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The Electron Microscopy Facility at the MLZ

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In order to provide our users the possibility to complete their neutron scattering data with real space images we will present the Electron Microscopy possibilities at MLZ consisting of a Cryogenic transmission electron microscope Cryo-TEM (JCNS) and an Environmental Scanning Electron Microscope ESEM (JCNS & Hereon).

TEM yield real space images of soft matter systems, particularly in cryogenic environment, in terms of size measurements and distribution of particles, shape, self-assembly systems and aggregates; virtually it may complete and enhance any SANS, reflectometry and macromolecular crystallography on soft matter investigation.

Moreover, the MLZ is, since recently, also equipped with a Thermo Fischer Quattro S Environmental Scanning Electron Microscope (ESEM) operated in conjunction/cooperation by JCNS and Hereon.

Beyond conventional SEM imaging on Material Science samples, the ESEM offers the possibility to work under relatively high pressure and in the presence of humidity and this, without having to subject the sample to any preliminary coating. This will allow investigations of soft matter system with water content. Additionally the ESEM is equipped with an EDX detector for elemental analysis.

The instruments as well as the extended suite of preparation equipment will be described.

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