bachelor of Arts Honours

Mbele, Dieketseng (Sport Science)

9. Bachelor of Commerce Honours

Goba, Luthando Grace Lwandiso

Mutale, Luyanda

Radebe, Palesa

Ramothwala, Nthabiseng Desiree

Tukwane, Linda

FACULTY OF SCIENCE

QUALIFICATIONS

10. Bachelor of Science (BSc)

Banya, Nkanyiso (Computer Science and Informatics)

Bhengu, Njabulo Sphiwe (Computer Science and Informatics)

Dikobo, Thebe Petrus (Actuarial Science)

Khunjwa, Sinovuyo (Geography and Environmental Management)

Lubisi, Abednigo Mvuselelo (Computer Science and Informatics)

Mahlangu, Innocent (Computer Science and Informatics)

Makhudu, John (Environmental Management and Geology)

Mashila, Musiwalo Mulanga (Computer Science and Informatics)

Modibedi, Neo Aobakwe (Applied Mathematics and Mathematics)

Modise, Harry Bogosi (Computer Science and Informatics)

Ngobeni, Nhlahla Joshua (Applied Mathematics and Mathematics)

Nhlabathi, Vusi Alfred (Mathematics and Psychology)

Reddy, Zeenat (Mathematics and Psychology)

Soloman, Brittney (Computer Science and Informatics)

Zondi, Sibulelo Praisegod (Computer Science and Informatics)

11. Bachelor of Arts Honours (BA Hons)

Ndlela, Nokukhanya (Geography)

12. Bachelor of Science Honours (BSc Hons)

Lebelo, Aatikah Sidiri (Geography)

Mabandla, Dumisani (Chemistry)

Moabelo, Kgaugelo Faith (Chemistry)

Mokhine, Seipati Petunia (Chemistry)

Molefe, Molebheng (Geography)

Mphanga, Lebogang Francina (Chemistry)

Mpoza, Anathi (Geography)

Phekani, Refiloe Ichiko (Energy Studies)

Sedibeng, Monene (Chemistry)

Thambe, Rose Nomathemba (Chemistry)

13. Master of Science (MSc)

Abrahams, Zulfah (Environmental Management)

Minor Dissertation: Mapping poor water quality hotspots, pristine tributaries, and sites of intervention along the Jukskei River, South Africa

Supervisor: Prof CJ Curtis

Chitlango, Fatima Zonke (Geology) (with distinction)

Dissertation: Rare Earth Elements in South African Coals: Concentration and mode of occurrence in density fractionated samples from the Waterberg Coalfield

Supervisor: Prof NJ Wagner

Dhlamini, Cindy (Chemistry)

Dissertation: Synthesis and Characterization of PdII, PtII and RhI complexes of 2-(diphenylphosphino) ethylamine and 2(diisopropylphosphino)ethylamine, and their applications in the hydrogenation of carbon dioxide and furfural

Supervisor: Prof BCE Makhubela

Co-Supervisor: Prof MC Maumela

Fitton, Dillan (Geology) (with distinction)

Dissertation: A detailed stratigraphic, mineralogical and geochemical assessment of the Hotazel Formation at Middelplaats, Kalahari Manganese Field, Northern Cape Province, South Africa

Supervisor: Prof AJB Smith

Co-Supervisor: Prof R Schoenberg (University of Tuebingen, Germany)

Co-Supervisor: Dr C Vorster

Gambu, Bongiwe Fisiwe (Chemistry) (with distinction)

Dissertation: Solvent-free CO₂ coupling with epoxides to afford cyclic carbonates catalyzed by N-triphosphine complexes and limonene-derived ionic liquids

Supervisor: Prof BCE Makhubela

Co-Supervisor: Prof MC Maumela

Kubayi, Vanessa Risuna (Environmental Management)

Minor Dissertation: The effects of climate variability and change on rural livelihoods in the Tiyani Village, Limpopo Province

Supervisor: Prof CJ Kelso

Maleho, Edwin Tumelo (Nanoscience)

Minor Dissertation: Investigation of the photoluminescence studies of ZnO: RE³⁺ (where RE = Dy, Sm and Sm/Dy) nanophosphors via different anionic group (BO₃³⁻, PO₄²⁻ and SO₄²⁻) substitutions

