Graduation Programme

The Future. Reimagined.

UNIVERSITY OF JOHANNESBURG

Welcome to the
Graduation Ceremony of the
University of Johannesburg
11 October 2023 at 09:30

Welkom by die
Gradeplegtigheid van die
Universiteit van Johannesburg
11 Oktober 2023 om 09:30

Le a Amogelwa
Moletlong wa Dikapešo wa
Yunibesithi ya Johannesburg
11 Diphalane 2023 ka 09:30

Niyamukelwa
eMcimbini wokweThweswa kweZiqu
weNyuvesi yaseJohannesburg
11 kuMfumfu 2023 ngele 09:30

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)

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 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), 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 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

CHAIRPERSON
Ms X Kakana

DEPUTY CHAIRPERSON
Dr Y Ndema

MEMBERS
Mr FM Baleni
Dr H Coovadia
Ms K Gugushe
Prof S Khan
Ms L Khumalo
Mr N Magoro
Mr M Manana
Ms L Mateza
Prof TA Meyer
Dr A Mokoena
Ms N Molope
Prof A Moteetee
Prof LG Mpedi
Mr LM Mpunzi
Ms NP Mvubu
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 ENGINEERING AND THE BUILT ENVIRONMENT
QUALIFICATIONS

1. Diploma | National Diploma

Makola, Tshepo Hope (Metallurgy Engineering)
Pitso, Theresa Lerato (Chemical Engineering)
Kondleka, Siyanda (Operations Management)
Lamola, Albert Thunyasenyane (Operations Management)
Lesitha, Neo (Operations Management)
Mabuza,Noluthando Precious (Operations Management)
Madi, Thavho Charles (Operations Management)
Maile, Pontsho Kutwadi (Operations Management)
Makhaya, Mbuyelo Polite (Operations Management)
Maraga, Amanda Zwivhuya (Management Services)
Mashishi, Nhlanhla Mmachoene (Operations Management)
Masilela, Nobantu (Management Services)
Masoga, Tumelo Phuti (Management Services)
Mbexe, Siyabulela (Operations Management)
Mdodana, Sanele (Operations Management)

Mnyenjwa, Namhla (Management Services)
Mokoena, Mulaifa (Operations Management)
Mothudi, Thato Precious (Operations Management)
Qasha, Okuhle (Operations Management)
Ramoroka, Moyahabo Catherine (Management Services)
Santos, Mirian Tchinossole Ferreira Dos (Operations Management)
Shilenge, Sagwadi (Management Services)
Tsotetsi, Manthatisi Mathapelo (Management Services)

2. Advanced Diploma

Lekoko, Kgosietsile Nicholas (Quality)
Magakwe, Mahlatse Reagile (Quality)
Nkosi, Bussie Trudy (Operations Management)

3. Bachelor of Engineering Technology

Ahmed, Hammaad (Civil Engineering)
Baron, Linae Tyrene Janelle (Industrial Engineering)
Basera, Runyararorwashe (Electrical Engineering)
Cilo, Sikhumbuzo Blessing (Mining Engineering)
Dlamini, Ayanda Zamanjomane (Electrical Engineering)

Dlamini, Bongane (Physical Metallurgy)
Dlepu, Sanelisiwe (Industrial Engineering)
Fredericks, Terry Anne Cassidy Dominique (Electrical Engineering)
Govender, Tristan (Civil Engineering)
Hadebe, Kwanele Lourence (Electrical Engineering)
Kenosi, Orapeleng Boikanyo (Civil Engineering)
Kganakga, Nhlonipho Mathaare Mfundo (Civil Engineering)
Ledwaba, Motlalepula Prudence (Industrial Engineering)
Lefakane, Onkagile (Civil Engineering)
Lekgoathi, Mokgaetji Gracious (Civil Engineering)
Luvha, Tshedza (Mechanical Engineering)
Mabasa, Nkateko Flyod (Mining Engineering)
Mabelane, Cast Benjamin (Civil Engineering)
Mabunda, Nomthandazo (Chemical Engineering)
Madzivhe, Ntsako Poul (Civil Engineering)
Magoloza, Sesethu Siviwe Innocent (Civil Engineering)
Makantise, Theron Ndivhuwo (Chemical Engineering)
Makgaka, Thato (Mining Engineering)
Malete, Jan (Industrial Engineering)
Mamphiswana, Ndivho (Electrical Engineering)
Mangena, Nomathamsanqa (Civil Engineering)
Manyisi, Yinhla (Chemical Engineering)

Maseko, Ncamiso Siphesihle Petrovious (Electrical Engineering)
Maswanganyi, Rilaveta Beatrice (Electrical Engineering)
Matamela, Karabo Michelle (Electrical Engineering)
Mathebula, Percy (Civil Engineering)
Mathunyane, Thapelo (Electrical Engineering)
Matlaila, Mogau Confidence (Industrial Engineering)
Matlala, Siphilele Magale Erwin (Mining Engineering)
Matlou, Pheladi (Civil Engineering)
Mdhluli, Junior Joshua (Civil Engineering)
Mdutyana, Lonwabo (Civil Engineering)
Miyambu, Kulani (Mining Engineering)
Mkhabela, Spiwe Mavis (Electrical Engineering)
Modau, Zwivhuya Vhuhwavho (Civil Engineering)
Mohale, Monaheng (Civil Engineering)
Moitsi, Sharmaine Matome (Mechanical Engineering)
Motepe, Bakang Johannes (Physical Metallurgy)
Munzhelele, Khodani Dancan (Mining Engineering)
Mutebu, Divine Mayifilua (Electrical Engineering)
Ndaba, Sinokuhle Brightness Mbali (Industrial Engineering)
Ndlozi, Nokuthula Rosewell (Industrial Engineering)
Ndzendze, Gracha (Mining Engineering)
Nkoana, Kabelo William (Industrial Engineering)
Nkosi, Bongiwe Maureen (Civil Engineering)

