**CITATION: DAVID HYMAN FINE**

**Dr David Hyman Fine** was born on 17 September 1942 and grew up in Johannesburg, attending the University of the Witwatersrand from 1960 to 1963.

He graduated with a Bachelor of Science Honours degree in Chemistry in 1964 after which he left to read for his PhD at the University of Leeds in the United Kingdom. Three years later, he graduated with a doctorate in Physical Chemistry, which was conferred in 1967. His doctorate explored thermal explosions and combustion chemistry, which sparked Dr Fine's interest in chemical engineering, fluid dynamics and heat transfer. He went on to work as a post-doctoral fellow, first at Leeds, and then at the University of Winnipeg, before joining the academic faculty of the Chemical Engineering Department of the Massachusetts Institute of Technology, where he ran the Combustion Laboratory. Dr Fine moved to Thermo Electron (now Thermo Fisher) where he worked for 28 years, and where he started his own federally funded research department.

In 2000 he founded his own company, CyTerra, which developed radar and metal detection-based detectors for buried landmines. In 2006 he established GeNO (now called Vero-Biotech) which developed a new inhalable drug for the treatment of pulmonary hypertension. He has been awarded 105 patents in the United States. Widely published and cited, both academically and in the popular press, Dr Fine has published 88 papers focusing on environmental hazards involving carcinogenic compounds, which he identified in foods, beverages, cosmetics, and industrial products.

Dr Fine has made a significant contribution to the scientific understanding of chemical engineering processes, combustion engineering, and air pollution. He pioneered the detection of hazardous levels of nitrosamines in foods, body fluids, and in the factory environment which has important health implications, given that chronic nitrosamine intake is associated with cancers, particularly of the digestive tract.

Dr Fine led the research on the detection of explosive residues, which was used to identify the explosives used in the Lockerbie bombing that brought down the Pan Am plane over Scotland in 1988. His team also developed the first airport sniffers for explosives and narcotics, and thousands of these devices are now used in airports worldwide. In other areas, he helped to develop methods for ultra-high speed gas chromatography.

He worked with a team to develop the first commercial laser hair removal process as well as high-speed instrumentation to detect contaminated bottles in the beverage industry. He combined the concepts of short-range radar and metal detection to create a handheld detector to locate buried land mines, which have been produced on an industrial scale.

His work on detection includes developing a hand-held radar device to see people through multiple layers of concrete or rock. An alumnus and benefactor, Dr David Fine's generosity enabled the establishment of the Angela and David Fine Chair in Innovation at Wits. His philanthropic endeavours have also advanced research and innovation at Leeds University, helping to promote collaboration between our two institutions. Dr Fine strongly believes that that new solutions to old problems can be expedited by having more students and academics work across disciplinary and geographical boundaries.

Dr Fine advocates for the development of cheaper, effective solutions to address the challenges facing Africa. He serves as an exemplary role-model for Wits graduates who aim to translate their scientific research into innovative technologies that advance the public good. It is therefore befitting that the University of the Witwatersrand, Johannesburg, bestows an Honorary Doctorate Degree on Dr David Hyman Fine.