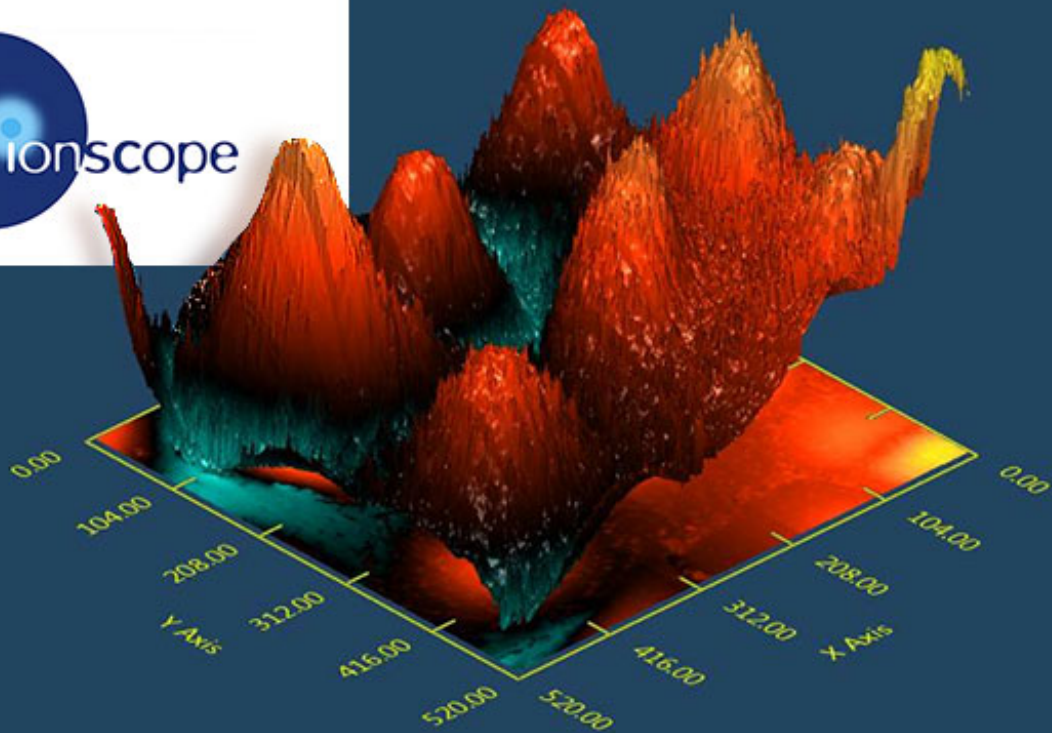




Ionscope – Software:

# Embedded Venom code development

A team of scientists from Imperial College London and The University of Cambridge developed the Scanning Ion Conductance Microscope (SICM), a patented topographic scanning technique which produces high-resolution images without making contact with the sample. Its non-invasive nature is of particular importance when scanning soft and living samples.



The Project

lonscope's equipment is used in a range of sectors from nano-deposition, for local application of chemicals to fluorescence microscopy, for combined topography and fluorescent marker detection.

PTP was asked to develop embedded Venom code to manage the controller and PC components which draw and feed information to and from the scanning device and also control the device movement. Accuracy and precision are integral to SICM products and therefore the reliability and intelligent design of the software was paramount.

PTP worked closely with the team at lonscope to develop the code required for their second generation of SICM products. Tasks included:

- › Producing an Initial Requirement Analysis to fully identify what was needed
- › Writing an Architectural Definition to identify how the requirements were going to be met.
- › Initial design and coding of the embedded controller that coordinated the low level control of the axis and scanning using Microrobotic VM2 controller and Venom.
- › Initial design and coding of the PC application which coordinated the scanning and data display as well as storing and recalling data for analysis.

## The remit for the work included the following challenges:



All software code had to be scalable and modular



Software needed to be easily modifiable in house so that the product could be supported and further developed by lonscope in the future



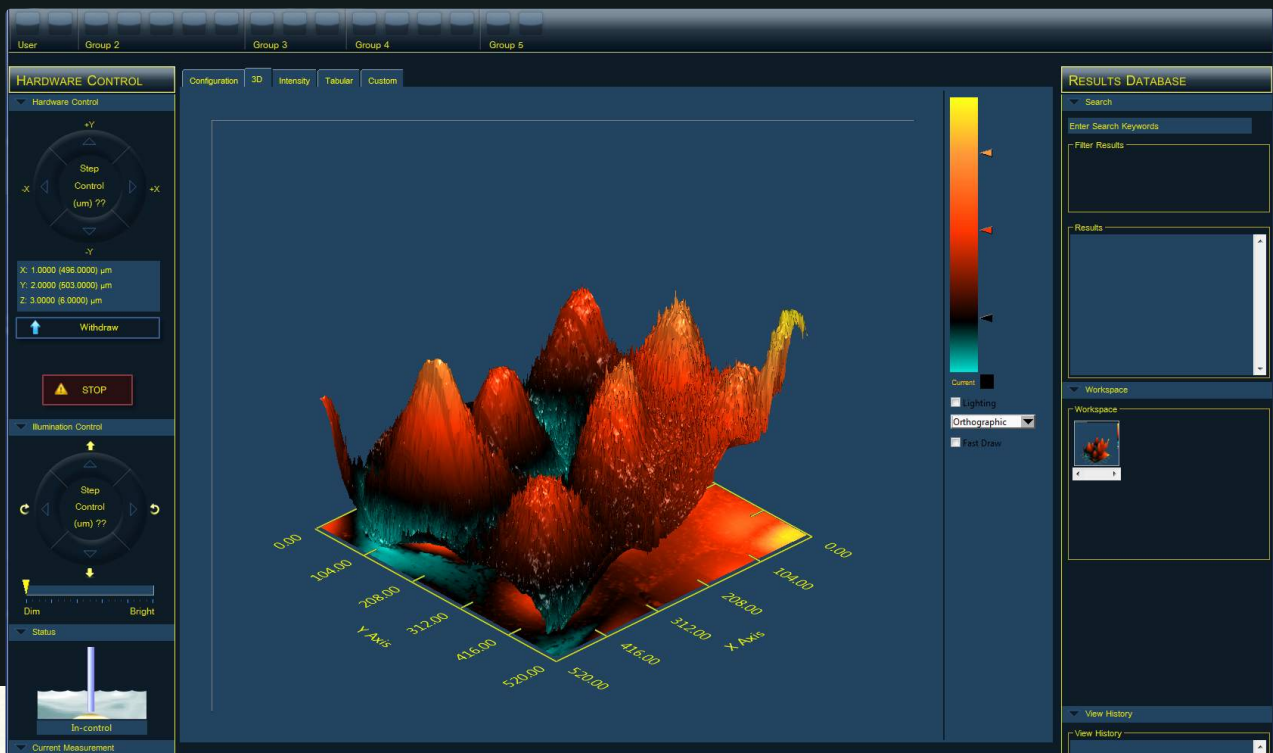
Code needed to be easily adapted across the product range



Micron precision was needed



Design and product longevity was key



✓ Success

lonscope have continued to produce leading edge microscopy products and PTP is proud to have been integral to the foundation of the ever expanding use of SICM techniques in the nanoscale world and the giant leap this represents.

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