
UNIVERSITY
OF
JOHANNESBURG
The Future
Reimagined
GRADUATION
PROGRAMME
UNIVERSITY OF JOHANNESBURG
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Dear UJ Graduate

Today represents the start of a new chapter. It has without a doubt been a long and arduous but incredible journey for you. Your graduation is a significant milestone, not only academically, but it represents your emergence as a leader with societal impact. At the University of Johannesburg (UJ), we are acutely aware of the hard work, dedication and perseverance you have displayed in order to reach this point. In a rapidly changing world, undergoing seismic shifts, our goals have been not only to support you in this journey but also to empower you as leaders. We strive for excellence, and we are committed to leading through ideas, actions, and programmes in ways that deliberately seek to positively impact the world around us. We hope that your time at UJ will serve as a source of inspiration and contribute to your mark in the world. Our focus at UJ has been to create graduates who are agile, curious, and able to be active participants committed to societal impact.

Your graduation signifies all of this and more. This is a momentous celebration and an incredible achievement, indeed! As you emerge from our institution, we hope you tap into your power to make a difference.

In your time with us, you have encountered the finest academic minds from diverse backgrounds, you have been exposed to technologically rich approaches to teaching and learning while gaining an enviable understanding of the world around us. UJ's global stature and academic robustness are recognised by the most prestigious global higher education ranking systems in the world and we have emerged as a formidable player globally. You are an important and intrinsic part of this story.

We also welcome you as new members of our esteemed alumni community. We encourage you to join the UJ Alumni Network and become an active member of the University Convocation, both of which afford you an opportunity to transform into collaborators, mentors, and advocates who can significantly contribute to our vision. Our promise in return to you is that we will continue to reimagine the future with societal impact. Congratulations on this achievement – you have done us proud!

Prof Letlhokwa Mpedi
Vice-Chancellor and Principal
University of Johannesburg

Welcome to the
Graduation Ceremony of the
University of Johannesburg
8 May 2024 at 16:30

Welkom by die
Gradeplegtigheid van die
Universiteit van Johannesburg
8 Mei 2024 om 16:30

Le a Amogelwa
Moletlong wa Dikapešo wa
Yunibesithi ya Johannesburg
8 Mopitlo 2024 ka 16:30

Niyamukelwa
eMcimbini wokweThweswa kweZiqu
weNyuvesi yaseJohannesburg
8 kuNhlaba 2024 ngele 16:30

UNIVERSITY OF JOHANNESBURG

CHANCELLOR

Dr P Mlambo-Ngcuka
BA Ed (NUL, Lesotho), MPhil (UCT), DTech Ed (Warwick, UK)

MEMBERS OF THE MANAGEMENT EXECUTIVE COMMITTEE

VICE-CHANCELLOR AND PRINCIPAL

Prof LG Mpedi
B Juris, LLB (Vista), LLM (RAU), LLD (UJ)
Doctor *Honoris Causa* (CU, Georgia)

DEPUTY VICE-CHANCELLOR: ACADEMIC

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

DEPUTY VICE-CHANCELLOR: RESEARCH AND INTERNATIONALISATION

Prof SJ Gravett (Acting)

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

REGISTRAR

Prof B van Vuuren

BSc, BSc Hons, MSc, PhD (UP)

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CHIEF OPERATING OFFICER

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

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BEd, MSc, (UKZN) PhD (Brown, USA)

GENERAL COUNSEL

Mr D Pretorius

BCom, LLB, LLM (NWU)

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COLLEGE OF BUSINESS AND ECONOMICS

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

FACULTY OF ART, DESIGN AND ARCHITECTURE

Prof F Freschi

BAFA (Wits), BA Hons (UCT), PhD (Wits)

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), BA (Cur) (UNISA), 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, New York),
SJD (Wisconsin, Madison)

FACULTY OF SCIENCE

Prof A Moteetee

BSc (NUL, Lesotho), MPhil (University of London, UK), PhD (RAU)

DEAN

JOHANNESBURG BUSINESS SCHOOL

Dr R Carolissen

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

MEMBERS OF COUNCIL

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Ms X Kakana

DEPUTY CHAIRPERSON
Dr Y Ndema

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Ms K Gugushe
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Ms L Khumalo
Mr B Malotane
Mr N Magoro
Ms L Mateza
Prof TA Meyer
Dr A Mokoena
Mr A Mokua
Ms N Molope
Prof A Moteetee
Prof LG Mpedi
Mr LM Mpunzi
Ms NP Mvubu
Prof A Strydom

