RESEARCH PRODUCTIVITY 2019

2019 List of Research Publications

**Book and Book Chapter**
None

**Keynote and Invited Presentations**

DHET Accredited Journal Papers


Non-DHET Accredited Journal Paper


Refereed Conference Proceedings

Kabulo Loji, Innocent Davidson and Remy Tiako, “Voltage Profile and Power Losses Analysis on a Modified IEEE 9-Bus System with PV Penetration at the Distribution


Other Research Output (Non-Refereed Conference Proceedings)

None

Higher Degrees Graduated

Master of Engineering

Madonsela, Bhekinkosi, B.Tech. 
Dissertation: Integrating Power Transformer Protection scheme and Telecontrol RTU
Supervisor: Prof IE Davidson and Dr C. Mulangu.Sewchurran.

Electrical Engineering

Nkonyane, Mfanansibili Stanley, B.Tech. 
Supervisor: Dr E E Ojo and Dr B Rigby.

Thakoordeen, R.R., B.Tech.
Supervisor: Dr. Evans Ojo

Higher Degrees Graduated in other Institutions (UKZN)

Doctor of Philosophy (2019)

None

Master of Science in Engineering (2019)

Goqo, Zama, BScEng (UCT) 
Dissertation: Design of a Micro-converter for Rooftop PV Application in a Low-Voltage Distribution Network

Electrical Engineering
Mukwekwe, Leonard Kwamuchaguma, BScEng (UNAM)
Dissertation: Analysis of optimal PV penetration levels with time-variant loads in power distribution networks
Supervisor: Dr Rudy Capernum and Prof IE Davidson

Higher Degrees under Examination

Master of Engineering

Leholo, Sempe, BTech, Electrical Engineering
Supervisor: Prof P A Owolawi and Mr. K T Akindeji

Higher Degrees under Supervision

Doctor of Engineering

Gumede, Makhosonke, BTech, MEng, Electrical Engineering
Dissertation: The extraction of power and fresh water from the ocean off the coast of KZN utilizing ocean thermal energy conversion (OTEC) techniques (2015)
Supervisor: Dr P Naidoo and Prof M Walker

Adebiyi, Abayomi, BEng (Hons), MEng, Electrical Engineering
Supervisor(s): Assoc. Professor Ian Lazarus, Assoc. Professor Ashkay Saha and Dr Evans Ojo

Buraimoh, Elutunji, BTech (LAUTECH), MScEng (OAU), Electrical Engineering
Supervisor: Prof IE Davidson

Dakora, Jonas Don-Yeele, BTech (CPUT), MEng (DUT) Electrical Engineering
Supervisors: Professor IE Davidson and Dr Gulshan Sharma

Akinyemi, Ayodeji Stephen, OND, HND, PGD, MSc (UCT) .........................................................Electrical Engineering
Dissertation: Voltage rise mitigation at the Point of Common Coupling (PCC) of large Renewable Distributed Generation (RDG) and Distribution Network
Supervisor(s): Prof IE Davidson and Prof Olorunfemi Ojo

Madonsela, Bhekinkosi, BTech MEng (DUT) ..........................................................Electrical Engineering
Dissertation: Evaluating the Communications, Navigation and DSurveillance (CNS) Capabilities for the Future Air Traffic Controlling Systems
Supervisor: Prof IE Davidson and Dr C. Mulangu.

Rampith, Viren, BTech, M Tech, Electrical Engineering
Supervisor: Prof IE Davidson
**Master of Engineering**

Shezi, Siphehile Brian, *BTech Electrical Engineering*
Dissertation: The study of the upgrade and improvement of power electronics protection system for locomotives. (2019)
Supervisor: Dr Evans Ojo

Sewnawain, Shikhar, *BTech, Electrical Engineering*
Supervisor: Dr. Onunka and Mr. K T Akindeji

Pillay, Caleb Jordache, *BTech, Electrical Engineering*
Supervisor: Dr M Kabeya and Prof IE Davidson

Nguefack, Louis, *BTech, Electrical Engineering*
Supervisor: Prof IE Davidson and Mr Abayomi Adebiyi

Ntombela, Mlungisi Eric, *BTech Electrical Engineering*
Dissertation: Algorithm for power losses and efficiency evaluation for power distribution systems. (2020)
Supervisor: Dr M Kabeya

Nel, Jacques j, *BTech Electrical Engineering*
Dissertation: Designing off-grid hybrid renewable power generation system for rural electrification. (2020)
Supervisor: Dr Evans Ojo and Mr Clarence Leaoneka

Moma, Christophe, *BTech Electrical Engineering*
Dissertation: Modern power electronic technology for the grid integration of renewable energy sources. (2019)
Supervisor: Dr M Kabeya

Mhlongo, Sanele P, *BTech, Electrical Engineering*
Supervisor: Prof IE Davidson

Masikane, Sboniso B, *BTech, Electrical Engineering*
Supervisor: Dr. G Sharma and Mr. K T Akindeji

Estrice, Milton, *BTech, Electrical Engineering*
Dissertation: Investigating the mitigation technique of frequency control for load stability of interconnected power system. (2019)
Supervisor: Dr. G Sharma and Mr. K T Akindeji

Ayar, Prenushka, *BTech Electrical Engineering*
Dissertation: Investigation and Mitigation of Temporary Overvoltage caused by Filters, Correcting Harmonics Produced by Motor Drives. (2019)
Supervisor: Dr. Tunji Akinrinde
Goolam, Hoosen Nadneem, BTech Electrical Engineering
Supervisor: Dr Evans Ojo and Prof Nelson Ijumba

