The Micro Analytical System at the Earth Science Department

System status year 2018:

Hardware:
Scanning Electron Microscope from **FEI XL 30 Sirion FEG**

Electron gun: Schottky Field Emitter (driveable from 200 eV- 30 KeV)
Maximum beam current @ 14 nA.

Electron optic: Hexalens column with deceleration for low KV imaging.

Scan properties: TV Mode: 25 images / sec. @ 484 lines @ 720 points / line.
Highest scan speed 1.15×10^{-7} sec., slow scan mode: highest scan speed 0.21 ms / line, lowest scan speed 240 ms / line, lines per Image: min.484 max. 3872.

Detectors: Secondary electron detector with signal collection in the chamber (**SE**) or through the lenses (**TLD**).
Centaurus scintillator type Backscattered Electron Detector (**BSE**) equipped with Cathodolumiscence (**CL**) tip. Scanning Transmission Electron Detector (**STEM**) with copper TEM grid holder for 20 samples.

Micro analytical system (**EDS**) Oxford Aztec Advanced system equipped with an X-MAX 150mm^2 Silicon Drift Detector (SDD) @ 127 eV resolution for MnKa.

Electron Backscattered Diffraction System (**EBSD**) HKL Advanced system with a Nordlys Nano Camera for high sensitivity and lateral resolution. Rectangular Scintillator with a 4 diode Forescatter Detector.

Software:
Microscope control software e point (REMX)
Image enhancing program with measurement functions (e point).
AZTec Point & ID software for qualitative and semi-quantitative x-ray measurements.
AZTec Map for elemental and spectral x-ray mapping.
AZTec Feature software for automated particle analysis.
AZTec EBSD for simultaneous EDS/EBSD measurements and data analyzing
Chanel 5 Premium EBSD Software