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 ENGINEERING AND THE BUILT ENVIRONMENT

QUALIFICATIONS

1. Bachelor of Engineering Technology

Baloyi, Raphuti Phillip (Physical Metallurgy)
Biyela, Thulani Johannes (Extraction Metallurgy)
Buthelezi, Ziningi Anele (Extraction Metallurgy)
Chiburre, Devin (Extraction Metallurgy)
Chuene, Thabo (Extraction Metallurgy)
De Witt, Santineo Neil (Physical Metallurgy)
Dlamini, Nontsikelelo Temalangeni (Extraction Metallurgy)
Dzialwa, Ndifho Trevor (Physical Metallurgy)
Dzichagurwa, Clyton (Physical Metallurgy)
Fedai, Yorkabel Ghebrekirstos (Physical Metallurgy)
Godlo, Yanelisa Nelly (Physical Metallurgy)
Gumede, Sakhile Rony (Extraction Metallurgy)
Khoza, Dumisani (Physical Metallurgy)
Koroni, Tapiwanashe Simon (Physical Metallurgy)
Ledwaba, Kgaugelo Precious (Physical Metallurgy)
Legadima, Masego Paballo (Extraction Metallurgy)
Letsapo, Kutlo (Physical Metallurgy)
Mabulwana, Akani (Extraction Metallurgy)
Maetso, Oratile Isaac (Physical Metallurgy)
Mahlangu, Sihle Samukele (Physical Metallurgy)
Maimane, Violet Oratile (Physical Metallurgy)

Malatji, Madulo Residence (Extraction Metallurgy) **(with distinction)**
Malo, Vusile Phillip (Chemical Engineering)
Maluleke, Dumisane (Physical Metallurgy)
Maluleke, Ntsako (Physical Metallurgy)
Maredi, Hazel Shoky Phologo (Physical Metallurgy)
Mariri, Gilbert Sekgothe (Physical Metallurgy)
Maseko, Skhumbuzo (Physical Metallurgy)
Matemane, Kamogelo (Extraction Metallurgy)
Matjeni, Lisbeth Karabo (Physical Metallurgy)
Matlou, Maselaelo Michelle (Extraction Metallurgy)
Matsimela, Tumi Mankopodi (Physical Metallurgy)
Mbazima, Thembinkosi Demotrious (Mechanical Engineering)
Mbele, Sibahle Philasande (Physical Metallurgy)
Mhaule, Romeo Ngovulani (Mechanical Engineering)
Mjuqu, Sivuyile (Physical Metallurgy)
Mkhonto, Skhulile Advice (Mechanical Engineering)
Mkhwanazi, Nkululeko (Physical Metallurgy)
Mlangeni, Nontobeko Virginia (Physical Metallurgy)
Mlangeni, Thembalethu (Mechanical Engineering)
Mlipha, Lindokuhle Ntokozo (Extraction Metallurgy)
Mlochwa, Tshepo Collen (Physical Metallurgy)
Mmatli, Mpho Edward (Physical Metallurgy)
Mnisi, Precious (Mechanical Engineering)
Modikwe, Mogomotsi Raymond (Extraction Metallurgy)
Mofokeng, Pule (Mechanical Engineering)
Mofurutshe, Omphemetse Selina (Extraction Metallurgy)
Mogaswane, Thato David (Mechanical Engineering)
Mohale, Lerato (Mechanical Engineering)