Nkosi, Siphesihle Nokwanda (Industrial Engineering)
Nkuna, Angelo (Mining Engineering)
Noko, Kabelo Kifilwe (Civil Engineering)
Nonda, Mulangi Jonathan (Electrical Engineering)
Ntene, Mpho (Civil Engineering)
Ntini, Nhlakanipho Arnold (Mining Engineering)
Ntsoane, Tumiso (Electrical Engineering)
Ntsoele, Kabelo Elvin (Civil Engineering)
Phosha, Muimeleli Prince (Mining Engineering)
Ponoane, Kelumetse (Mining Engineering)
Ramutumbu, Londani (Civil Engineering)
Rangwaga, Tshireletso (Industrial Engineering)
Rasilwela, Onndindaho Witness (Chemical Engineering)
Rikhotso, Tlharihani (Electrical Engineering)
Sekgobela, Junior Tshepo (Extraction Metallurgy)
Selonga, Hlonipho Blessing (Electrical Engineering)
Serongoane, Refentse Martin (Civil Engineering)
Setshabe, Thabang Thuledi (Civil Engineering)
Setwaba, Makgabo Marion (Mechanical Engineering)
Shude, Bongiwe Jennifer (Mining Engineering)
Tjatji, Nthabiseng Phelecia (Extraction Metallurgy)
Zuma, Nhlanhla Ben (Civil Engineering)

4. Bachelor's

Mahumani, Tonny (Mine Surveying)
Masutha, Nnditsheni (Urban and Regional Planning)
Matsoso, Katleho (Mine Surveying)
Mdaka, Basani (Urban and Regional Planning)
Mdluli, Mpho Marcus (Urban and Regional Planning)
Modiba, Molokela Johannes (Mine Surveying)
Mokgokong, Mahlatse Trudency (Mine Surveying)
Mvelase, Zolani (Urban and Regional Planning)
Rasemene, Sephiri Thipanyana (Urban and Regional Planning)

5. Bachelor of Engineering

Bwogyi, Polycarp (Civil Engineering)
Chabela, Matli Junior (Civil Engineering)
Chikanya, Hildah Mutsa (Civil Engineering)
Dlamini, Bongiwe Patricia (Civil Engineering)
Dube, Prince (Electrical and Electronic)
Guta, Munashe Moreblessing (Civil Engineering)
Hlaniso, Vusile Graeme (Civil Engineering)
Jojo, Asiphe (Civil Engineering)
Kamuto, Nevanje (Civil Engineering)
Kimbini, Ngonidzashe (Civil Engineering)
Mabale, Munene Khivi Clementine (Civil Engineering)

Mabona, Phililе Phyllis (Civil Engineering)
Madua, Silaelo Owen (Civil Engineering)
Madzhadzhi, Rothe (Civil Engineering)
Manganyi, Twisiso (Civil Engineering)
Mathole, Maneka Graduate (Civil Engineering)
Mbambo, Mfundo (Electrical and Electronic Engineering)
Methula, Musawenkosi Ricardo (Mechanical Engineering)
Mkhatshwa, Ntobeko Bongumenzi (Civil Engineering)
Mnguni, Sinethemba Praysweth (Electrical and Electronic)
Mothapo, Tumiso Mathale Samuel (Mechanical Engineering)
Moleleki, Tumelo Aaron (Mechanical Engineering)
Mushaathoni, Mutondwa (Civil Engineering)
Naidoo, Ashton Ryan (Civil Engineering)
Ndou, Tovhowani (Electrical and Electronic)
Nkulu, Ngoy Consolation (Electrical and Electronic)
Phasha, Nkolo Johannah (Civil Engineering)
Phosa, Lebogang Delight (Civil Engineering)
Ramurafhi, Asivhanga (Electrical and Electronic Engineering)
Ringane, Makungu Junior (Civil Engineering)
Smith, Calvin Jozua (Mechanical Engineering)
Tazvivinga, Panashe (Civil Engineering)

Vengatsammy, Gaelan (Electrical and Electronic Engineering)

6. Bachelor of Engineering Technology Honours

Lebambo, Mpendulo Linda (Mining Engineering)
Mandlenkosi, Perceverence Vuyiswa (Electrical Engineering)
Mantshwane, Kgotatso Benedict (Industrial Engineering)
Mtshweni, Sipho (Mechanical Engineering)
Munasi, Andrew (Industrial Engineering)
Nkosi, Brian Nathan (Civil Engineering)
Nkosi, Hlengiwe Clementine (Industrial Engineering)
Nukeri, Xihluke Faith (Metallurgical Engineeering)
Photo, Tebogo Tlou (Industrial Engineering)
Plaatjies, Simangele Precious (Electrical Engineering)
Pudi, Setlabocha (Industrial Engineering)
Siziba, Tshegofatso Roselyn (Industrial Engineering)
Tshuma, Teresa Sibongisani (Chemical Engineering)
Vilanculo, Knowledge Morris (Industrial Engineering)

7. Master of Technology

Dinake, Masego (Chemical Engineering)
Dissertation: Biodiesel production from vegetable oil over supported magnesium oxide catalysts.
Supervisor: Dr PR Khangale
Co-supervisor: Prof K Jalama

Khumalo, Ntsako (Construction Management) **(with distinction)**
Dissertation: Impact of implementing building information modelling at the design conceptual phase on project quality and budget
Supervisor: Prof I Musonda
Co-supervisor: Mr A Onososen

Mampuya, Mpinda Bob (Metallurgy Engineering) **(with distinction)**
Dissertation: Effect of solution annealing heat treatment on the performances of duplex stainless steel 2205
Supervisor: Prof PA Olubambi
Co-supervisor: Dr K Mutombo

Masoeu, Moahi Christopher (Mechanical Engineering)
Dissertation: Failure analysis of a fridge plant compressor
Supervisor: Dr MS Nkosi
Co-supervisor: Prof K Gupta

Mereyotlhe, Oratilwe Ishmael (Operation Management)
Dissertation: An analysis of operations management in filmmaking: a case of film production workflow in Soweto
Supervisor: Mr SM Mkwanazi
Co-supervisor: Dr NS Madonsela

Ndlovu, Nomsa Petunia (Operations Management)
Dissertation: Impact of Human Resource Management on service departments and quality service delivery: A case of Mogale City Local Municipality
Supervisor: Prof A Pradhan
Co- supervisor: Ms M Motebele

8. **Master's**

Adesominu, Olubusola Stephanie (Operations Management)
Dissertation: Assessing logistics 4.0 to mitigate the pandemic risks on 3PL's key performance indicators – The South African retail industry
Supervisor: Prof N Sukdeo
Co-supervisor: Mr S Mukwakungu

Laseinde, Oluwaseun (Operations Management) **(with distinction)**
Dissertation: An assessment of dropshipping supply chain in the South African
e-retail industry in the era of the 4IR
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr K Mushavhanamadi