Supervisor: Prof L Reddy

Co-Supervisor: Dr A Balakrishna

Co-Supervisor: Prof PL Masiteng

Mawasha, Selumi Juda (Nanoscience)

Minor Dissertation: The antimicrobial effects of metallic nanoparticles capped with naturally occurring and synthetic heterocyclic compounds on gram negative bacteria

Supervisor: Prof DT Ndinteh

Co-Supervisor: Dr EM Mmutlane

Co-Supervisor: Dr MC Fotsing

Mbodla, Zusipe (Environmental Management)

Minor Dissertation: The effect of the Covid-19 lockdown on emissions from road transportation in Gauteng

Supervisor: Dr KE Langerman

Mohlala, Tseke Tshepo (Nanoscience) (with distinction)

Minor Dissertation: Nickel-based nanomaterials for photoelectrocatalytic degradation of pharmaceuticals in water

Supervisor: Prof N Mabuba

Co-Supervisor: Dr TL Yusuf

Mojela, Nare Leah (Nanoscience)

Minor Dissertation: Synthesis and Application of Ag-Nanoparticles from local plant extracts for detection of 'blood' at crime scenes

Supervisor: Dr PP Komane

Co-Supervisor: Prof K Pillay

Molele, Donald Tlou (Nanoscience)

Minor Dissertation: Synthesis and characterization of nanostructured silicene/polythiophene composite for supercapacitor applications

Supervisor: Prof J Ramontja

Moswetsa, Tebogo Amos (Nanoscience)

Minor Dissertation: Gold and silver nanoparticles encapsulated in coumarin-isoxazole, -isoxazoline, and -triazole hybrids as potential antibacterial agents

Supervisor: Dr EM Mmutlane

Co-Supervisor: Prof DT Ndinteh

Mukatuni, Arinao (Nanoscience) (with distinction)

Minor Dissertation: Probing the anti-bacterial activity of metallic nanoparticles coupled to synthetic and naturally occurring heterocyclic: the case of gram-positive bacteria

Supervisor: Prof DT Ndinteh

Co-Supervisor: Dr EM Mmutlane

Co-Supervisor: Dr MC Fotsing

Mulibana, Murei (Physics) (with distinction)

Dissertation: Structural and Magnetic Properties of $\text{Co}(\text{V}_{1-x}\text{Cr}_x)\text{2O}_6$ Compounds

Supervisor: Dr BS Jacobs

Co-Supervisor: Dr P Mohanty

Co-Supervisor: Prof ARE Prinsloo

Ncongwane, Thabang Bernette (Chemistry)

Dissertation: Automated Silylation of Flavonoids Using 3D-Printed Microfluidics prior to Chromatographic Analysis

Supervisor: Dr E Smit

Co-Supervisor: Prof DT Ndinteh

Ndumndum, Mpumelelo (Nanoscience)

Minor Dissertation: Application of polymer-based nanocomposite adhesive as an alternative to steel mesh for underground coal mines; a double impact solution to mine safety and pollution

Supervisor: Dr M Dimpe

Ndzungu, Gcobisa (Chemistry)

Dissertation: The Use of Green Water Treatment Chemicals to Deal with Climate Change Induced Poor Water Quality Challenges

Supervisor: Prof C Zvinowanda

Co-Supervisor: Prof JC Ngila

Rammela, Tshifhiwa (Geology)

Dissertation: Geology of the Malmani Subgroup in the Vaal area south of Johannesburg: Implications for the future development of the Glen Douglas Dolomite Mine

Supervisor: Prof MO de Kock

Co-Supervisor: Mr FED Senzani

Rasebechele, Phetoho Moeketsi Joshua (Environmental Management)

Minor Dissertation: Evaluating the impact of governance in mitigating climate change in the West Rand District Municipality, Gauteng, South Africa

Supervisor: Prof CJ Kelso

Co-Supervisor: Dr KE Langerman

Shandu, Malibongwe Perfect (Chemistry) (with distinction)

Dissertation: Evaluation of Biaryl Phosphabicyclononane and Phosphatrioxa-Adamantane Ligands in Palladium-Catalysed Alpha-Arylation Reactions

Supervisor: Dr PT Moshapo

Co-Supervisor: Mr LJ Lamola

Shitlhangu, Jamela Precious (Environmental Management)