Mohutsiwa, Rethabile (Extraction Metallurgy)
Mojapelo, Santekele Louis (Extraction Metallurgy)
Mokgatlhe, Reneilwe (Physical Metallurgy)
Mokgethe, Mohau (Physical Metallurgy)
Mokoena, Katleho Jaco (Extraction Metallurgy)
Mokoena, Nhlanhla (Mechanical Engineering)
Mokonyane, Thabang John (Mechanical Engineering)
Monageng, Katlego (Physical Metallurgy)
Morudu, Reitumetse (Physical Metallurgy) **(with distinction)**
Moselane, Karabo (Mechanical Engineering)
Moshia, Mashala Marcus (Extraction Metallurgy)
Motabeni, Nthabiseng (Physical Metallurgy)
Motha, Sikelela Japhtah (Mechanical Engineering)
Mothea, Siyanda (Extraction Metallurgy)
Mpembe, Sabelo Phillip (Physical Metallurgy)
Mphahlele, Lehlogonolo Arthur (Extraction Metallurgy)
Mpontshane, Thembelihle Mc'centia (Extraction Metallurgy)
Mputle, Regomoditswe Patience (Extraction Metallurgy) **(with distinction)**
Mpyana, Tidimalo (Extraction Metallurgy)
Mudau, Ndinae Marshal (Extraction Metallurgy)
Mudzanani, Sonboy (Mechanical Engineering)
Mukhonazi, Lulekani Custer (Mechanical Engineering)
Mukondeleli, Khuthadzo (Mechanical Engineering)
Mukwevho, Brighton Nne (Physical Metallurgy)
Mukwevho, Nzumbululo (Mechanical Engineering)
Munyai, Ignecious (Mechanical Engineering)
Munyai, Takalani (Physical Metallurgy)

Mushavhanamadi, Lugisani (Mechanical Engineering)
Ndaba, Nompumelelo Luyanda Nontokozo (Extraction Metallurgy)
Ndou, Tshosheko (Mechanical Engineering)
Nephalama, Ankonisaho (Mechanical Engineering)
Netshirando, Rilinde (Mechanical Engineering)
Ngcobo, Siphiwe Thato (Physical Metallurgy)
Ngobeni, John Edward (Physical Metallurgy)
Ngobese, Nqobile (Mechanical Engineering)
Ngoepe, Makwena Lucky (Physical Metallurgy)
Ngomane, Nomfundo (Physical Metallurgy)
Nkhumeleni, Adivhaho Hezekiel (Mechanical Engineering)
Nkosi, Bhacile Maggy (Extraction Metallurgy)
Nkuna, Lonia Ripfumelo (Mechanical Engineering)
Nkunkuma, Lindokuhle (Extraction Metallurgy)
Nkutha, Phetheni (Physical Metallurgy)
Nkwinika, Polite Tsako (Extraction Metallurgy)
Ntala, Montsheng Jacob (Extraction Metallurgy)
Nteyi, Tankiso (Mechanical Engineering)
Ntombela, Mpumelelo Sibongiseni Prosperity (Mechanical Engineering)
Nwendamutswu, Zwivhuya (Extraction Metallurgy)
Nxumalo, Wakhile Samkelo (Physical Metallurgy)
Nyati, Ngaakudzwe Vellem (Mechanical Engineering)
Pakkies, Malebogo (Extraction Metallurgy)
Phangisa, Peace Simphiwe (Mechanical Engineering)
Prinsloo, Adrian (Physical Metallurgy)
Ralepelle, Shanebethel (Mechanical Engineering)
Ramalamula, Onndwela (Physical Metallurgy)
Rampoloane, Phillip Bokamoso (Extraction Metallurgy)

Rantho, Tebatso (Mechanical Engineering)
Rasebeka, Tshepo Seapara (Extraction Metallurgy)
Sawuli, Ukho (Physical Metallurgy)
Seabata, Lerato Blessing (Mechanical Engineering)
Sebata, Tshephang Zacharia (Mechanical Engineering)
Sed, Delmar Abdisamed (Physical Metallurgy)
Sefako, Lehlohonolo Raymond (Physical Metallurgy)
Semenya, Brucely Mmanare (Mechanical Engineering)
Senyolo, Karabo Teboho (Mechanical Engineering)
Setlhodi, Kelebogile Philadelphia (Physical Metallurgy)
Shandu, Mpho (Extraction Metallurgy)
Shilenge, Plessure Katlego (Mechanical Engineering)
Shongwe, Ntokozo Faith (Extraction Metallurgy)
Shuping, Kefilwe (Mechanical Engineering)
Shuthulu, Mochekhwe (Mechanical Engineering)
Sibuyi, Nkateko Chabasoya (Extraction Metallurgy)
Sididzha, Khangale Thomas (Mechanical Engineering)
Sikundla, Zinhle (Mechanical Engineering)
Silubane, Ndumiso Mighty (Physical Metallurgy) **(with distinction)**
Sindane, Sean Sakhile (Mechanical Engineering)
Siphologo, Zwonaka (Mechanical Engineering)
Sithole, Xolani Innocent (Mechanical Engineering)
Skhosana, Mbali (Mechanical Engineering)
Sontsele, Anathi (Mechanical Engineering)
Subrumuny, Kyle (Extraction Metallurgy)
Thabethe, Sanele Sello (Mechanical Engineering)
Thubela, Takatso Daniel (Physical Metallurgy)
Thwala, Bongani Goodwill (Mechanical Engineering)
Tlhoiwa, Omphemetse (Extraction Metallurgy)