Maluleke, Nhlaluko (Urban and Regional Planning)
Dissertation: Examining interconnectedness and interdependencies of public transportation systems: A case of Johannesburg
Supervisor: Dr T Moyo
Co-supervisor: Prof W Musakwa

Mgiba, Carol (Sustainable Mining)
Dissertation: Slope stability analysis and design for a small-scale mine
Supervisor: Dr S Rupprecht

Mukwevho, Ofhani (Sustainable Urban Planning&Dev)
Dissertation: An investigation of the impacts of green building on energy and
water saving in Gauteng City Region, South Africa
Supervisor: Prof T Gumbo
Co-supervisor: Prof W Musakwa

Ndevu, Wandisa (Sustainable Urban Planning&Dev)
Dissertation: Transforming living conditions in informal settlements
Supervisor: Prof T Gumbo

Olivier, Ryan (Industrial Engineering) **(with distinction)**
Dissertation: An Investigation into Energy Saving Opportunities for a Pharmaceutical Company in South Africa
Supervisor: Mrs H Steenkamp

Onyedikachi, Prisca Ifunanya Samuel (Operations Management) **(with distinction)**
Dissertation: Investigating factors for predicting consumer preferred discounts of nearly expired products in retail stores.
Supervisor: Prof A Pradhan
Co-supervisor: Prof E Akinlabi

Rikhotso, Vutlhari Sharon (Urban and Regional Planning)
Dissertation: Exploring the ecological impact of public transportation modes: A case of Johannesburg, South Africa
Supervisor: Prof T Gumbo
Co-supervisor: Dr T Moyo

Sibiya, Busisiwe Nomusa (Sustainable Urban Planning&Dev)
Dissertation: Digital transformation of cities through emerging industry 4.0 Smart technologies and infrastructure in South Africa
Supervisor: Mr A Ogra
Co-supervisor: Prof C Aigbavboa

Sithole, Siphiwe (Operations Management)
Dissertation: Benefits of technology: Utilisation of Blockchain in the South African banking sector amid Industry 4.0
Supervisor: Dr K Mushavhanamadi
Co-supervisor: Mr EM Bakama

Tabane, Isaac Tsholofelo (Sustainable Urban Planning&Dev)
Dissertation: The spatial integration of motorized and non-motorised transport systems in Turffontein, City of Johannesburg
Supervisor: Prof T Gumbo
Co-supervisor: Mr B Risimati

Tladi, Motlatso Ramadimetse Sinah (Chemical Engineering)
Dissertation: Valorisation of plastic and tyre wastes with incorporation of biochar for potholes repair
Supervisor: Prof T Mashifana
Co-supervisor: Dr NT Sithole

9. Master of Engineering

Amoa Mensah, Afia (Engineering Management)
Dissertation: Engineers' understanding and use of capital budgeting techniques
Supervisor: Prof JHC Pretorius
Co-supervisor: Dr E Ogbeifun

Araya, Eleni Berhe (Structural Engineering)
Dissertation: Investigation of slab deterioration due to corrosion: case study on two-story existing building in Johannesburg, South Africa
Supervisor: Prof MO Dinka

Desai, Shamil (Engineering Management) **(with distinction)**
Dissertation: Life-cycle costing for cooling ventilation systems in hospitals
Supervisor: Dr S Benade
Co-supervisor: Prof JHC Pretorius

Dube, Mayibongwe (Electrical and Electronic Engineering)
Dissertation: Design and fabrication of a miniaturized dual band planar antenna for wireless communication
Supervisor: Prof R Heymann

Dwivedi, Awikal Alias Banty (Mechanical Engineering)
Dissertation: Natural ventilation of a commercial greenhouse
Supervisor: Dr S Kruger
Co-supervisor: Prof L Pretorius

Govender, Poovendren (Electrical and Electronics Engineering)
Dissertation: Dynamic quality of service enabled network slicing for fifth generation core network
Supervisor: Prof KA Ogudo
Co-supervisor: Dr SC Chabalala

Makhanya, Siphelele Perfect (Electrical and Electronic Engineering)
Dissertation: A robust low-cost analysis for a unidirectional modem device
using spread frequency shift keying modulation
Supervisor: Prof K Ouahada
Co-supervisor: Dr FN Igboamalu

Mudau, Unarine Bridget (Electrical and Electronic Engineering)
Dissertation: Long-term electricity generation expansion planning, a case study for Council for Scientific and Industrial Research (CSIR)
Supervisor: Prof AF Mulaba-Bafubiandi
Co-supervisor: Prof J Meyer

Muzioreva, Happison (Civil Engineering)
Dissertation: Developing a decentralized wastewater systems framework for constructed wetlands in Bulawayo, Zimbabwe
Supervisor: Prof T Gumbo
Co-supervisor: Dr N Kavishe

Nedzanani, Arehone (Engineering Management)
Dissertation: Optimum selection of maintenance strategies
Supervisor: Prof A Telukdarie

Okafor, Ebuka Emmanuel (Electrical and Electronic Engineering)
Dissertation: Linewidth narrowing of a selective wavelength tunable ring cavity erbium doped fiber laser using a saturable absorber
Supervisor: Prof K Ouahada
Co-supervisor: Dr FN Igboamalu

Olorungbemi, Elijah Ayoola (Mechanical Engineering)
Dissertation: Characterising the effects of corrosion media on mild steel
Supervisor: Prof TC Jen
Co-supervisor: Prof ET Akinlabi

Sithole, Lindokuhle (Electrical and Electronic Engineering)
Dissertation: Peer-to-peer energy transaction in smart grids using blockchain technology
Supervisor: Dr O Dzobo

Umeonwuka, Obumneme Obiajulu (Electrical and Electronic Engineering) **(with distinction)**
Dissertation: Deep learning-assisted energy prediction modelling for energy
harvesting in wirelessly connected cognitive radio devices
Supervisor: Prof TC Shongwe
Co-supervisor: Dr BS Adejumob

Van Reenen, Wihann (Civil Engineering)
Dissertation: Considerations for the safe removal of greywater from a South African informal settlement
Supervisor: Mr JJ Bester
Co-supervisor: Prof TG Barnard

Yumba, Wa Kutwa Josue (Civil Engineering)
Dissertation: Laboratory investigation of sinkhole propagation induced by a
leaking pipe using fibre Bragg grating sensors
Supervisor: Prof M Ferentinou
Co-supervisor: Mr MF Grobler