Minor Dissertation: An assessment of the roles and operations of informal waste reclaimers and buy-back centres in the City of Tshwane Metropolitan Municipality (CTMM) in the Gauteng province

Supervisor: Prof IT Rampedi

Sibanda, Eugene Thabiso (Physics) (with distinction)

Dissertation: Structural, Magnetic and Electronic Properties of Rare-Earth Chromium Oxides

Supervisor: Dr P Mohanty

Co-Supervisor: Prof ARE Prinsloo

Co-Supervisor: Prof CJ Sheppard

Susela, Viwe (Environmental Management)

Minor Dissertation: Assessing the level of knowledge, attitudes and perceptions of Senior school Students on water and waste management in selected schools near Kaalspruit River, Tembisa, South Africa

Supervisor: Dr LS Modley

14. Philosophiae Doctor (PhD)

Agra, Naa Afi (Geology)

Thesis: Petrogenesis and geochemistry of the Paleoproterozoic Birimian metavolcanic, metasedimentary and intrusive rocks in the Bui belt of Ghana

Supervisor: Prof MA Elburg

Co-Supervisor: Dr C Vorster

Chagondah, Godfrey Shoriwa (Geology)

Thesis: Petrogenesis & metallogenesis of granitic rare-metal pegmatites along the southern margin of the Zimbabwe craton: Implications to exploration

Supervisor: Prof A Hofmann

Kumi, Michael (Chemistry)

Thesis: Integrated bone and biochar bed for trace metal, nutrient and pathogen removal from groundwater

Supervisor: Prof PP Govender

Co-Supervisor: Dr WW Anku (CSIR)

Lebepe, Thabang Calvin (Chemistry)

Thesis: Synthesis of graphene oxide-gold nanorods nanocomposite-porphyrin conjugate for cancer therapeutic application

Supervisor: Prof S Oluwafemi

Co-Supervisor: Prof T Kodama (Tohoku University, Japan)

Lefatle, Mpho Charmaine (Chemistry)

Thesis: Preparation of nanocomposites and their application in the analysis of selected emerging contaminants in water systems

Supervisor: Prof PN Nomngongo

Co-Supervisor: Prof VE Pakade (Vaal University of Technology)

Co-Supervisor: Dr LM Madikizela (University of South Africa)

Mabasa, Tommy Fredrick (Chemistry)

Thesis: Design, Synthesis and Antimalarial, Antitumor evaluation of Thiochroman-Isoxazole and Triazole Hybrids

Supervisor: Prof HH Kinfe

Co-Supervisor: Prof BCE Makhubela

Co-Supervisor: Dr MBC Simelane

Mangs, Ayuba Danmangu (Geology)

Thesis: The petrography, mineralogy and geochemistry of coal within the Benue Trough, Nigeria

Supervisor: Prof NJ Wagner

Co-Supervisor: Prof UA Lar (University of Jos, Nigeria)

Masibi, Elizabeth Gaobodiwe (Chemistry)

Thesis: Modification of thin film composite membranes using a functionalized composite of Graphene oxide (GO) and metal-organic frameworks (MOFs) and its assessment in membrane

Application

Supervisor: Prof RM Moutloadi

Co-Supervisor: Dr TA Maketha

Co-Supervisor: Prof PN Nomngongo

Nkwachukwu, Oluchi Vivian (Chemistry)

Thesis: Perovskites based photoelectrocatalytic anodes for the removal of priority organic pollutants from water

Supervisor: Prof OA Arotiba

Nthwane, Yvonne Boitumelo (Chemistry)

Thesis: Synthesis, characterization of agricultural waste material for removal of heavy metals in wastewater and reuse in blood fingerprint development

Supervisor: Prof K Pillay

Co-Supervisor: Dr M Thwala (CSIR)

Paul, Bynish (Physics)

Thesis: Physical conditions in the Fe II emission zone of Narrow-Line Seyfert 1 galaxies and their role in the general model of Active Galactic Nuclei

Supervisor: Prof H Winkler

Co-Supervisor: Dr SB Potter (South African Astronomical Observatory)

Takata, Nwabisa (Chemistry)

Thesis: Accurate quantification of trace and ultra-trace concentration levels of total selenium and selenium species in South African environmental samples and food products by ion chromatography and inductively coupled plasma mass spectrometry (IC-ICP-MS)