Tsehla, Bushy (Extraction Metallurgy)
Tsepane, Lerato (Extraction Metallurgy)
Tshimange, Malwela Sylvia (Extraction Metallurgy)
Vilakazi, Bonginkosi Goodboy (Mechanical Engineering)
Zisongo, Sboniso Lindokuhle (Mechanical Engineering)

2. Bachelor's

Baloyi, Chelsea Khanimambo (Construction)
Biyela, Siyabonga (Urban and Regional Planning)
Boikanyo, Thulani (Urban and Regional Planning)
Kheswa, Thabisile Nondumiso (Urban and Regional Planning)
Maluleke, Vongani Brian (Urban and Regional Planning)
Maringa, Achieve (Urban and Regional Planning)
Mashele, Dyondzo Michele (Urban and Regional Planning)
Mashele, Nshalati Alegria (Urban and Regional Planning)
Matsepe, Tshepang (Construction)
Mbatha, Sibusiso (Urban and Regional Planning)
Mogashoa, Tlotlo Remoabetswe (Urban and Regional Planning)
Molapisi, Keabetswe (Urban and Regional Planning)
Mothoa, Obakeng William (Urban and Regional Planning)
Motloung, Tlotlisang Tsietsi Kluivert (Urban and Regional Planning)
Mukhari, Promise Nyiku (Urban and Regional Planning)
Mupfekeri, Anesu Michelle (Urban and Regional Planning)
Musundwa, Muneiwa (Urban and Regional Planning)
Nengwekhulu, Akonisaho (Urban and Regional Planning)

Ntshingila, Sifundo (Urban and Regional Planning)
Nyandeni, Akhona (Urban and Regional Planning)
Ratshikhopha, Asivhothevhavhuya Excellent (Urban and Regional Planning)
Yende, Lifa Ken Nkosinathi (Urban and Regional Planning)
Zondo, Andile Ronald (Construction)

3. Postgraduate Diploma

Chauke, Nhlamulo Michelle (Operations Management)
Chepape, Mantlhane Thapelo (Operations Management)
Dube, Manasseh Alwande (Operations Management)
Gumbi, Siphelele Simon (Operations Management)
Katwayo, Sizwe Perfect (Operations Management)
Mabogoane, Moeketsi Concilia (Management Services)
Mbombo, Ruth (Operations Management)
Mhlanga, Sandile (Operations Management)
Mofokeng, Prince Molapo (Operations Management)
Mphundi, Thandizo Olive (Operations Management)
Mudau, Pfano (Management Services)
Mudau, Tshilidzi Glory (Operations Management)
Ngqumshe, Mampou Adelaide (Operations Management)
Ntai, Phiwokuhle Lungile (Management Services)
Ntalenyane, Bonolo (Operations Management)
Ntuli, Nkosiyethu Prince (Operations Management)
Penane, Kgmotso Portia (Operations Management)
Sibiya, Felicia (Management Services)
Singh, Kiolin (Management Services)
Tshabalala, Thobeka Owami (Management Services)

Tshifhenye, Pfano Valiant (Operations Management)
Tshivule, Lawrence (Management Services)

4. Bachelor of Engineering Technology Honours

Aboubakar, Ahmat Oumar (Chemical Engineering)
Dube, Manuel Philani (Chemical Engineering)
Jobodwana, Lisakhanya (Chemical Engineering)
Khumalo, Ntethelelo Praisworth (Chemical Engineering)
Madzingo, Sam Dananai (Chemical Engineering)
Maluleka, Kabaza (Chemical Engineering)
Mamosebo, Thoko Tokelo (Chemical Engineering)
Mampana, Thabang (Chemical Engineering)
Mangenge, Destination Arendwaho (Chemical Engineering)
Maswanganyi, Matimba Elton (Chemical Engineering)
Mathebula, Musa (Chemical Engineering)
Mncube, Sijabuliso Morena (Chemical Engineering)
Mokoena, Nelisiwe Juliet (Chemical Engineering)
Mosadi, Thandeka Jennifer (Chemical Engineering)
Mthembu, Portia (Chemical Engineering)
Ncube, Brian Proceeder (Chemical Engineering)
Ngobeni, Siphesihle Tracy (Chemical Engineering)
Ngwenya, Brenda Linah (Chemical Engineering)
Padare, Caleb Tinotenda (Chemical Engineering)
Pasipanodya, Danai (Chemical Engineering)
Sangweni, Joel Tafadzwa (Chemical Engineering)
Singo, Hazel Vhukhudo (Chemical Engineering)
Sithole, Nqobile (Chemical Engineering)
Tsasanyane, Nthabeleng Juliemae (Chemical Engineering)