10. Master of Philosophy

Chabalala, Tiyani Lloyd (Engineering Management)
Dissertation: Identification of 4IR technologies and related skills in the South-African
mining sector
Supervisor: Dr S Benade
Co-supervisor: Prof AL Marnewick

Cronje, Francois Johannes (Civil Engineering)
Dissertation: Appraisal of active water distribution system management for
resource conservation in South Africa
Supervisor: Dr G Nkhonjera
Co-supervisor: Dr R Alowo

Gaonnwe, Tshepo Alphious (Mechanical Engineering)
Dissertation: Investigating the mechanical and microstructural properties of
friction stir welding of cold rolled aluminium 6082 T6
Supervisor: Prof PM Mashinini
Co-supervisor: Dr M Pita

Gyekye, Nana Boateng (Engineering Management) **(with distinction)**
Dissertation: Renewable energy implementation considerations in the South African mining sector
Supervisor: Prof A Marnewick
Co-supervisor: Dr K Olatayo

Jali, Estelle Liziwe Yonela (Engineering Management)**Dissertation:** Guidelines for implementing robotic process automation in banking operations
Supervisor: Prof A Marnewick
Co-supervisor: Dr N Joseph

Kamga Tuegno, Franck Ardin (Engineering Management)
Dissertation: Maintenance practices on electromagnetic flowmeters in water utilities
Supervisor: Prof AL Marnewick
Co-supervisor: Dr TJ Mofokeng

Maibela, Phirana Nicholas (Engineering Management)
Dissertation: Application of strategies and technologies for implementing
Industry 4.0 principles in the Industrial Engineering laboratories
Supervisor: Dr R Mutyavavire

Maile, Albert Basia (Mechanical Engineering) **(with distinction)**
Dissertation: Time response analysis of a shape memory alloy based soft
robotic gripper with variable stiffness
Supervisor: Dr K Tekweme
Co-supervisor: Prof K Gupta

Maseko, Ncedo Sandile (Electrical and Electronic Engineering)
Dissertation: Negative capacitance analysis of discrete semiconductors
Supervisor: Dr J Venter

Mashele, Dunisani Cyril (Engineering Management)
Dissertation: Knowledge management towards knowledge transfer and knowledge retention
Supervisor: Dr S Benade
Co-supervisor: Prof AL Marnewick

Mathebula, Nomsa (Engineering Management)
Dissertation: Benefits and challenges of an inland port system: A case study in South Africa
Supervisor: Dr S Benade
Co-supervisor: Prof AL Marnewick

Matjane, Obakeng Basetsana (Engineering Management)
Dissertation: The adoption of road asset management principles to address maintenance backlogs
Supervisor: Prof AL Marnewick
Co-supervisor: Dr TJ Mofokeng

May, Siyasanga Innocent (Electrical and Electronic Engineering) **(with distinction)**
Dissertation: Output power forecast of photovoltaic systems using machine
Learning algorithms
Supervisor: Prof PN Bokoro
Co-supervisor: Dr K Roro
Co-supervisor: Mr L Pratt

Mokgatle, Lesedi Mafiwa (Engineering Management)
Dissertation: Stage gate engineering design: A case study in electrostatic precipitation
Supervisor: Prof JHC Pretorius

Molatudi, Lolo Errol (Mechanical Engineering)
Dissertation: An aeroacoustics numerical analysis of variable and fixed-pitch
blades of an H-rotor vertical axis wind turbine: Ffowcs Williams-
Hawkings model
Supervisor: Dr TJ Kunene
Co-supervisor: Prof LK Tartibu

Mpova, Lukoki (Electrical and Electronic Engineering)
Dissertation: Deep-learning-based classification and detection of
cyanosis on lightly and darkly pigmented skin
Supervisor: Prof TC Shongwe
Co-supervisor: Dr AN Hasan

Ngonyama, Candy Ntsako (Engineering Management)
Dissertation: A comparative study of the efficiency of a natural gas-fired boiler versus a coal-fired boiler in Gauteng province hospitals
Supervisor: Prof JHC Pretorius

Ntisana, Athi (Engineering Management)
Dissertation: Efficiency performance of two PV system models based on their
generation capacity
Supervisor: Prof JHC Pretorius
Co-supervisor: Dr P Eboule

Ramphele, Jaffrey (Engineering Management)
Dissertation: Causes of delays in a coal line: A substations case study
Supervisor: Dr A Vermeulen
Co-supervisor: Prof JHC Pretorius

Repinga, Khethiwe Esther (Engineering Management)
Dissertation: Productivity improvement using lean principles in a supply chain environment
Supervisor: Dr A Vermeulen
Co-supervisor: Prof JHC Pretorius

Seemise, Lebogang Gift Khuduge (Engineering Management)
Dissertation: ERP systems for revolutionised operational efficiency in a mining operation
Supervisor: Prof A Telukdarie

Sifir, Samuel Gebre (Engineering Management)
Dissertation: Power Quality disturbances and estimation: A case study
Supervisor: Prof JHC Pretorius
Co-supervisor: Dr P Eboule

Tchagna, Basile Jason (Electrical and Electronic Engineering)
Dissertation: Performance analysis of modulation schemes for a visible light communication channel
Supervisor: Prof K Ouahada
Co-supervisor: Dr RA Ndjiongue

Tikwayo, Lihle Neo (Engineering Management)
Dissertation: Application of industry 4.0 technologies in warehouse management: A systematic literature review
Supervisor: Dr TND Mathaba

Tshisikule, Phindulo (Engineering Management)
Dissertation: Green supply chain management in the South African automotive industry
Supervisor: Dr TND Mathaba

11. Master of Science

Acquah, Evelyn Lilian (Construction Management) **(with distinction)**
Dissertation: An assessment of abandonment of GETFUND building projects in Ghana: a case of Ghanaian tertiary institutions
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr P Tunji-Olayeni

Akinyomi, Oluwarotimi (Construction Management) **(with distinction)**
Dissertation: Agri-food building performance evaluation
Using machine learning
Supervisor: Prof CO Aigbavboa
Co-supervisor: Prof N Nwulu

Ferlito, Traci Lee Daniella (Construction Management)
Dissertation: Developing a strategic framework to enhance integrated and sustainable construction practices in South African affordable housing sector
Supervisor: Prof I Musonda
Co-supervisor: Dr JN Agumba & Ms MM Tjebane

Kale, Hildah (Construction Management) **(with distinction)**
Dissertation: Exploratory study on the implementation of occupational health and safety management systems by SMME's contractors in the South Africa construction industry
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr NN Mashwama

