



AN ACADEMIC OF NOTE

Charles was born and bred in Durban, KZN and matriculated from Vukuzakhe High School, one of the oldest schools in Umlazi Township. Being raised by a single parent after his father's passing, he was forced to terminate his studies and look for employment. He found employment with Unilever SA (Pty) Ltd in Maydon Wharf who gave him an opportunity to pursue studies in Chemical Engineering at MUT, which was known as Mangosuthu Technikon at the time.

Phiwe Charles Jiyane - Class of '83

During Charles' stay at MUT he was actively involved in sports and was elected to the SRC as the chairperson of the Entertainment Committee. In this position, he served for two terms under the presidency of Sifiso Glenford Nzimande, the current General Manager Operations & Projects at Transnet, and later Themba Richard Mthembu, the former MEC for Agriculture and Rural Development in KZN.

Charles vividly remembers hosting the first-ever Fashion Show that was to be a 'curtain raiser' for the Miss and Mr Mangosuthu Technikon pageant in 1984. "The show was sponsored by giants in the retail industry at the time - the likes of Sales House, Bee Gee and Casanova Durban - and the event was a huge success. Every Friday we would hire a film projector and movies from video shops around Durban as part of the student entertainment programme. Bozzoli Hall would be transformed into a movie theatre, to the delight of around 200 students."

Charles graduated with the National Diploma in Chemical Engineering from MUT in 1985. He has since completed further studies and is a member of the South African Institute of Chemical Engineers (SAIChE) in RSA and the Institute of Chemical Engineers (IChemE) in UK. His career in the chemical engineering sector dates back to the 80s, spanning both the private sector and higher education. His academic career at MUT started in 1994, first as a contract lecturer and in 1996 as a full-time lecturer in the Department of Chemical Engineering. At MUT he has led and chaired sub-committees within the Faculty of Engineering. As part of his development, in 1999 Charles started participating in collaborative research with the Pollution Research Group (PRG). Between the years 2000 and 2003, he was seconded to the Technology Stations Programme (TSP), an initiative of the South African government through the Department of Science and Technology. In his position

as a Technology Advisor, he was responsible for setting up the Technology Station in Chemicals (TSC), a business unit at MUT, with the purpose of establishing strong links between the university, the chemical industry (SMMEs) and the South African government. During this period, he facilitated the transfer of technology to small businesses in the KZN region and beyond, offering training and technical support whenever needed. He successfully completed a number of projects for SMMEs involved in the manufacturing of products ranging from soaps, detergents and disinfectants to beauty and health care products.

At the beginning of 2003, when the Technology Station was fully functional, Charles went back to teaching. He developed the Physics curriculum, which is part of the bridging programme intended to eliminate the gap and prepare learners to transit seamlessly to university education. Presently, Charles lectures Physics and Chemical Process Design III, administers Chemical Engineering Practicals IV and supervises undergraduate (B.Tech) students in their final-year research projects.

Charles' research interests in Green Technologies and Renewable Energy saw him develop biodiesel processes that exploit second generation feed stock (animal fat, e.g., lard). Amongst his other investigative work, mostly aimed at finding alternative fuels to replace petroleum-based diesel, is his use of an indigenous crop of African origin, *Croton gratissimus*, sourced from the Democratic Republic of Congo (DRC), as feed stock in biodiesel production. This work was reported in his dissertation titled "Optimisation of Biodiesel Production from *Croton gratissimus* Oil" and resulted in the publication of an article titled "Optimisation of *Croton gratissimus* Oil Extraction by n-Hexane and Ethyl Acetate Using Response Surface Methodology" in the Journal of Oleo Science.