Zondo, Melusi Austin (Chemical Engineering)

5. Master of Engineering (MEng)

Brinkmann, Tim (Mechanical Engineering)
Dissertation: Impact testing and modelling of composite laminate panels for use in off-road racing vehicle belly guards.
Supervisor: Dr CR Bester

Dada, Olaoluwa Olawale (Mechanical Engineering) **(with distinction)**
Dissertation: Investigation of hydrogen generation and storage performance of molybdenum phosphide and β12-borophene
Supervisor: Prof T Jen
Co-supervisor: Dr PE Imisili and Mr S Karimzadeh

Ibitoye, Ayotunde Idris (Mechanical Engineering) **(with distinction)**
Dissertation: Photoelectronic study of Cu2ZnSnS4-Titanium based Nanocereamic Interfaced via alumina (Al2O3) using first principle DFT approach
Supervisor: Prof T Jen
Co-supervisor: Dr S Oyinbo

Mohobelo, Mathabo Innocentia (Industrial Engineering)
Dissertation: Analysis of education quality at higher institutions from the students perspective
Supervisor: Prof PM Mashinini
Co-supervisor: Ms BNN Mushwana

Phiri, Christabel (Mechanical Engineering)
Dissertation: The effect of weld bead heat input on the performance of thick 3CR12 stainless steel welds
Supervisor: Prof DM Madyira

Sekwai, Mathapelo (Mechanical Engineering)
Dissertation: Performance assessment of a deformed vibrating screen cross bracket
Supervisor: Prof DM Madyira

6. Philosophiae Doctor (PhD)

Ibitoye, Segun Emmanuel (Mechanical Engineering)
Thesis: Composite development: Characterization of torrefied agro-residues briquettes
Supervisor: Prof T Jen
Co-supervisor: Dr RM Mahamood, Prof ET Akinlabi and Dr C Loha

Karimzadeh, Sina (Mechanical Engineering)
Thesis: Application of atomic layer deposition for developing lithium-ion batteries
Supervisor: Prof T Jen
Co-supervisor: Prof B Safaei

Le Roux, Pieter Andries (Mechanical Engineering)
Thesis: Fatigue life enhancement of Ti6Al4V-ELI parts by optimizing the machining strategy for a conducive residual stress field.
Supervisor: Prof RF Laubscher

Ledwaba, Kabelo Mike (Mechanical Engineering)
Thesis: Emerging Atomic layer deposition for hydrogen storage through yttrium doped borophene nanostructure
Supervisor: Prof T Jen

Marangwanda, Garikai Tawanda (Mechanical Engineering)
Thesis: Co-combustion optimization of Hwange Coal and Pinus Sawdust using CFD simulation
Supervisor: Prof DM Madyira

Ngobeni, Walter Amos (Metallurgical Engineering)
Thesis: Alkaline gelatinisation of novel depressants for pyrite, pyroxene, and talc from platinum group minerals flotation
Supervisor: Prof A Mulaba

Phalane, Mampsane Dolly (Industrial Engineering)
Thesis: A study on implementation effectiveness of safety, quality, and stewardship integrated framework in a manufacturing industry
Supervisor: Prof K Gupta
Co-supervisor: Dr G Muyengwa

Ramere, Moyahabo Dominic (Industrial Engineering)
Thesis: Reliability centered maintenance optimization for distribution substations with aging equipment using Artificial Neural Network
Supervisor: Prof OT Laseinde
Co-supervisor: Prof PM Mashinini

Rasmeni, Zenzile Zelda (Mechanical Engineering)
Thesis: Optimizing biogas production from wastewater biosolids: Anaerobic co-digestion with brewers' spent yeast
Supervisor: Prof DM Madyira
Co-supervisor: Dr AN Matheri