Supervisor: Prof PN Nomngongo

Co-Supervisor: Dr A Botha (NMISA)

Targuma, Sarem (Chemistry)

Thesis: A graphene oxide/iron oxide nanocomposite modified with an ionic liquid for magnetic solid-phase extraction of selected pharmaceuticals, mycotoxins, and emerging mycotoxins from beer and fruit juices

Supervisor: Prof DT Ndinteh

Co-Supervisor: Prof PG Ndungu (University of Pretoria)

Co-Supervisor: Prof PB Njobeh

Vasudevan Pillai Rajamma Amma, Remya (Chemistry)

Thesis: Fabrication of Supertough and Fluorescent Epoxy based Nanostructured Materials

Supervisor: Prof S Oluwafemi

Co-Supervisor: Prof S Thomas (Mahatma Gandhi University, India)

Waziri, Ibrahim (Chemistry)

Thesis: Water-soluble lanthanide cupferron type complexes as palliative for bone cancer treatment

Supervisor: Prof AJ Muller

Co-Supervisor: Prof DBG Williams (University of Technology, Australia)

Co-Supervisor: Dr M Sonopo (NECSA)

Agra, Naa Afi (PhD)

Naa Afi Agra was born in Accra, Ghana-West Africa and obtained her BSc and MPhil degrees in Geology from the University of Ghana. She enrolled for a PhD in Geology at the University of Johannesburg in February 2017 and is currently working as an assistant lecturer at the Department of Earth Science, University of Ghana.

Ms. Agra's research focused on metavolcanic and metasedimentary rocks from the Bui belt and associated sedimentary basins in northern Ghana, contributing to the knowledge of crustal growth processes in the Birimian of the West African Craton. Petrographic and geochemical data indicate that the metavolcanic rocks were derived from magma of variably depleted mantle sources and were emplaced around 2.2 Ga in a geodynamic environment similar to a present-day oceanic plateau or mid-ocean ridge. The associated metasedimentary rocks, sourced from older mafic and granitoid rocks, were deposited in an island arc during subduction-accretion no later than ca. 2.13 Ga. The overlying Tarkwaian conglomerates and sandstones, formed by recycling of older rocks, were deposited no later than ca. 2.12 Ga in rift basins developed within the metavolcanic belts. Parts of this study have been presented in local and one international conference. One peer reviewed paper was published in Precambrian Research recently.

Supervisor: Prof MA Elburg

Co-supervisor: Dr C Vorster

Chagondah, Godfrey Shoriwa (PhD)

Godfrey S. Chagondah was born in Masvingo Province in Zimbabwe and holds an MSc degree in Exploration Geology from Rhodes University (South Africa). Prior to his PhD, Godfrey worked for a total of nineteen years as a senior geologist in various mineral exploration and mining projects in Zambia and Zimbabwe. He enrolled for a PhD at the University of Johannesburg in 2016 and is currently working as a Chief Geologist and Technical Expert on an exploration project for lithium in Zimbabwe.

In his doctoral study, Godfrey Chagondah conducted field and analytical work on rare-metal pegmatites and spatially associated granites in the Bikita and Mweza areas of Zimbabwe. Geochemical studies and geochronological analyses allowed Godfrey to establish parameters of the timing and processes of magma generation. He was able to demonstrate that apart from S-type granites, moderately fractionated I-type granites can be regarded potential sources for rare-element pegmatites, including the world-class Bikita Pegmatite of Zimbabwe. His study adds to the existing body of knowledge on rare-metal pegmatite genesis models globally, with implications for mineral exploration. The candidate has presented his work at local symposia and one international geological conference. One article resulting from this doctoral research has so far been accepted for publication in an accredited scientific journal.

Supervisor: Prof A Hofmann

Kumi, Michael (PhD)

Mr. Kumi was born in Accra (Ghana) and holds a BSc in Chemistry degree from the University of Cape Coast Ghana and an MSc in Ecotechnology from Mid-Sweden University in Östersund, Sweden. He enrolled for a PhD at the University of Johannesburg in 2019. Kumi's journey began as a Senior Research Scientist at the CSIR-Water Research Institute in Ghana, where he dedicated twelve years of his life to conducting research that improved our understanding of water quality and purification.

