## **WEBSITE PROFILE**

Division / Department / Faculty / Unit	Electrical Engineering
Job Designation	Professor & Head
Title (Mr, Ms, Mrs, Dr, Prof)	Prof
Initials	С
Preferred Name	Cuthbert Nyamupa
Surname	Nyamupangedengu
Roles & Responsibilities	Head of Department
(Max 5 lines)	
Professional Registration	SAIEE, IEEE, Cigre
High resolution photo – link provided	
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Modules	High Voltage Engineering 4 AD – EPHVE4A
Brief Bio	Currently a professor and head of the Electrical Engineering Department at Vaal University of Technology, South Africa. Prior to the current position, he has been an associate professor responsible for the high voltage research programme at Wits University. He continues as an honourary associate professor at Wits University. Cuthbert earned the electrical engineering Bachelor of Technology honours degree at the University of Zimbabwe in 1994. He was awarded the rest of his academic qualifications; PhD (Eng), MSc (Eng) (with distinction), PGDip(HE) (with distinction) at the University of the Witwatersrand. Cuthbert is an established researcher and was

awarded the NRF C2 rating in 2021. He has supervised to graduation more than 20 postgraduate students and published to-date 82 research articles in peer reviewed journals and conference proceedings.

He is also an ETDP-SETA accredited assessor and facilitator attained in 2021. He served as an energy expert contributor to a study for the EWSETA undertaken by the University of Witwatersrand's Centre for Researching Education and Labour (Wits REAL). In 2018, he served as an energy expert consultant in a study for the Department of Public Enterprises undertaken by Wits Enterprises titled; Possible future energy markets in South Africa and the rest of Africa: Eskom's future business opportunities. Before moving into the academia, I spent 10 years working in various capacities up to Chief Engineer in a power utility.

Currently is an elected council member of the SAIEE. He previous served the organisation as an inaugural committee member of the SAIEE Central Gauteng Center. From 2012 to 2018, he served as the Cigre Study Committee D1 representative of the Cigre Southern Africa National Committee.

In addition to research and teaching expertise in the discipline of high voltage engineering, Cuthbert has a growing interest in engineering education research which was catalysed by completion of the PGDip(HE) at Wits University in 2022. A number of publications in that regard are in the pipeline.

## **SECTION: B**

Research Fields	High Voltage Engineering: Partial discharge in insulation, nanodielectrics  Engineering education
DHET Accredited Peer-reviewed journal articles	<ol> <li>M.K. Mahmood, C. Nyamupangedengu, C. Gomes and A. Smith, "Reducing Hydrophobic Characteristics of Kraft Paper Insulation by Reinforcing with Surface Modified Rutile-TO<sub>2</sub> Nanoparticles", in IEEE Access, vol. 10, pp. 102237-102246, 2022 doi: 10.1109/ACCESS.2022.3208596</li> <li>Carl P. Wolmarans, Cuthbert Nyamupangedengu, Carina Schumann, Neil J. Coville and Marcelo M. F. Saba; The Influence of Diethylaniline and Toluene on the Streamer Propagation in Cyclohexane between a Point-Plane Gap under Positive Impulse Voltage Stress, Energies 2022, 15, 4861. https://doi.org/10.3390/en15134861</li> <li>Mohammed Mahmood Katun, Rudo Kadzutu-Sithole, Nosipho Moloto, Cuthbert Nyamupangedengu, and Chandima Gomes; Improving</li> </ol>
	Thermal Stability and Hydrophobicity of Rutile-TiO2 Nanoparticles for Oil-Impregnated Paper Application, MDPI Energies 2021, 14, 7964. https://doi.org/10.3390/en14237964  4. T. Venge, C. Nyamupangedengu, "Analysis of Cavity PD Characteristics' Sensitivity to Changes in the Supply Voltage

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- 11. S. Kaaiye and C. Nyamupangedengu, "Comparative study of AC and DC inclined plane tests on silicone rubber (SiR) insulation", IET High Voltage, Volume 2, Issue 2, p. 119 –128, 2017.
- 12. D. Fynnes-Clinton and C. Nyamupangedengu, "Partial Discharge Characterization of Cross-Linked Polyethylene Medium Voltage Power Cable Termination Defects at Very Low Frequency (0.1 Hz) and Power Frequency Test Voltages", IEEE Electrical Insulation Magazine, Issue 3, July-August 2016.
- 13. M.M. Tshivhilinge and **C. Nyamupangedengu**, "Effect of surface discharges on lightning impulse breakdown voltage of oil-impregnated pressboard in power transformers", SAIEE Africa Research Journal, Vol 107 (1), pp 38-44, March 2016.
- 14. **C. Nyamupangedengu** and D. Cornish "Time evolution phenomena of electrical tree partial discharges in Magnesia, Silica and Alumina epoxy nanocomposites", IEEE Transactions on Dielectrics and Electrical Insulation, Vol. 23, No. 1, pp 85-94, February 2016.

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- Sitole S., Nyamupangedengu C. (2020) Comparing Electrical Tree Inception in Epoxy and Polyethylene Using Fowler-Nordheim Based Model. In: Németh B. (eds) Proceedings of the 21<sup>st</sup> International Symposium on High Voltage Engineering. ISH 2019. Lecture Notes in Electrical Engineering, vol 599. Springer, Cham,
- T. Venge and C. Nyamupangedengu, "A Review of Test Voltages Used in Partial Discharge Measurements," 2021 IEEE AFRICON, 2021, pp. 1-6, doi: 10.1109/AFRICON51333.2021.9570871.
- Michiel Postema, Satyajit Phadke, Anthony Novell, Rustem Uzbekov, Cuthbert Nyamupangedengu, Mériém Anouti, Ayache Bouakaz," Ultrasonic identification technique in recycling of lithium-ion batteries", IEEE AFRICON, Accra Ghana 2019
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- 27. Johannes Rickmann, Dragan Tabakovic, **Cuthbert Nyamupangedengu**, Nishanth Parus, Dong Wu and Ricardo Diaz,
  "Atmospheric and Altitude Correction Methods for Air Gaps and Clean Insulators Corrections for Short Gaps Under DC and Application Difficulties Part 1", Proceedings of the 20th International Symposium on High Voltage Engineering (ISH 2017) Buenos Aires, Argentina, 2017.
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- 41. D. Cornish & **C. Nyamupangedengu**, "*Time evolution phenomena of electrical tree partial discharges in 5 wt% MgO, Alumina & Silica epoxy nanocomposites*", IEEE Annual Report Conference on Electrical Insulation & Dielectric Phenomena (CEIDP), October 2014, Des Moines, Iowa, USA.
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- 49. **C. Nyamupangedengu** and J.J Walker, "Temperature Dependency of Dielectric Loss Measurements at 0.1Hz in Medium Voltage Power Cables", 8th International Conference on Insulated Power Cables (JiCABLE), Paris, 2011.
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Book Chapters	None