Ibitoye, Segun Emmanuel (Mechanical Engineering)

Segun Emmanuel Ibitoye earned his bachelor's and master's degrees in Mechanical Engineering from the University of Ilorin, Nigeria, in 2014 and 2019, respectively. In 2020, he enrolled for doctoral studies at the University of Johannesburg and completed his Ph.D. in Mechanical Engineering in 2023. Segun is a faculty member of the Department of Mechanical Engineering at the University of Ilorin. His research interests include renewable energy, material characterization, modeling and simulation. Segun holds two patents, a testament to his innovative and impactful work in his field of expertise.

The candidiate has harnessed the potential of agricultural residues for sustainable energy by creating composite fuel briquettes from torrified agricultural residues. These briquettes not only serve as an eco-friendly substitute for fossil fuels but also address global waste management challenges. The research highlights the influence of torrefaction temperature and residence time on the properties of these briquettes, emphasizing their enhanced combustion capabilities. Segun developed an empirical model aligning with the experimental data, aiding optimised biomass briquette design and production. Additionally, the candidate designed and built a torrefaction reactor and densification machine, providing valuable resources for teaching and research purposes. The groundbreaking nature of this work has led to the filing and granting of two patents. The candidate’s work signifies a crucial step towards sustainable energy solutions and efficient waste management techniques and a contribution the UN SDG7 on

clean energy technology. His doctoral research findings have been published in reputable international accredited journals.

Supervisor: Prof TC Jen
Co-Supervisor/s: Prof ET Akinlabi, Dr RM Mahamood and Dr C Loha

Karimzadeh, Sina **PhD (Mechanical Engineering)**

Sina Karimzadeh is a PhD candidate at the University of Johannesburg. He holds a MSc degree in Mechanical engineering from the University of Johannesburg in 2020. His current research interest focuses on the development of Li-ion battery active components and interface engineering by using atomic layer deposition (ALD) technique. He has also been involved in a number of projects including Hydrogen Storage, Hydrogen Generation, Thin Films and Nanotechnology, Drug Delivery, Heat Transfer, Water Purification Membrane and Computational modelling and simulation. He is currently the Head of the ALD and innovation sub-research group and the Lead experimentalist at the ALD facility.

This thesis aims to investigate the application of ALD in the development of LIBs components including cathode and anodes by DFT calculation and experimental analyses. Providing a comprehensive review of ALD application in developing high performance LIBs. Highlighting the role of theoretical modelling methods in developing the ALD research and overview of the most utilized experimental characterization techniques for ALD thin film samples and surface technology. Theoretical investigation on cathodic performance of niobium doped LiFePO4 material for high performance lithium-ion batteries. Theoretical and experimental study on ALD of niobium oxide film over LiFePO4 cathode composite for improved cathodic performance of lithium-ion batteries. Theoretical investigation on anodic performance of striped, β12 and χ3 borophene for

lithium-ion batteries. Investigating growing mechanism of α-Fe2O3 film by atomic layer deposition through ferrocene precursor and ozone on nickel mesh as anode electrode.

Supervisor: Prof TC Jen
Co-Supervisor/s: Prof B Safaei

Le Roux, Pieter Andries **PhD (Mechanical Engineering)**

Pieter le Roux completed his bachelor's degree in mechanical engineering in 2015. He obtained a master's degree (cum laude) in mechanical engineering in 2017 with a dissertation titled: Fatigue performance optimization of a transtibial prosthetic socket adapter. Pieter has published three articles to date and has presented some of his research at the prestigious International Academy for Production Engineering Conference on Surface Integrity (CSI) in 2020. Pieter entered academia in 2021 at the Independent Institute of Education (IIE) and is currently the Head of the Programme for Mechanical Engineering at the IIE and Chair of the IIE's National Engineering Research and Ethics Committee.