In his doctoral study, Kumi developed an integrated bone and biochar bed treatment system for trace metal, nutrient, and pathogen removal from groundwater, a novel approach to water treatment with significant implications for rural communities worldwide. His work has demonstrated the effectiveness of this approach in removing heavy metals, nitrogen, phosphorus, and pathogenic bacteria from water and has the potential to provide a low-cost and effective solution to communities facing water quality issues. The candidate has presented his work at two local and one international conference. He has published two peer-reviewed articles in prestigious academic journals, with an additional two at the final stages of review.

Supervisor: Prof PP Govender

Co-supervisor: Dr WW Anku (CSIR-Water Research Institute, Ghana)

Lebepe, Thabang Calvin (PhD)

Thabang was born in Mahikeng (North-West, South Africa) and holds BSc in Chemistry and Biology and MSc in Chemistry from North-West University (South Africa). He joined the University of Johannesburg (UJ) as an NRF intern in 2017 before enrolling for a PhD in 2018 while volunteering as a laboratory captain for three years at the Centre for Nanomaterials Sciences Research (UJ). Mr Lebepe received training in cell culture and cytotoxicity testing of nanomaterials at Tohoku University (Sendai, Japan) and is currently an assistant lecturer in the department of Chemical Sciences at UJ.

In his doctoral project, the PhD candidate synthesised gold nanorods (AuNRs) and conjugated them to photosensitisers to improve noble metal nanoparticle-mediated cancer treatment. Phototherapy, a developing therapy for cancer is less invasive and not cancer-specific. The most commonly used nanomaterials are the AuNRs. However, the high quantity of hexadecyltrimethylammonium bromide (CTAB) used in their preparation hampers its advancement in biological applications. In addition, the reducing agent frequently used, ascorbic acid, does not completely reduce the Au⁺¹ to Au⁰, leading to a low yield of the nanorod. Mr Lebepe reported the novel synthesis of AuNRs and coated them with graphene oxide to improve their biocompatibility and photothermal properties. In addition, he conjugated nanocomposites with porphyrins to achieve a dual phototheranostic agent with good biocompatibility, colloidal stability, singlet oxygen generation, and shelf storage properties. This work was published in 6 research journals with one review paper and presented at four conferences.

Supervisor: Prof SO Oluwafemi

Co-supervisor: Prof T Kodama (Tohoku University, Japan)

Lefatle, Mpho Charmaine (PhD)

Mpho Charmaine Lefatle was born and bred in Soweto. In 2010, she obtained her BSc in Chemistry and Geology at Rhodes University. She continued at the same institution and obtained her BSc(Hons) in Chemistry with distinction in 2011. In 2014, Ms Lefatle completed her MSc in clinical chemistry with distinction at the University of Cape Town. Her research investigated the effects of administering various antioxidant-rich substances on the physicochemical and peroxidative risk factors in urine and blood for calcium oxalate kidney stone formation. Ms Lefatle enrolled toward a PhD degree in chemistry in 2020 at the University of Johannesburg.

Pollutants such as macro-pollutants, polycyclic aromatic hydrocarbons (PAHs), inorganic chemicals, and microorganisms have been intensively investigated in South Africa. However, antibiotics such as tetracyclines have received little attention, despite frequently being detected in the water. The occurrence of these tetracyclines in water systems poses a threat to human and aquatic species when there is prolonged exposure. Ms Lefatle's doctoral research focused on designing chitosan-based nanocomposites and their application for monitoring tetracyclines from water systems. The developed analytical method enabled the quantification of trace amounts of tetracyclines in aquatic environments. The nanocomposites were also applied in the adsorptive removal of tetracyclines in wastewater. The findings of this research resulted in one peer-reviewed journal article, one manuscript under review, and two manuscripts ready for submission. Ms Lefatle also presented her work at an international conference.

Supervisor: Prof PN Nomngongo

Co-supervisor: Prof VE Pakade (Vaal University of Technology)

Co-supervisor: Prof LM Madikizela (University of South Africa)

Mabasa, Tommy Fredrick (PhD)

Tommy Mabasa was born in the Xitlhelani Village, Vhembe District. He enrolled at the University of Johannesburg for his undergraduate degree majoring in Botany and Chemistry in 2012 and completed both B.Sc. (Hons) and MSc in Chemistry (distinction) from the University of Johannesburg. He then enrolled for a PhD in Chemistry at the University of Johannesburg in 2019. Mr. Mabasa served as President of the Postgraduate Association at UJ from 2019-2022.