Liphadzi, Nhlalala Michelle (Construction Management)
Dissertation: Construction waste management: A comparative study on building information modelling opportunities and challenges in South Africa
Supervisor: Prof I Musonda
Co-supervisor: Mr AOA Onososeni

Maiwashe, Mpho Terrence (Quantity Surveying) **(with distinction)**
Dissertation: An exploratory study on the current implementation of unmanned aerial vehicles in the South African construction industry
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr EO Ayorinde

Nngidi, Andani Ashley (Construction Management) **(with distinction)**
Dissertation: An assessment of Risk Management in digitalization
of facilities management in South Africa
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr M Ikuabe

Seiso, Modisaotsile Patrick (Construction Management) **(with distinction)**
Dissertation: Assessing the critical factors affecting the success of joint ventures: a case of the Gauteng construction industry
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr BF Ogunbayo

12. Doctor Philosophiae (DPhil)

Hardy, Caroline Hazel (Mechinal Engineering)
Thesis: Analyzing the urban heat Island effect using remotely sensed data
Supervisor: Prof AL Nel

Ohemeng, Eric Ababio (Civil Engineering)
Thesis: Potentials of waste concrete elements for production of construction materials
Supervisor: Prof SO Ekolu
Co-supervisor: Dr HA Quainoo

13. Doctor of Philosophy (PhD)

Akinradewo, Opeoluwa Israel (Construction Management)
Thesis: A blockchain adoption framework for information management systems in the South African construction industry
Supervisor: Prof CO Aigbavboa
Co-supervisor: Dr AE Oke

David, Love Opeyemi (Construction Management)
Thesis: A water, energy and food nexus project delivery framework for South Africa
Supervisor: Prof CO Aigbavboa
Co-supervisor: Prof NI Nwulu

Manenzhe, Mpho Trinity (Engineering Management)
Thesis: Integrated reliability management modelling: A 4IR systems approach
Supervisor: Prof A Telukdarie
Co-supervisor: Dr M Munsamy

Mashoane, Merementsi Israel (Operations Management)
Thesis: Outsource vs in-house manufacturing in construction and roads
infrastructure firms: Framework for decision-making
Supervisor: Dr EI Edoun
Co-supervisor: Prof A Pradhan

Mhlongo, Zenkosi Dumile (Engineering Management)
Thesis: A governance framework for housing projects in the Gauteng City Region, South Africa
Supervisor: Prof T Gumbo
Co-supervisor: Prof I Musonda

Motjoadi, Vinny (Electrical and Electronic Engineering)
Thesis: Analysis of microgrid architecture and policy framework for sustainable electricity supply of rural communities of Limpopo in South Africa
Supervisor: Prof N Bokoro
Co-supervisor: N/A

Ncube, Pauline (Chemical Engineering)
Thesis: Heterogeneous photocatalytic and advanced oxidation degradation of emerging pollutants in wastewater
Supervisor: Prof F Ntuli
Co-supervisor: Prof C Zvinowanda & Prof M Belaid

Paepae, Thulane (Electrical and Electronic Engineering)
Thesis: Development of a machine learning-based virtual sensing concept for water quality monitoring
Supervisor: Prof PN Bokoro
Co-supervisor: Prof K Kyamakya

Ralengole, Galeboe Frans (Chemical Engineering)
Thesis: Carbon dioxide conversion to fuel via modified Fischer-Tropsch synthesis over noble metal catalysts
Supervisor: Dr PR Khangale
Co-supervisor: Prof K Jalam

Saveca, John (Electrical and Electronic Engineering)
Thesis: Design and optimization of ocean wave converter systems based on machine learning and evolutionary optimization algorithms
Supervisor: Prof Y Sun
Co-supervisor: Prof Z Wang

14. Honorary Doctor of Philosophy *(honoris causa)*

Huang, Wei

Honorary Doctor of Philosophy *(honoris causa)*

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

CV AND LAUDATIONS

Hardy, Caroline Hazel Mechanical Engineering Science **(DIng)**

Caroline Hardy obtained the degree B.Ing (Mechanical Engineering Science) from the University of Johannesburg in 2007, where she was awarded ``Best Final Year Student in Mechanical Engineering''. In 2011, she obtained a B.Sc degree for studies in Computer Science, Information Systems and Applied Mathematics from UNISA. In the same year the University of Johannesburg conferred the degree of M.Ing (Mechanical Engineering Science) upon her for the research entitled ``Image Processing Techniques for Hazardous Weather Detection''. Currently, she is employed as a Data Scientist specializing in the analysis of hyperspectral image data.

The candidate advanced the study of surface micro-urban heat islands within Johannesburg through the use of geospatial data products including air temperature measurements and imagery from satellite remote sensing. The analysis of surface urban heat islands is hindered by a combination of low spatial resolution image data, long revisit times and missing data due to cloud cover and cloud shadows, signal dropout, or the area of interest falling outside of the instrument's field of view and thus not being captured. To address these problems the candidate developed novel copulabased statistical models using the local climate zone classification scheme to estimate missing values and produce gap-free land surface temperature maps. Furthermore, this research demonstrated the existence and temporal behaviour of surface microurban heat islands over different intra-urban climate regimes within Johannesburg.

Supervisor: Prof AL Nel

Ohemeng, Eric Ababio Civil Engineering **(DPhil)**

Eric Ababio Ohemeng was born on September 17, 1978, in the Ashanti Region of Ghana. Eric obtained his HND in Building Technology (2003) from Kumasi Technical University (formerly known as Kumasi Polytechnic), Ghana. At the University of Education, Winneba, Ghana, he obtained a B.Ed. in Technical (Construction Option) and MPhil in Construction Technology in 2010 and 2013, respectively. He was a temporary lecturer at Kumasi Technical University from 2014 to 2017. In 2018, he started his PhD in civil engineering at the University of Johannesburg, South Africa. Mr. Ohemeng published five (5) articles in Q1 journals during his PhD studies.

The candidate's study focused on potentials of waste concrete elements for production of concrete materials. In Phase I of the research, new models were developed for predicting the compressive strength, splitting tensile strength, and elastic modulus of recycled concrete containing non-treated and treated coarse recycled concrete aggregates (CRCAs) using an empirical approach. Validation of the models gave realistic predictions. The proposed models may be employed to convert standard strength grades of conventional concrete made with natural coarse aggregate (NCA) to the equivalent grades for recycled concrete containing CRCA. Phase II of the study evaluated the effect of ground, granulated blast-furnace-slag (GGBFS) and fly ash (FA) on cement masonry mortar containing waste concrete powder (WCP). Research findings indicate enhanced mechanical properties of the mortars when GGBFS and FA were used up to 15% and 10%, respectively. The thesis generated five articles in high-impact-factor, international journals.