Khumalo, Simanga Wonder, BTech Electrical Engineering
Dissertation: Investigating the impact of induction motor starting techniques on power quality. (2020)
Supervisor: Dr M Kabeya and Dr B Rigby

Buthelezi, Kwanele M, BTech Electrical Engineering
Supervisor: Dr M Kabeya and Dr B Rigby

Magenuka, Kenneth Thand’uxolo K, B Tech Electrical Engineering
Dissertation: Kernel estimation modelling and optimization of hybrid power system for a typical South African rural area
Supervisor: Dr M Kabeya and Mr. K T Akindeji

Mtukushe, Namhla Faith, B Tech Electrical Engineering
Dissertation: The analytical study on the establishment of a tidal power plant in South Africa. (2019)
Supervisor: Dr Evans Ojo

Ndlela, Nomihla W, B Tech, Electrical Engineering
Supervisor: Prof IE Davidson

Joshi, Milan, B Tech, Electrical Engineering
Dissertation: Load frequency control of a hydro dominating interconnected power system. (2019)
Supervisor: Dr. Sharma and Prof IE Davidson

Tshikomba, Salome Busisiwe Jiyane, B Tech BSc (Hons), Electrical Engineering
Supervisor: Prof IE Davidson and Dr Evans Ojo

Gwatidzo, Ngoni, B Tech, Electrical Engineering
Supervisor: Prof IE Davidson

Zulu, Musawenkosi L, B Tech, Electrical Engineering
Supervisor: Dr Evans Ojo

Khumalo, Nkosinathi Emmanuel, B Tech, Electrical Engineering
Dissertation: Optimal sizing and control of lithium-ion battery energy storage system to be used for maximum demand peak shaving, peak energy utilisation and peak energy export. (2018)
Supervisor: Prof IE Davidson and Dr M Kabeya

Malanda, Sindisiwe Cindy, B Tech, Electrical Engineering
Supervisor: Prof IE Davidson and Dr Grain Adam.

Leholo, Sempe, BTech, Electrical Engineering
Supervisor: Prof P A Owolawi and Mr. K T Akindeji

Bahara, R.K., BTech, Electrical Engineering
Supervisor: Dr. Evans Ojo

Community Service Activities


[3] DUT-Eskom EPPEI Workshop, Presenter: Prof IE Davidson: "DUT-Eskom: Opportunities for Collaboration and Research", Time: 09:00 – 12:00 hours, Wed: 6th June 2019, Venue: EPE Boardroom, Level 3, S7, Steve Biko Campus, Durban University of Technology,


[10] Mr. K T Akindeji: External examiner for Design Project III (MUT)


[13] Professor IE Davidson, External Examiner for Masters and Doctoral Theses: CPUT, UCT, UP, UJ, TUT.


Dr. G Sharma: Member of Technical Program Committee of International Conference of Computing, Communications & Cyber Security (IC4S), Springer, 12-13th October 2019, Chandigarh, India.

Dr. G Sharma: Marking of P1 & P2 Assessment and WIL Industrial visits.

Dr. M Kabeya: Conference Reviewer: SAUPEC


Research Grants

1. Principal Investigator: Prof IE Davidson: Eskom TESP Grant (Smart Grids): R70 000.00
2. Principal Investigator: Prof IE Davidson: Eskom TESP Grant (HVDC): R70 000.00
3. Principal Investigator: Prof IE Davidson: Eskom TESP Grant (Centre for RTPPS): R50 000.00
4. Principal Investigator: Mr Timothy Akindeji: Eskom TESP Grant (Rural Rectification): R90 000.00
5. Principal Investigator: Dr Musasa Kabeya: Eskom TESP Grant: R50 000.00
6. Principal Investigator: Mr. Kabula Loji (Autonomous off-grid PV energy system studies): R30 000.00
7. Project Leader / Principal Investigator: Prof IE Davidson: Research and Development Programmes in Space Science and Technology (Satellite Communication and Navigation), funded by the Department of Science and Technology (DST), South Africa. Project Grant: 2018 – 2019: R1 595 000.00
9. DHET-Accredited Outputs Research Incentive Award: Prof IE Davidson: Research Rewards for Research: R171 105.98
10. Durban University of Technology Research Award: Prof IE Davidson: Top Faculty Researcher of the Year Award (Platinum Category): R40 000.00
11. DUT Conference Travel Grant: Prof IE Davidson, 2019 Conference Travel Award: R35 966.15
12. DUT Conference Travel Grant: Elutunji Buraimoh, DEng Student, 2019 Conference Travel Award: R23999.79
13. DUT Conference Travel Grant: Abayomi Adebiyi, DEng Student, 2019 Conference Travel Award: R50316.55
14. Department of Science and Technology, South Africa: Prof IE Davidson, Space Science Research Grant (2018 – 2019): R1 595 000.00

Honours, Awards and Recognitions

2019: Durban University of Technology Top Faculty Researcher of the Year Award (Platinum Category)
Recipient of the award of "Top Faculty Researcher of the Year (Platinum Category)" at the Durban University of Technology's Annual Research & Innovation Awards (based on 2018 research outputs), Hilton Hotel, 12-14 Walnut Rd, Durban Central, Durban, 4001, 22nd Nov 2019. Prize Money: R40000:00