

# 'Applications of Electronic Nose Technology in the Textiles Industry'

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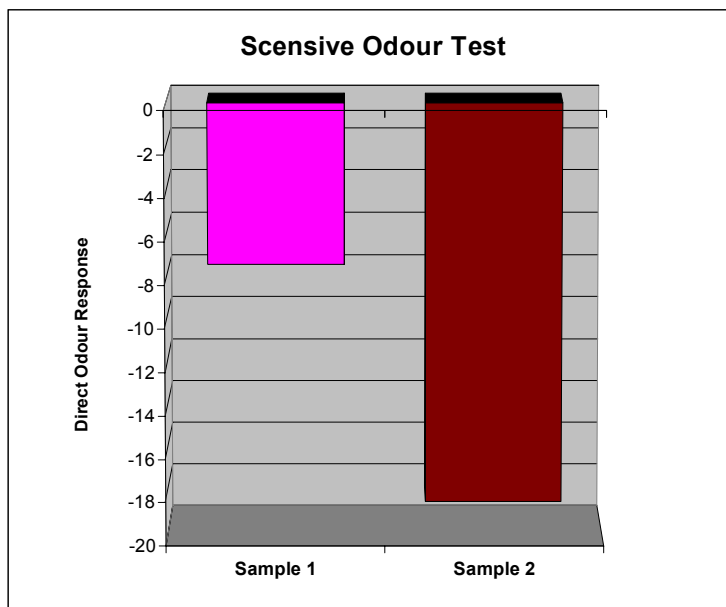
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Electronic nose technology has been available commercially for over 12 years and now is becoming mature with the uptake of specific tests for the direct measurement of anti-odour and anti-microbial capabilities of fabrics for the textile industry. Results are shown below for:

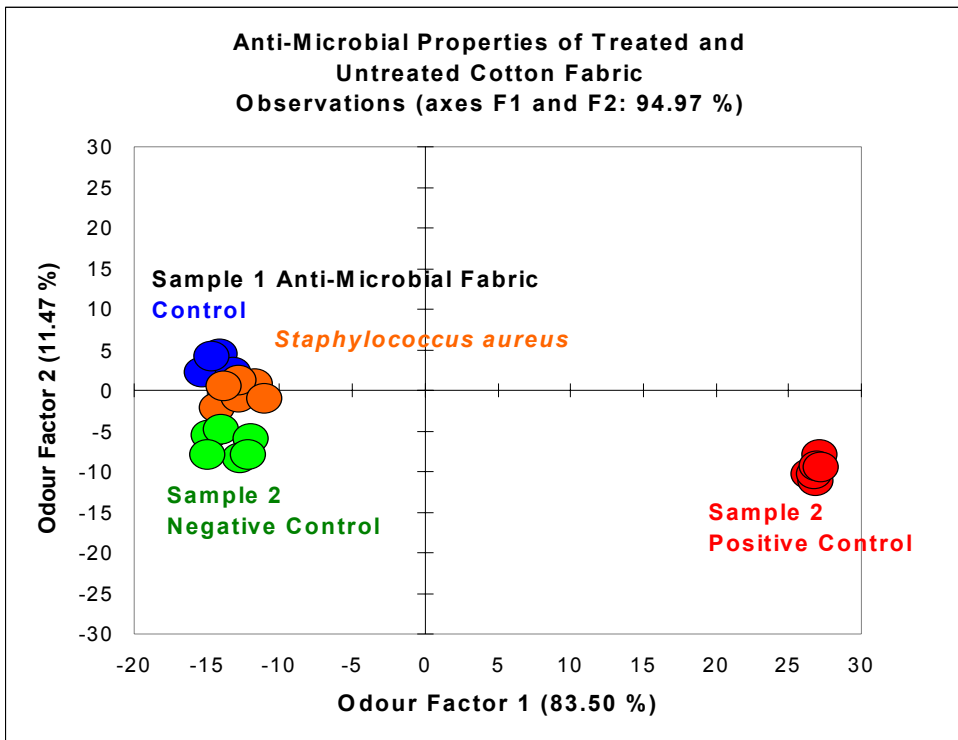
- 1) A new anti-odour test which was specifically commissioned by Courtaulds PLC and developed through a research project in 2007 and which is now being used by a number of manufacturers.
- 2) A new test that measures the anti-microbial and the anti-odour capabilities of fabrics simultaneously which was developed in 2008 with support by a SPARK award from Technitex and the Institute of Materials. Results are shown that clearly indicate both parameters are detected and proofs of anti-microbial capabilities will be given using plate counts of bacteria to confirm the odour measured is of bacterial origin.

These 2 tests, will for the first time, enable the fulfillment of legislation that states for textile product claims, anti-odour and anti-microbial capabilities of fabrics must be scientifically substantiated. Based on these two new laboratory test protocols, dedicated odour software that enables direct measurement of anti-odour capabilities and anti-microbial efficacy will be presented.

Figures 1 and 2 below show the application results.



**Figure 1. Anti-Odour Test on an Anti-Odour Cotton (Sample 1) and a Control Cotton (Sample 2) . The control shows a much higher response to the sensors than the anti-odour cotton.**



**Figure 2. Anti-Bacterial Fabric (Sample 1) and Untreated Cotton Control (Sample 2) Incubated with Sterile LB Broth and *Staphylococcus aureus* Suspension. The smell of the bacteria is reported by the sensors and is clearly different than the control samples and the anti-bacterial samples that all have the same smell and cluster to the left of the plot.**