Supervisor: Prof SO Ekolu
Co-supervisor: Dr HA Quainoo

Akinradewo, Opeoluwa Israel Construction Management **(PhD)**

Opeoluwa is a highly accomplished academic with a passion for research. He completed his MTech in Quantity Surveying with distinction in 2020 at the University of Johannesburg and has published over 70 articles in reputable journals, book chapters, and conference proceedings. His research focuses on the application of blockchain technology to streamline business processes in the construction industry. He has received numerous awards for his research work, including the Academic Rising Star award at The BIM Africa Innovation Awards 2021 and the Recognition of Exceptional Academic Achievement in Doctoral Studies—2022" award by FEBE at the University of Johannesburg.

The study developed a four-factor framework for the adoption of blockchain technology for information management in the South African construction industry. The framework identifies the constructs influencing the adoption of blockchain technology, which are technological infrastructure, policy and regulation, organisational culture, and technology governance. The study concluded that the South African construction industry needs to be aware of the various types of infrastructure to be put in place for the adoption of blockchain technology, and that organisations need to shift their business approach and attitude towards digitalisation. The study recommended that construction industry regulatory bodies implement policies that promote the adoption of blockchain technology. This will spur individual organisations involved in construction projects to upgrade their business processes to accommodate the decentralised approach to decision-making on the blockchain-based information management system. This research journey got the researcher the overall best doctoral student in the faculty award for the 2022 academic year.

Supervisor: Prof CO Aigbavboa
Co-Supervisor: Dr AE Oke

David, Opeyemi Love Construction Management **(PhD)**

David Love holds a First Class BTech in 2016 and an MTech with Distinction in 2019 from the Federal University of Technology, Akure. He has published peer-reviewed articles in journals, book chapters, and conferences, with an ongoing book authorship. He has cognate experience in research, Leadership, Project Management, Digital marketing, and Strategic Communications. He has successfully led many associations and engagements with lasting impacts, which include being a former President of the Congress of Nigerian Students at the University of Johannesburg. With adept project management, he is involved in the management of two EU projects on Digitalization and Renewable Energy.

The thesis developed a framework to foster the successful delivery of water, energy, and food (WEF) Nexus Projects in South Africa. This is due to the interconnected nature of the developmental resources, as well as the insecurity that has engulfed the resources in Sub–Saharan Africa. Using Structural Equation Modeling for data analysis, the framework consists of eight determinants that encompass economic activities, technological innovation, urbanization, ecosystem services, transportation infrastructure, cleaner production, value chain activities, and circular economy. The study also uncovered the potential for 4IR technologies to digitize the resource nexus, and production cycle, and catalyze sustainability. The thesis introduces a novel approach to managing projects, which will be useful throughout policy formulation, urban planning & development, achievement of sustainable development goals, and the achievement of the strategic goals of the private sector as it relates to the simultaneous usage of the three resources.

Supervisor: Prof CO Aigbavboa
Co-Supervisors: Prof N Nwulu & Prof O Adepoju

Manenzhe, Mpho Trinity Engineering Management **(PhD)**

Mpho Trinity Manenzhe obtained a bachelor's degree in electrical engineering and a master's degree in engineering management from the University of Johannesburg in 2010 and 2018 respectively. He is a holder of two Government Certificates of Competency, Mines and Works, and factories. He began his career at Siemens and later transitioned to the mining industry, commencing with De Beers as an engineer-in-training and later worked as a section engineer. He thereafter joined Anglo American as an engineer. He is currently a manager for asset maintenance at Tronox South Africa. His Ph.D. works includes published international papers.

The candidate's focus of research is on system dynamics modeling of the integration of Industry 4.0 technologies in reliability engineering management. His research integrated the implementation of Industry 4.0 technologies, with system dynamics modeling to develop an Industry 4.0 systems approach as a tool for modeling and mathematical simulations. This study offers authoritative support to decision-makers through future predictions of critical asset reliability-based tasks, resource allocation, operational costs, equipment spare parts potential demand, and production output. The model delivers additional value by integrating digital scenarios and outcome predictors. The research study is a novel extension of the body of knowledge in digital asset and reliability management. The calibration conducted for this study extends to the extant system dynamics simulation model's testing and validation body of knowledge. The study output is published in international conference papers and Scopus-indexed journals.

Supervisor: Prof A Telukdarie
Co-supervisor: Dr M Munsamy

Mashoane, Merementsi Israe Operations Management l **(PhD)**

Mr Mashoane M.I is a Business Banker at First National Bank in South Africa and a PhD candidate at the University of Johannesburg. His doctoral thesis titled Outsource vs InHouse manufacturing in construction and Road's infrastructure Firms focuses on the under-researched areas.

This research is based on the fieldwork conducted through the networks of construction firms in and around Gauteng using interview questions. The findings of this thesis concluded that firms opt for outsourcing to reduce costs so that they can have full control of the project. This study contributes to the body of knowledge by providing an integrated Beide model which holds that, firms can utilize an adopted approach to achieve the organisational goal particularly in an area of research that is moderately nascent. The above integrated model could be useful to firms to increase the efficiency of innovative efforts to avoid disappointments. The above will, as a result help to assess the efficiency and effectiveness of organisations when undertaking innovation activities.

Supervisor: Dr EI Edoun
Co-supervisor: Prof A Pradhan

Mhlongo, Zenkosi Dumile **DPhil (Engineering Management)**

Zenkosi Dumile Mhlongo holds a Bachelor of Social Science (Honours) in Social Work and MSc in Housing & Urban and Regional Planning from the University of Natal. She completed her MSc in Urban Housing Management with the Institute of Housing Studies (Netherlands) and Lund University (Sweden). She thereafter joined the School of Architecture, Planning and Housing as project manager for Housing Capacity Building Programme. Her work experience includes Department of Housing, Centre for Scientific and Industrial Research, and Council for Built Environment. Currently, she is the Deputy Director General for research, policy, strategy, and planning for Department of Human Settlements.

