SIMS is one of the most effective surface analysis instruments for advanced material research. Western Sydney University’s SIMS instrument is located in the Solar Technologies Research Facility at our Hawkesbury campus, and is the only instrument of its kind available for commercial use on the Eastern seaboard.

The Cameca IMS 5fE7 ion microprobe is a highly specialised surface analysis tool for high resolution depth profiling as well as surface analysis and ion imaging. The SIMS has many applications:

- Semiconductor devices
- Energy conversion components
- Materials science
- Geology
- Biological materials

SIMS is recognised as the most sensitive elemental and isotopic surface analysis technique.

The instrument provides a unique combination of extremely high sensitivity for all elements from hydrogen to uranium (detection limit down to ppb level for many elements), high spatial resolution imaging (down to 2μm), and a very low background that allows high dynamic range (more than 5 decades).

A SIMS analysis can be applied to most materials that are stable under high vacuum. It is widely used for analysis of trace elements in solid materials, especially semiconductors, thin films, metals and insulators.

The analysis consumes very little sample (is essentially non-destructive), and is thus very popular for use on rare and limited size samples.

The UWS 5fE7 ion-microprobe can be used for semi-conductor dopant and impurity depth profiling, diffusion rate investigations, thin film characterisation, corrosion studies, isotope imaging, stable isotope analysis and other applications in the Earth, Environmental and Materials Sciences.

The SIMS facility currently offers a range of services for both researchers and industry. Talk to us about your needs.