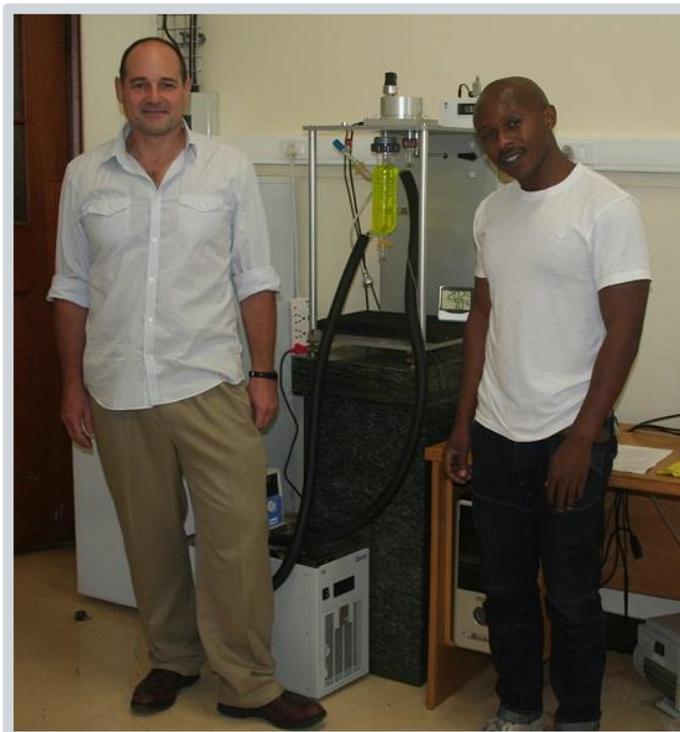


Vapour Sorption by New Crystalline Materials at Stellenbosch University

At the Department of Chemistry and Polymer Science at Stellenbosch University Professor Len Barbour has constructed a system using microbalance components from CI Precision for studying vapour sorption by new crystalline materials. The university is situated in the small town of Stellenbosch, about 30 miles outside Cape Town, South Africa. It is a public research university with an enrolment of approximately 28,000 students (18,000 undergraduate, 10,000 postgraduate) and an academic staff complement of around 1,000.



Dr Len Barbour, Professor of Chemistry and South African Research Chair in Nanostructured Functional Materials, states,

“We design and synthesise new porous materials that are capable of absorbing a wide variety of small molecules such as gases and solvent vapours. My Masters and PhD students use the system on a daily basis. I use it too, but I do the instrument development part while my students actually carry out the measurements. We have been studying powdered samples in the range of 1mg to 100 mg in mostly vapours or organic solvents. Experiments vary in length from 1 hour to a few weeks.”



Dr Barbour adds that the balance system has been critical for recent research articles, including:

- M Lusi and L J Barbour “Solid-vapour sorption of xylenes: prioritized selectivity as a means of separating all three isomers using a single substrate” *Angewandte Chemie International Edition* **2012**, *51*, 3928.
- M Lusi and L J Barbour “Solid-vapour reactions as a post-synthetic modification tool for molecular crystals: the enclathration of benzene and toluene by Werner complexes” *Chemical Communications* **2013**, *49*, 2634.



This system, purchased in 2009, consists of a MK2-M5 weigh head with PTFE coating and fixed temperature control, DISBAL control unit, LabWeigh software and accessories pack. Dr Barbour writes his own software for monitoring weight with time, and for sample analysis. They often also use Excel. Reliability and ease of use/implementation are the reasons he gives for choosing to buy CI Precision’s microbalances over others on the market.

Commenting on the support from CI, Dr Barbour says,

“I have not needed much support so far, but the microbalance recently started to give trouble, most likely as a result of the types of vapours we use. The technicians at CI were able to diagnose the fault and promptly sent components which took five minutes for me to replace. The balance is back to normal again. I have had similar experiences with other UK-based companies and it is an absolute pleasure to deal with such people.”





On being asked if he would recommend CI Microbalances to other researchers, he replied,

“Yes, I recommended this equipment to someone at the University of Cape Town because these balances are very sensitive, stable and reliable.”

For more information about CI Microbalance Kits and accessories from CI Precision or to discuss a your application, please telephone **+44 (0) 1722 424100**, or e-mail **sales@ciprecision.com**