This thesis presents the results and conclusion of an experimental investigation to demonstrate an optimized machining strategy for single-point turning to enhance the surface integrity of a machined Ti-6Al-4V ELI component with the goal of improving fatigue performance. The cutting speed was optimized to obtain optimal compressive residual stresses for enhanced fatigue life. Conventional single-point turning was conducted to manufacture the specimen for fatigue testing with cutting speeds varying between 40 and 110 m/min. A bespoke rotating bending fatigue testing machine was designed and constructed that allowed for additional sensory feedback during testing. The fatigue results demonstrated an improvement in fatigue life of nearly 90% at a cutting speed of 100 m/min when compared to the conventionally utilized 40 m/min. The research clearly demonstrated that fatigue life enhancement is possible

by optimizing the cutting speed within a narrow band when machining Ti-6Al-4V ELI titanium alloy.

Supervisor: Prof RF Laubscher

Ledwaba, Kabelo Mike **PhD (Mechanical Engineering)**

Ledwaba Kabelo Mike is a PhD candidate at the University of Johannesburg. He completed his master's degree in chemical engineering with University of South Africa (Unisa) in December 2017. His thesis topic was "Development of a microbial fuel cell for energy recovery from wastewater". The research was on the field of renewable energy and highlights the importance of microbial fuel cell technology.

In his thesis, entitled Emerging atomic layer deposition for hydrogen storage through yttrium doped borophene nanostructure. He investigated the effects of Yttrium (Y) doping on the hydrogen storage capabilities of borophene monolayers using first-principles density functional calculations. The theoretical results will provide researchers with a fundamental understanding of the mechanism by which Y-borophene can store hydrogen from theoretical prospectives. He makes a significant contribution to the field of hydrogen storage, and the findings have been published in reputable journals. This material exhibited high H2 desorption performance at ambient temperatures, showing high potentials for fuel cell car (EV) operations. This thesis focuses on the cutting-edge scientific topic of hydrogen storage. The calculations demonstrate the potential of utilizing Y-doping β12-borophene nanomaterial as promising medium for hydrogen storage applications. Borophene (2D) unique geometry and electronic properties allow the higher hydrogen adsorption capacity, which surpassing the goals set by the U.S. Department of Energy.

Supervisor: Prof TC Jen

Marangwanda, Garikai Tawanda **PhD (Mechanical Engineering)**

Mr Garikai Marangwanda commenced his PhD in Mechanical Engineering in 2019 at the University of Johannesburg. Under the supervision of Professor Daniel Madyira, he tackled research titled "Optimisation of Hwange Bituminous Coal and Pinus Sawdust Co-combustion using CFD analysis". This research was motivated by the need to utilise waste material such as sawdust to generate energy.

Mr Garikai Marangwanda studied the combustion behaviour exhibited when waste sawdust is burnt together with coal. This research was motivated by the need to utilise waste material such as sawdust to generate energy. To achieve this, a model was developed that can optimise the energy and emissions that are produced through monitoring of combustion parameters. By use of a Drop Tube Furnace housed at ESKOM research centre, innovative experimental procedures were designed which assisted in the validation of this combustion model. Garikai used coal and waste sawdust samples from both Zimbabwe and South African in this study. The study showed that by substituting coal with around 20% waste sawdust, optimum combustion performance parameters were attainable whilst reducing emissions as well. This technology has direct application in industrial combustion systems and has potential to tackle various sustainable development goals. This study has managed to produce 6 publications in high impact journals.

Supervisor: Prof DM Madyira

Ngobeni, Walter Amos **PhD (Metallurgical Engineering)**

Walter Ngobeni graduated from Cape Peninsula University of Technology, where he earned a National Diploma in Chemical Engineering in 2008, followed by a Bachelor of Technology in Chemical Engineering in 2009. He further pursued his academic journey at the same university and obtained a Master of Technology in Chemical Engineering in 2013. In 2020, Walter registered for his Ph.D. program in Metallurgical Engineering at the University of Johannesburg. His research focuses on the development of alkaline gelatinisation of novel depressants for pyrite, pyroxene, and talc from platinum group minerals flotation.

Walter Ngobeni tackled one of the most pressing challenges in the mineral processing - the depression of pyrite, pyroxene, and talc from platinum group minerals during flotation. His work in developing alkaline gelatinised novel depressants has opened new avenues for sustainable and eco-friendly mining practices.Walter Ngobeni's research extends beyond academia, addressing real-world issues in mining chemicals and promoting the principles of green flotation. His work has generated two conference papers, two published journal articles and two manuscripts in review.

