



Electron Microscopy

Exploring ultrastructure and beyond

The Joint IMB-IMCB Electron Microscopy Suite provides tools and expertise in qualitative and quantitative ultrastructural analysis of various types of samples using transmission and scanning electron microscopy (TEM and SEM). Services provided by the facility include training, consultation on sample preparation, sample processing, image acquisition and data analysis.

Scope of Services

- Sample processing (RT and cryo)
- Ultrathin (cryo-)sectioning
- Ultrastructure analysis by (cryo-)TEM
- Antigen detection by immuno-gold TEM
- 3D surface ultrastructure analysis by SEM
- Freeze-fracture replica analysis by TEM
- 3D Electron tomography
- Correlative light and electron microscopy
- Stereology and quantitative image analysis
- Training in instrument operation and sample processing for TEM/SEM

Key Equipment

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| <p>Jeol Electron Microscopes:</p> <ul style="list-style-type: none"> ▪ High-resolution SEM (JEOL 6701F) ▪ Low vacuum SEM (JEOL 6390-LV) ▪ 100kV TEM (JEOL 1010) ▪ 200kV cryo-TEM (JEOL 2200FS) | <p>Leica Processing Units:</p> <ul style="list-style-type: none"> ▪ Plunge freezing GP ▪ High-Pressure Freezing HPM100 ▪ Freeze fracture and etching BAF060 ▪ Automated freeze-substitution AFS2 FSP ▪ Critical Point Drying CPD030 ▪ Platinum/Gold/Carbon sputtering SCD050 ▪ (Cryo-)Ultramicrotomes UC7-FC7, UCT |
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Recognition

With a complete set of cryo-processing instrumentation from Leica Microsystems, our facility is recognised as the IMB-IMCB-Leica Electron Microscopy Sample Preparation Centre for Excellence

Sample Types

- Nanoparticles and emulsions
- Biomaterials and composites
- Protein complexes
- Viruses, bacteria and yeast cells
- Purified cellular organelles
- Membrane vesicles
- Cells (suspensions or adherent)
- Organoids, tissues and biopsies
- Whole animals (embryos)

Analysis Types

Qualitative and quantitative microscopy imaging of 2D or 3D ultrastructure, with or without antigen detection, down to nanometer spatial resolution.