



GEMaC

Groupe d'Étude de la Matière Condensée

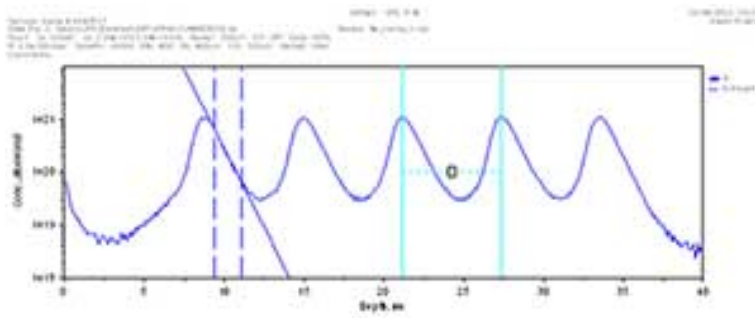
ION ANALYSER IMS7F (SIMS)

The GEMaC lab is equipped with a new generation ion analyser (IMS7f CAMECA). This apparatus is used to analyse solid materials that can be placed under high vacuum, using the technique of secondary ion mass spectrometry (SIMS).

Primarily intended for applications profilometry concentration, this "dynamic magnetic sector SIMS" is distinguished by:

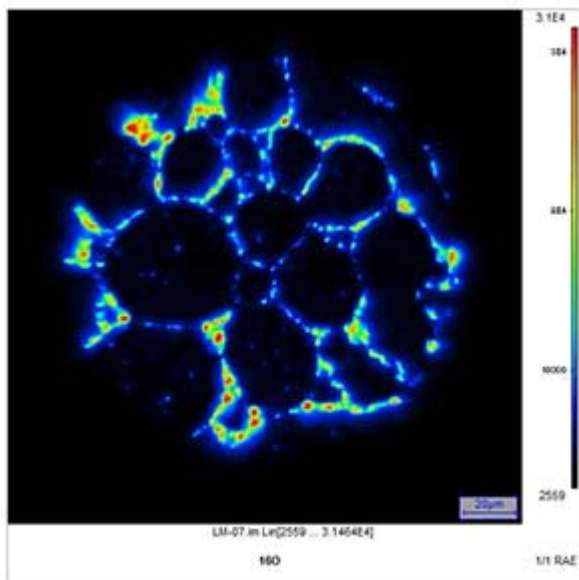
- » a very good depth resolution (a few nm)
- » a high sensitivity and excellent detection limits (10^{14} at.cm⁻³)
- » an access to high mass resolution ($M/M = 10\,000$)

The IMS7f is targeted mainly to determine the concentration of dopants and their distributions, to control the residual impurities, the quality of interfaces in semiconductor materials (for high-technologies).



Analyse of boron delta doping in silicium: depth resolution of 1.6 nm/decade.

With its ability to carry out chemical images of samples laterally heterogeneous, either in ion microscope mode (lateral resolution 2 microns) or either in microprobe mode (lateral resolution 0.5 μm), its scope is also open to metallurgy studies.



Distribution image of oxygen (16O) in metal alloy.