

Contact Information



Head of Department:

Professor Innocent E A Davidson
Pr Eng, C Eng, PhD, *Fellow IET, Fellow SAIEE*

Tel: 031 373 2062

Fax: 031 373 2063

Email: InnocentD@dut.ac.za

Location: Steve Biko Campus, Block S7
Level 3

Professor Innocent Ewean Davidson, (M'92, SM'02), IEEE, USA; *Fellow*, Institute of Engineering and Technology (FIET), UK; *Fellow*, South African Institute of Electrical Engineers (SAIEE); *Chartered Engineer* (C Eng.), UK; registered *Professional Engineer* (P Eng.), Engineering Council of South Africa. He received the Bachelor of Engineering, *BSc (Eng.)* with *Honours*, Masters of Engineering, *MSc (Eng.)* degrees in Electrical Engineering, University of Ilorin, 1984 and 1987; Doctor of Philosophy, *PhD* in Electrical Engineering, University of Cape Town, 1998; Post-graduate Diploma in Business Management, Graduate School of Business, University of KwaZulu-Natal, 2004; Associate Certificate, Sustainable Energy Management (*SEMACE*), British Columbia Institute of Technology, BC, Canada, 2011, a program sponsored by Canada's Electric Utility, *BC Hydro*. He has over 30 years of experience in engineering and technology, research and implementation, industry, university teaching and academic leadership, consulting and application. Dr Davidson joined Durban University of Technology in 2016. He is a Full Professor and the Chair, Department of Electrical Power Engineering. From 1987-1992, he was a Lecturer at the University of Ilorin and Federal University of Technology, Akure. He was *Engineering Inspector* and *Project Manager*, Rainbow Energy Project at EASIGAS (Pty) Ltd, Cape Town (1994-1995). During the period 1994-2006, he served as a Sessional Lecturer, University of Cape Town (UCT); Lecturer, Cape Peninsula University of Technology (CPUT); Lecturer, Vaal University of Technology (VUT); Senior Lecturer, University of Pretoria and Senior Lecturer, Natal University (University of KwaZulu-Natal). He was a *Visiting Professor* (2005-2006), Powertech Labs Inc., Surrey BC, Canada, a world leading consortium in clean energy technologies, independent testing services, power system solutions and smart utility services; *Energy Consultant* in Surrey, BC, Canada (2007-2012), implementing energy efficiency (electricity/gas) measures, British Columbia provincial government's mandate on *Climate Change*. He was *Associate Professor* of Electrical Engineering and *Research Coordinator*, Faculty of Engineering & Information Technology, University of Namibia (2012-2014) and *Project Engineer* for the *Benguela Community-UNAM Wind-Power Project*, Luderitz, Namibia, a project funded by the European Union. From 2014-2016, he was *Director/EPPEI Coordinator*, Eskom Centre of Excellence in High Voltage DC Engineering, University of KwaZulu-Natal. His conducts research in: "*Grid Integration of RE using Smart Technologies and Innovation for Smart Cities*". Smart-Cities innovation derives from previous work in Surrey, BC under Sustainable Energy Management Program (BCIT) in collaboration with BC Hydro PowerSmart Program. Smart City is the sustainable modernisation of a community and its infrastructure using technology, such as: green energy-efficient buildings, smart transportation systems (V2I), smart water and smart grid. The goal of building a smart city is to advance commerce; improve on the quality of life by using technology to improve the efficiency of services and meet residents' needs without compromising the needs of future generations. He is currently involved in the DUT Navigation and Space Science Project. He is the recipient of several local and international research grants. Dr Davidson has demonstrated achievements and practical outcomes of the strategic research he has been conducting in "Grid Integration of Renewable Energy using Power Electronics and High Voltage Direct Current Technologies", which in the last 4 years has graduated 30 PhD/MSc students and published over 120 papers in accredited journals and conference proceedings. Since 1994 Dr Davidson has consulted with industry: including Contract Research Grant #11003799 ("*Spatial Modelling of a Photovoltaic Generator for Localised Load Management*") funded by ESKOM and THRIP; Royal Academy of Engineering, UK Award for the project: "Quality Engineering Education through University-Industry Partnerships in Eastern & Southern Africa", in collaboration with The University of Namibia, The University of Nairobi, The University of Rwanda, Cambridge University, UK. He has developed and presented invited industry-focussed courses to the South Africa's Electricity Industry. Prof Davidson has won accolades for his research work and accomplishments. He was a co-recipient of the Best Paper Award and 2001 Kinslow Research Award, Tennessee Tech. University, USA, for the technical paper: "O. Ojo and I. E. Davidson, "PWM-VSI Inverter Assisted Stand-alone Dual Stator Winding Induction Generator", *IEEE Transactions on Industry Applications*, Vol. 36, No.6, pp 1604-1611, Nov/Dec. 2000. He has been a Guest Writer for *IEEE Power and Energy* as an internationally recognized expert on *Africa's Electric Power System: "Energizing Africa's Emerging Economy"*, *IEEE Power and Energy*, Vol. 3, No 4, July/August 2005. Prof Davidson was a recipient of the Best Paper Award at the *International Conference on Renewable and Energy Research and Applications Conference*, Birmingham, UK, 20-22 Nov 2016 for the paper titled: "Harmonic Distortion of LCC-HVDC and VSC-HVDC Link in Eskom's Cahora Bassa HVDC Scheme by Oluwafemi Oni, Innocent Davidson. He was elected IET Fellow due to his creativity and personal responsibility for significant technological innovation and achievement in engineering. It affirms his superior responsibility, leadership and contributions to the field of electrical engineering. He also received the Best Student Paper Award for the technical paper: 'S. Sewchurran, I.E. Davidson and J.O Ojo', "Intelligent Disbursement and Impact Analysis of DG on Distribution Networks to Mitigate SA Energy Shortages", at the Clemson University Power Systems Conference, 8-11 March 2016, Clemson University, Clemson, SC, USA. Prof. Davidson has supervised PhD/MSc students and is the author/co-author of over 220 peer-refereed journal/conference papers, scientific articles and technical reports. He is a member of the Western Canada Group of Chartered Engineers (WCGCE); the Institute of Engineering and Technology (IET Canada) British Columbia Chapter; member, IEEE Collaborate Communities on Smart Cities and IEEE (South Africa Chapter).