The candidate developed a housing project governance framework, which enlightens sustainable institutional arrangements within national, provincial, and local government spheres within the Gauteng City Region, South Africa. The framework advances timely and effective participation of various stakeholders in housing delivery systems and processes, with specific reference to low-income housing. Deploying an interpretivist philosophical persuasion, adopting an exploratory research design, and applying a qualitative research approach, the study reveals the interchangeable interpretation and usage of governance concept with government institutions. Inductively, the triangulation of evidence and thematic analyses yielded descriptions of critical ingredients as well as the missing links between housing projects governance and delivery. Overall, this thesis offers a tool towards adoption of effective project governance practices for planning, implementation and management of housing project in South Africa and beyond.

Supervisor: Prof T Gumbo
Co-supervisor: Prof IP Musonda

Motjoadi, Vinny Electrical and Electronic Engineering **(PhD)**

Vinny Motjoadi has been employed as lecturer in the Academic Development Centre at the University of Johannesburg since 2009. He holds an MTech in Engineering Management, a BTech in Operations Management, a National Diploma and BTech in Chemical Engineering, and an Enterprise Resource Planning (ERP) Certificate from the University of Johannesburg. Previously, he was a process technician at Bull Brand South Africa. His primary research areas include distributed and power generation, renewable energy technologies and policies, power systems simulation, modelling and reliability, grid integration, photovoltaics, microgrids optimisation, and chemical engineering processes.

The candidate presented an innovative framework aimed at regulating the implementation of renewable energy-based microgrids in rural communities. The framework addresses the critical issue of household affordability, considering the existing research gap concerning electricity access for sustainable rural development in Sub-Saharan countries, particularly in South Africa. The study included three case studies of hybrid microgrid designs conducted in remote areas, each comprising 100 households. The selection of the optimal microgrid system architecture is based on several key factors. The outcomes are formulated and assessed using a six-step policy analysis method. The findings reveal that the hybrid microgrid architecture yields an average savings of 92.63%. Moreover, it is found that 1.4% of the total cost (including initial investment capital and operational expenses) for deploying hybrid microgrids in these communities can be covered within one year of microgrid operation. The candidate has published one journal article, six conference papers and one book chapter from his research.

Supervisor: Prof PN Bokoro

Ncube, Pauline Chemical Engineering **(PhD)**

Pauline Ncube holds a BSc (Hons) in Applied Chemistry which she obtained from the National University of Science and Technology (NUST) in Zimbabwe. She also studied BTech in Pulp and Paper Technology at the Durban University of Technology on a p/time basis, while working at Kadoma Paper Mills (Zimbabwe). Ms Ncube joined the University of Johannesburg in 2014 to pursue MTech in Chemical Engineering on p/time and graduated in 2017. For this qualification, her research was based on the utilization of Moringa oleifera seed in Water treatment. She then enrolled for a PhD in 2018, in the same institution.

In her Ph.D. research, Ms Ncube investigated the degradation of anti-retroviral drugs and endocrine-disrupting chemicals in wastewater using heterogeneous photocatalytic and advanced oxidation degradation processes. She employed the UV/TiO2/H2O2 hybrid process and synthesized mixed-phase TiO2(anatase/rutile) to enhance visible light utilization. Ms Ncube was able to demonstrate a reduced catalyst band gap and extended absorption in the visible region. In addition, the synthesized catalyst showed great potential for reuse multiple times. Above 80% removal of all the compounds studied was achieved in simulated samples, indicating the effectiveness of the UV/TiO2/H2O2. The technical concept developed in this study has the potential for application in water and wastewater treatment. The findings of this study resulted in one publication peer-reviewed journal and two manuscripts under review. The results of this study were also presented at two international conferences and an abstract was published in the book of abstracts of the conference proceedings.

Supervisor: Prof F Ntuli
Co-Supervisors: Prof C Zvinowanda & Prof M Belaid

Paepae, Thulane Electrical and Electronic Engineering **(PhD)**

Thulane Paepae holds a BSc and an MSc in Engineering from the University of Johannesburg (UJ). He has been an engineering mathematics lecturer at UJ since 2016. Prior to this appointment, he was a junior process engineer at Air Products South Africa. His research interests include machine learning, process monitoring and optimisation, water quality monitoring, electricity theft detection, surge arrester monitoring, air pollution forecasting, and virtual sensing.

In this thesis, the candidate proposed a novel data-driven concept for water quality monitoring known as virtual sensing. This approach addresses the limitations associated with high-frequency monitoring of various water quality variables by providing a reliable alternative for estimating these variables through data-driven methods. The thesis focused on formalising the virtual sensing concept through creating specification books, establishing qualitative cost models for water quality monitoring systems, examining the effects of different data scaling and missing value imputation methods, and evaluating data augmentation and hyperparameter optimisation on the predictive accuracy of nutrient concentrations. To test and validate the effectiveness of this concept, publicly available water quality data from two catchments with different land uses were utilised. The predictive performance, as measured by the coefficient of determination, varied between 86% in the urban catchment and 97% in the rural catchment. Three articles have been published in high impact journals.

Supervisor: Prof PN Bokoro
Co-supervisor: Prof K Kyamakya

Ralengole, Galeboe Chemical Engineering **(PhD)**

Galeboe Ralengole emanates from a village called Monyakeng near Welkom in the Free State Province. He earned a BTech in Chemical Engineering from CPUT in 2003 and a Master's in Chemical Engineering from VUT in 2009. He has held a number of engineering and operations roles at various organisations in Oil and Gas industry and, currently employed at Afrox as Head of Bulk Production and Onsite Services. He is a highly experienced plant operations and performance manager with a proven track record in delivering short-term and long-term strategy targets for performance improvement, reliability, process automation, and operational excellence.

The increasing demand for liquid fuels and chemical feedstocks with wide carbon number distribution are presently achieved through the Fischer-Tropsch Synthesis (FTS). However, one of the challenges that FTS has is that it emits large quantities of carbon dioxide gas leading to the global warming phenomenon and climate change. Even though a variety of strategies are being investigated to reduce CO2 emissions into the atmosphere and in particular that there have been more studies looking into the hydrogenation of carbon dioxide to fuels, this work significantly adds to the body of knowledge in the fields of catalysis and modified Fischer-Tropsch synthesis. This study has shown that unpromoted ruthenium-based catalysts produce exclusively methane, however, once promoted with potassium, small amounts of C2+ hydrocarbons start to form. Consequently, the findings of this research thesis represent a great possibility towards development of new catalysts and processes aiming to convert CO2 into useful products.

