

# New high-tech lab to test performance of synthetic diesel

**High-technology equipment, which is being installed at the University of Pretoria, will provide better insight into the properties and performance of synthetic diesel fuels and the application of such fuels in engines, turbines and other devices.**

A research collaboration between petrochemicals giant Sasol and the departments of Chemistry (Faculty of Natural and Agricultural Sciences) and Chemical Engineering (Faculty of Engineering, Built Environment and Information Technology) at the University of Pretoria has resulted in the commissioning of a new LECO Pegasus 4 comprehensive two-dimensional gas chromatograph, combined with a time-of-flight mass

spectrometer (GCxGC-TOFMS). The acquisition of this equipment was made possible by financial support from Sasol Technology through joint research interest in the chemistry that underpins the physical properties of diesel fuels.

Sasol reports that the study of the flow of substances under various conditions and the physical behaviour of synthetic fuels are important areas related to the company's fuels and lubricants research. The LECO Pegasus 4 GCxGC-TOFMS will enable scientists to make a more detailed analysis of how the more than 100 compounds that make up synthetic diesel fuel contribute to the performance, viscosity and lubricity of these fuels.

The ability to obtain such chemical insight only became feasible through the extreme analytical power of the GCxGC-TOFMS instrument, allowing for the identification and classification

of literally thousands of compounds. The initiative forms part of Sasol's university collaboration initiative, a long-term programme that supports the aims of world-class teaching and research capacity in chemistry and chemical engineering at selected local universities.

The ability to identify specific chemical compounds in complicated mixtures will help the University of Pretoria in other non-petrochemicals research fields, including air and water pollution, forensic toxicology and aroma analysis. In all these areas, the LECO GCxGC-TOFMS will be used in combination with other unique analytical instrumentation and techniques developed at the University's separation science laboratories. [🔗](#)

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