

# NanoSIMS Analysis of Metal Material

The NanoSIMS 50L can provide the highest lateral resolution among secondary ion mass spectrometers and can simultaneously achieve high sensitivity and high mass resolution. Here, we introduce examples of measuring Ti alloy using NanoSIMS.

What is NanoSIMS ?

## I maging & Depth Profiling

- High lateral resolution
- High transmission
- High mass resolution using magnetic sector

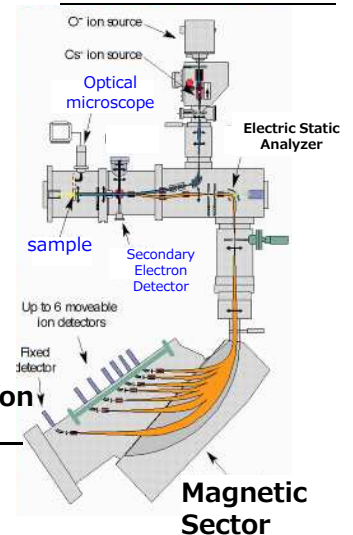


Courtesy: AMETEK

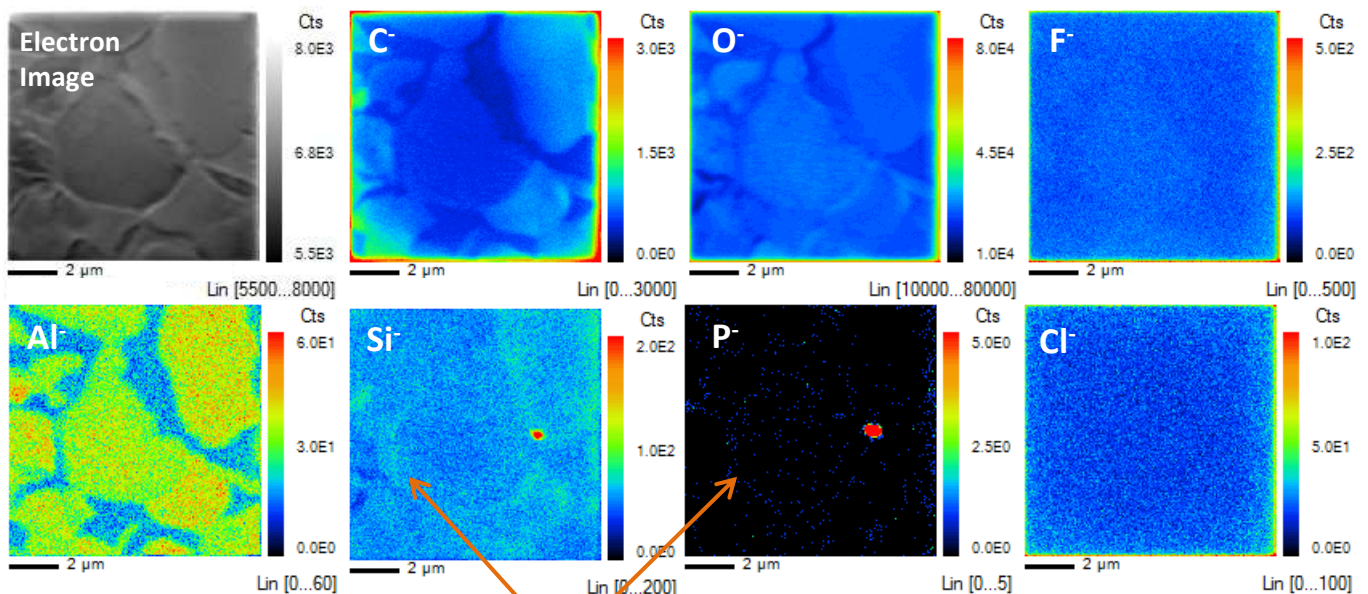
## N anoSIMS 50L

- Primary ion :  $\text{Cs}^+$ ,  $\text{O}^-$
- Minimum beam size : 50 nm
- Detection limit : ppm~
- Mass analyzer : double focusing mass spectrometer
- Number of ions detected : 7
- Analysis depth : 10 nm~ several 100 nm

### Primary Ion Source



### Elemental imaging of Ti alloy



- Si and P slightly segregate at the grain boundaries.
- Light elements can be detected with high sensitivity.



※ Disk-shaped Ti alloy was fabricated for the analysis.

Impurities in crystal grains and boundaries can be evaluated using NanoSIMS.