Mr Mabasa designed, synthesized, and characterized more than forty novel thiochroman derivatives, specifically; thiochroman-triazole, and -isoxazole hybrid compounds that were evaluated as antimalarial and anticancer agents. He compared the structure activity relationship (SAR) of the thiochroman-isoxazole and -triazole hybrids and related their inherent sulfur atom oxidation states to the antimalarial and anticancer activities. The compounds exhibited good activities against cancerous cells and can serve as potential anticancer prototypes. In another aspect of the project Mr Mabasa developed new mild dehydrating agents for the synthesis of nitrile functional groups using oximes. In this way, 2-cyano galactal was prepared from 4-methylthiophenol to yield interrupted-Ferrier products using Lewis acids. This method, allows end-product functionalization of motifs forming an integral part of structural units found in several drugs. The candidate presented his work at two local and one international conference and published one peer reviewed journal article, with two manuscripts under review for publication.

Supervisor: Prof HH Kinfe

Co-supervisor: Prof BCE Makhubela

Co-supervisor: Prof MBC Simelane

Mangs, Ayuba Danmangu (PhD)

Mr Mangs enrolled for a PhD at the University of Johannesburg in 2017 and is currently on the academic staff at the University of Jos, Nigeria.

In his doctoral study, Mr Mangs studied a series of coal samples from the Benue Trough, Nigeria. Nigeria has significant coal deposits that are not well documented. Petrographic analyses, supplemented by mineralogy and geochemistry, were undertaken. Coal facies studies were used to decode paleoenvironmental settings under which organic matter accumulated. Samples from the upper and lower Benue Trough clustered in the upper deltaic to drier Piedmont plain setting, while coal samples from the middle section indicate a lower deltaic marsh to wet forest swamp depositional setting. Geological controls have imprinted on the coal qualities across the region. The coals are generally of good quality with the potential for power generation or other advanced applications. The candidate has presented his work at several local and international conferences and has published one peer-reviewed journal article.

Supervisor: Prof NJ Wagner

Co-supervisor: Prof UA Lar (University of Jos, Nigeria)

Masibi, Elizabeth Gaobodiwe (Ph.D)

Ms Elizabeth Gaobodiwe Masibi was born at New Bethel village in Mahikeng, North West Province. She matriculated from Tswelelopele High school in 1999 then later on proceeded to North-West University where she studied BSc in Mathematics and Chemistry in 2005. She left North-West University after obtaining BSc Hons in Chemistry in 2012. She started working at Department of Education teaching Maths and Science subjects from February 2012 to February 2017 where she rendered termination letter to further her studies. In February 2017 she received funding from then Department of Science and Technology (DST) to further her studies in MSc in nanoscience (Chemistry) at University of Western Cape (theory) then continued to University of Johannesburg to complete research part in January 2019. June 2019, she registered PhD in Chemistry with the aid from Mintek funding until she submitted her work in November 2022.

Ms Masibi studied the purification of textile wastewater from industries in Gauteng and underground water from Lotlhakane (Mahikeng) using polymeric membranes. About 34% of South Africans reside in rural areas and rely on underground water for potable purposes. This resource is negatively affected by climate change, agricultural run-offs, open pit latrine seepage, etc. Ms Masibi explored membrane technology as a means of water purification with various advantages. She prepared thin film composite (TFC) membranes that incorporate [(zeolitic imidazole framework-8@functionalized graphene oxide (ZIF-8@fGO), and functionalized zeolitic imidazole framework-8 @ sulfone graphene oxide (fZIF-8@SGO)] to enhance the performance of the membrane. She showed that the resultant membranes had enhanced hydrophilicity, high rejection of pollutants, improved antifouling properties, and prolonged the lifespan of the membrane. The candidate presented

her work at a local workshop and has published a peer-reviewed journal article with two under consideration.

Supervisor: Prof RM Moutloali

Co-supervisor: Dr TA Makhetha

Co-supervisor: Prof PN Nomngongo

Nkwachukwu, Oluchi Vivian (PhD)

Mrs. Nkwachukwu was born in Lagos, Nigeria, where she obtained her BSc (Hons) degree in Industrial Chemistry. She holds an MSc in Polymer Chemistry from the University of Johannesburg and enrolled here for a PhD in 2019.