Supervisor: Dr PR Khangale
Co-supervisor: Prof K Jalama

Saveca, John Electrical and Electronic Engineering **(PhD)**

John Saveca is an Electrical Engineering Technician at the Passenger Rail Agency of South Africa (PRASA). Currently, he is a Project Manager for the 3 KV DC Traction Substations Project in PRASA's Gauteng Region Rail Infrastructure Revival Program. He has ten years of experience within the rail transportation industry, which started in 2013 at TRANSNET ENGINEERING. He holds a National Diploma in Electrical Engineering from Vaal University of Technology, a Bachelor of Technology degree, and a Master of Technology (cum laude) degree in Electrical Engineering, both from the University of South Africa.

With environmental issues, an everyday increase in electric power demand, and a decrease in potential fossil fuels, there is a significant amount of energy held within the ocean's motions. In his research, he presented two methods to design and optimize the ocean wave energy converter system to solve the abovementioned problems, based on Machine Learning and Evolutionary Algorithms. The developed methods were; A Hybrid Multi-Objective Optimization Algorithm based on NonDominated Sorting and Crowding Distance algorithm and, A Machine Learning and Particle Swarm, Inspired Success History Based Adaptive Multi-Objective Differential Evolution Algorithm. After results analyses, the study showed that the developed methods achieved better performance on the WEC system optimization. The study also revealed that Machine Learning and Evolutionary Algorithms enhanced energy conversion efficiency in WEC devices. The study further revealed that the incorporation of multiple individual algorithms into a hybrid algorithm achieves better results in solving real-world optimization problems.

Supervisor: Prof Y Sun
Co-Supervisor: Prof Z Wang

Honorary Doctor of Philosophy *(honoris causa)*

Huang, Wei

Honorary Doctor of Philosophy *(honoris causa)*

Professor Wei Huang, a distinguished scholar and scientist, has made significant contributions to the fields of organic optoelectronics and flexible electronics. He has received numerous accolades and honours throughout his career, highlighting his exceptional achievements. Born in Hebei, China, Professor Huang's educational journey began at Peking University, where he earned his BSc, MSc, and PhD degrees in Chemistry.

Prof Wei Huang embarked on a remarkable professional career that included teaching Physical Chemistry at Peking University and conducting postdoctoral research at the National University of Singapore (NUS). Professor Huang played a pivotal role in the establishment of the Institute of Materials Research and Engineering (IMRE).

His academic journey continued as he joined Fudan University as a Chair Professor in 2001, where he founded and chaired the Institute of Advanced Materials (IAM). He initiated a platform

for advanced materials research at Fudan University, contributing significantly to technology innovation and talent development in the field.

Professor Huang's leadership extended to Nanjing University of Posts and Telecommunications (NUPT), where he served as Deputy President. During this period, he initiated the Institute of Advanced Materials (IAM) and the Key Laboratory for Organic Electronics and Information Displays (KLOEID). During this period, he was elected to the Chinese Academy of Sciences (CAS). In July 2012, he became the President of Nanjing Tech University (NanjingTech) and founded the Key Laboratory of Flexible Electronics (KLOFE) and the Institute of Advanced Materials (IAM). He further expanded his influence through the establishment of research centers and initiatives, such as the International Research Centre of Flexible Electronics (CoFE) and the Joint International Laboratory of Flexible Electronics (LoFE). Professor Huang's dedication to innovation culminated in the creation of "The Discipline Innovative Engineering Plan on Flexible Electronics" in October 2016.

His commitment to research excellence is exemplified by his impressive publication record, including over 900 papers in esteemed journals such as *Science*, *Nature*, and *Advanced Materials*. Professor Huang's research has garnered over

100,000 citations (ISI Web of Knowledge) and he has an impressive h-index of more than 160, cementing his status as one of the most cited researchers in the field of material science and chemistry.

In addition to his research contributions, Professor Huang has held editorial positions in top international journals and has secured over 360 patents in the USA, Singapore, and China.

Notably, Professor Huang's innovative work includes the development of a novel p–n semiconducting copolymerization strategy, which has advanced the efficiency and performance of organic semiconductors. His contributions have expanded the application of organic semiconductors to fields such as organic laser technology, bio-sensing, information storage, and photoelectric conversion.

Throughout his career, Professor Huang has received recognition and praise from esteemed colleagues, including Nobel Laureate Dr Alan J. Heeger, who commended his groundbreaking contributions to polymer light-emitting diodes (PLEDs) and plastic electronics.

Beyond his scientific endeavours, Professor Huang has been dedicated to social service, actively participating in over 60 social organizations and holding leadership positions in various engineering and academic committees. He has delivered over 160 keynote, plenary, and invited talks at international conferences, fostering collaboration and knowledge exchange on a global scale.

As an educator, Professor Huang advocates for a bottom-up approach to education and has published a book outlining principles for establishing a first-class international university. He emphasizes the importance of ambition, diligence, teamwork, and other attributes in student development.

Professor Huang's close ties with the University of Johannesburg (UJ) have resulted in significant collaborations, including the establishment of the UJ-NanjingTech Confucius Institute and joint research efforts, including the Centre for Africa China Studies. His dedication to education, research, and international collaboration aligns with UJ's values of imagination, conversation, regeneration, and ethical foundation.

In conclusion, Professor Wei Huang's exceptional contributions to the fields of organic optoelectronics, flexible electronics, and

materials science, coupled with his commitment to education and global collaboration, make him a deserving recipient of this honorary degree. His impact on scientific research, technological innovation, and the education of future generations is both profound and enduring. Professor Huang's legacy continues to shape the landscape of materials science and engineering, inspiring students and researchers worldwide.

Join UJ Alumni Connect

Alumni connect allows you to re-connect with UJ graduates and use the trusted UJ community to find a mentor or to offer mentorship.

Visit: www.ujalumni.co.za

Digital Certificates and Qualification Verification

Digital certificates allows you to:

- View your qualification certificate/s
- Share your qualification documents with employers / Third Parties
- Order reprints of your certificate/s, Academic record or Transcript Supplement

Employers and Third Parties can connect with alumni to:

- Verify their qualification
- View their qualification documents

Qualification verification between an alumni and third parties are at no cost.

Visit: https://digitalcertificates.uj.ac.za

E-Academic Record

Get your E-Academic record at no cost.

Visit: www.uj.ac.za/academic-records

The Future
Reimagined

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.