Supervisor: Prof AF Mulaba-Bafubiandi

Phalane, Mampsane Dolly **PhD (Industrial Engineering)**

Mampsane Dolly Phalane is a professional with comprehensive experience in leading long term strategic work. She holds a BTech and MTech in Industrial Engineering, BCom Finance & Investment and MBA. She has proven success in leading quality, manufacturing, stewardship, engineering, health/safety, and integrated work systems. She has been recognized for sustaining culture of awareness, inquisitiveness, and persistence for improvements in her current role where she works as Director of Manufacturing Quality Assurance and Internal Controls for a multinational consumer goods company. She was honored with a Techwomen award by Hilary Clinton for her role in mentoring girls in STEM.

This PhD research studied the Implementation Effectiveness of Safety, Quality, and Stewardship Integrated Framework in a Manufacturing Industry. The study was triggered by the effort spent on the individual management of safety, quality, and stewardship functions that left the organization with redundancies and risk of non-compliance. In this study, the effective integration of controls for managing the functions of safety, quality, and stewardship offered the organization opportunities to reduce redundancies, improve efficiency, increase the speed of decision making, organize workplace, enhance safety, and bolster productivity. The research developed an integrated SQS tool using Kaizen and Plan Do Check Action and many other industrial engineering tools and techniques. The outcomes of this research study are reported in the reputed international journals.

Supervisor: Prof K Gupta
Co-Supervisor/s: Dr G Muyengwa

Ramere, Moyahabo Dominic **PhD (Industrial Engineering)**

Moyahabo Dominic Ramere obtained his National Diploma (ND) and Bachelor of Technology (B-Tech) in Electrical Engineering from the Tshwane University of Technology in 2012 and 2015, respectively. He earned a Master of Technology (M-Tech) in Industrial Engineering with a specialization in Technology Management from the Tshwane University of Technology in 2019. He later embarked on his PhD in Industrial Engineering in 2020 at the University of Johannesburg. He has over 12 years of experience in electrical power systems design, operations, and maintenance in power utility industries. In 2021, he joined IIEMSA as a part-time lecturer in the Electrical Engineering Department.

The research focused on "Optimizing the Reliability Centered Maintenance (RCM) of distribution substations with aging equipment using an Artificial Neural Network (ANN) algorithm." The poor reliability of aging distribution substation infrastructure was investigated to identify the basis of unplanned electricity power interruptions. His research findings show that the RCM inefficiency of aging power equipment is the major contributor to substation downtimes. Higher frequencies and long downtimes of aged substation infrastructure were the key measures of reliability of power systems. The developed ANN algorithm has improved the overall RCM of aging substation equipment by reducing downtimes, lowering maintenance costs, and improving the reliability of electricity service delivery to end-users. The research information generated three (3) journal papers and two (2) conference

papers for improving electrical power systems operations, maintenance, and reliability. The accomplished objectives of his research will increase South Africa's power utility company's global competitiveness.

Supervisor: Prof OT Laseinde
Co-Supervisor/s: Prof PM Mashinini

Rasmeni, Zenzile Zelda **PhD (Mechanical Engineering)**

Ms. Zenzile Zelda Rasmeni holds a master's degree in metallurgical engineering from the University of Johannesburg. She is a skills development project manager at CSIR. She's engaged in conferences on resource efficiency, circular economy, and the water-food-energy nexus, with affiliations to ASME, SAIF, WISA, and ECSA. She supervises programs connecting students to industrial projects, leading to scientific publications. She's active in discussions on climate change and resource efficiency's impact on energy production.

Municipal wastewater treatment faces a cost-intensive problem with sludge disposal, which holds untapped energy potential. Similarly, the brewing industry generates substantial waste in the form of Brewer's Spent Yeast, which can serve as an energy source. Anaerobic digestion offers a solution, producing biogas and digestate from wastewater sludge, cutting disposal costs. However, mono-digestion of sludge yields limited biomethane. To enhance both quality and quantity of biogas, this research optimizes anaerobic co-digestion, offering a green energy source for the circular economy. This study promotes the adoption of biogas as a cleaner energy alternative for wastewater treatment plants, breweries, and effluent water treatment utilities. It encourages exploring brewer's yeast as a co-substrate to increase biogas production, fostering industrial symbiosis and reshaping waste into a valuable resource. Ultimately, it contributes to our understanding of potential co-substrates in anaerobic digestion.

Supervisor: Prof D Madyira
Co-Supervisor/s: Dr A Matheri

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SCAN ME AND UPDATE YOUR CONTACT DETAILS

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