As the degrees and complexity of organic pollutants in water and the environment are on the rise, more burden is placed on the existing wastewater treatment system. This necessitates research into other methods of water treatment. Mrs. Nkwachukwu prepared bismuth ferrite nanocomposites and heterojunction photoanodes for the visible light photoelectrocatalytic removal of pollutants such as pharmaceuticals from water. Her method of wastewater treatment is low cost, environmentally friendly, sustainable and offers an alternative and/or complementary approach to South Africa's wastewater treatment mix. Her work has shown that perovskites can be applied in water treatment and was presented at conferences and in three published articles.

Supervisor: Prof OA Arotiba

Nthwane, Yvonne Boitumelo (PhD)

Ms Yvonne Boitumelo Nthwane was born and raised in a small rural area called Tshidilamolomo near Mahikeng in the North-West Province. She then attended a secondary school in Mahikeng and completed her undergraduate studies at North-West University, Mahikeng. She holds an MSc in Applied Chemistry from the University of Johannesburg. She enrolled for a PhD in Chemistry at the University of Johannesburg in 2020.

Ms Nthwane developed three hybrid nanocomposite materials from agricultural waste and applied these for the removal of heavy metal ions from aqueous solutions. She further applied the heavy metal loaded spent adsorbents for blood fingerprint detection in an attempt to eliminate secondary environmental pollution caused by the spent adsorbents. The adsorbents developed included a mesoporous carbon coated with TiO_2 for Pb(II) removal, nitrogen-carbon nanosheets coated on zinc oxide for Cd(II) removal and carbon hollow nanosheets coated on gamma-aluminium oxide for the removal of Ni(II) . All three nanocomposites demonstrated excellent performance for removal of the respective heavy metal ions and the carbon components were prepared from macadamia nut shells, banana peels and orange peels respectively. The heavy metal loaded spent adsorbents further showed remarkable potential to detect blood fingerprints. The candidate has presented her work at two local conferences, and has published two peer reviewed journal articles.

Supervisor: Prof K Pillay

Co-supervisor: Dr M Thwala (Academy of Science of South Africa)

Paul, Bynish (PhD)

Bynish Paul was born and grew up in Kerala State in India. He obtained an MSc in Physics from Mahatma Gandhi University in Kottayam, India. He did his doctoral studies at the University of Johannesburg over the last few years while based at the South African Astronomical Observatory in Cape Town. He has accepted a lecturing position in Singapore and will be moving there soon.

For his PhD, Bynish Paul examined the emission line spectra of a sample of Narrow Line Seyfert 1 galaxies with unusually strong iron bands. These are a sub-class of what is broadly referred to as “Active Galactic Nuclei”, distant galaxies with large black holes in their core. Spectra of most targets were recorded on multiple occasions, enabling the detailed quantification of spectral changes and also combining spectra to some of the lowest noise levels achieved. He confirmed that the studied sub-class is less variable than other sub-classes, with strongest lines are best matched by Lorentzian emission line profiles. This supports a model where most hydrogen and iron line emission is produced comparatively far from the black hole. The candidate has published his research in a peer-reviewed article in a leading international journal and has presented talks or posters and published associated proceedings papers at two local and two international conferences.

Supervisor: Prof H Winkler

Co-supervisor: Prof SB Potter (South African Astronomical Observatory)

Takata, Nwabisa (PhD)

Ms Nwabisa Takata was born and bred at the Lower Kroza location, Qumbu, in the Eastern Cape province. She matriculated from Little Flower Senior Secondary School in 2009 and holds an MSc in Chemistry from the University of Fort Hare. Before her PhD, Nwabisa worked as a Research Scientist at the National Metrology Institute of South Africa (NMISA). In 2018, she enrolled for a PhD at the University of Johannesburg in collaboration with NMISA. Ms Takata won the 2018 best student award for achieving the highest marks in training courses from the National Laboratory Association-South Africa (NLA-SA).

