

# Microscopy Service

## SCANNING ELECTRON MICROSCOPE (SEM)

### General requirements of the samples

- 1 Only solid specimens are candidates for SEM. Liquids and powder specimens are NOT suitable for SEM.
- 2 The specimen MUST be clean and dry, free of dust, oils and grease; as their presence can lead to charging, contamination of the chamber and detectors and longer pump down times. Porous samples will cause that it will take longer to pump down the chamber to working vacuum conditions.
- 3 The specimen should be able to withstand the vacuum of the SEM as it might become damaged or deformed.
- 4 In the case of non-conductive samples (vegetables, biological tissues...), in order to avoid undesirable surface charge effects that affect negatively to the quality of the images, we strongly recommend coating the specimen surface.
- 5 For STEREM we recommend preparing the specimens with an extremely thin profile ( $\approx 1 \mu\text{m}$  or less).
- 6 In order to obtain satisfactory results by EBSD, a careful polishing process of the samples is required. For EBSD sample preparation, see for instance:  
[http://serc.carleton.edu/research\\_education/geochemsheets/ebsd.html](http://serc.carleton.edu/research_education/geochemsheets/ebsd.html)
- 7 For the coating process of the non-conductive specimen and sample preparation, we recommend contacting Marta Ortiz from the Microscopy Service at the University of Salamanca:  
<https://nucleus.usal.es/es/microscopia>