Selenium (Se) is a micronutrient needed by livestock and humans; however, it can result in nutritional deficiency and toxicity depending on concentration levels. Ms Takata developed analytical methods to quantify Se and Se-species in South African environmental samples and food products. These methods were utilized to profile Se in maize plantations from the three provinces (Eastern Cape, KwaZulu Natal, and Free State) in South Africa. The findings showed that maize flour from EC and FS was below the recommended daily intake from the World Health Organisation. KZN maize flour had adequate Se with few samples above the daily limit indicating Se-toxicosis can occur if necessary interventions are not taken. This study provided NMISA with methods for the characterization and production of matrix-certified reference materials (CRMs) for grains and animal feed. Part of this work has been presented at conferences and published in peer-reviewed journals.

Supervisor: Prof PN Nomngongo

Co-supervisor: Dr A Botha (NMISA)

Targuma, Sarem (PhD)

Sarem Targuma was born in Lafia, Nigeria. She obtained her MSc in Environmental chemistry at the Federal University of Agriculture, Makurdi, Nigeria. She enrolled for a PhD degree at the University of Johannesburg in 2019, after being awarded a prestigious National Research Foundation/TWAS doctoral scholarship (NRF-TWAS).

Ms Targuma's doctoral research focused on synthesizing and characterizing a graphene oxide/silica oxide/iron oxide nanocomposite, modified with an ionic liquid for magnetic solid-phase extraction of selected pharmaceuticals, mycotoxins, and emerging mycotoxins from beer and fruit juices. The study developed a simple, rapid, effective, and efficient technique that advances environmentally friendly analytical methods for extracting pollutants from complex matrices without utilizing large volumes of hazardous and costly organic solvents. Her research work was presented at one local conference and to date, one article was published in an international peer-reviewed journal.

Supervisor: Prof PG Ndungu

Co-supervisor: Prof PB Njobeh

Co-supervisor: Prof D Ndinteh

Vasudevan Pillai Rajamma Amma, Remya (PhD)

Mrs. Remya Vasudevan Pillai Rajamma Amma was born in Thiruvananthapuram (India) and holds an MSc in Chemistry from Mahatma Gandhi University in India. She enrolled for a PhD at the University of Johannesburg in 2017 and currently works as a content writer at SN Open University, India.

In her doctoral study, Mrs R Vasudevan Pillai Rajamma Amma studied the fabrication and properties of super tough and highly fluorescent material from epoxy/eSBS₅₅-CIS-ZnS QDs blend nanocomposite system. She successfully synthesized epoxidized poly(styrene-blockbutadiene-block-styrene) with a maximum epoxidation degree of 55 mol percent using the metachloroperbenzoic acid method for the first time. Furthermore, the material had greenish-yellow fluorescents when it was created, which is a big plus for illuminating applications. The as-fabricated supertough and fluorescent materials will be viable for a wide range of optical and toughness applications, particularly in tile coating, glass coating, automobiles, and other applications.

The candidate has presented her work at several international conferences and workshops and received the best paper and poster awards. She has published three first-authored and five co-authored peer-reviewed journal articles and has edited one book; two are in progress.

Supervisor: Prof SO Oluwafemi

Co-supervisor: Prof S Thomas (Mahatma Gandhi University, India)

Waziri, Ibrahim (PhD)

Mr. Waziri was born in Maiduguri (Nigeria) and holds an M.Sc in Inorganic Chemistry and Postgraduate Diploma in Education (PGDE) from University of Maiduguri, in Nigeria. He enrolled for a PhD at the University of Johannesburg in 2018.

In 2020, cancer deaths were reported to be at nearly 10 million cases globally. That equates to 1 in every 6 deaths worldwide. Furthermore, most cancer cells metastasize to the bone and cause a significant drop in quality of life. Mr. Waziri's doctoral research focused on the use of lanthanide metal complexes in the palliative treatment of bone cancer. These metal ions are protected with bio-friendly organic molecules that guide them to the cancer sites, where they exchange with calcium from the bone. The metals are made radioactive and deliver pinpoint radiation to the cancer sites. Research by the candidate has shown that, even without radioactivity, lanthanide metal complexes significantly reduced bone cancer cell line metastasis (osteosarcoma) while having very little effect on healthy cells (osteoblast). In essence these metals have potential for use in radiation therapy of bone cancer. The work was presented at an international conference and published in ISI recognised journals.

Supervisor: Prof AJ Muller

Co-supervisor: Prof DBG Williams ((University of Technology, Australia)

Co-supervisor: Dr M Sonopo (NECSA)

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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.