

1. FACILITY				2. EQUIPMENT				3. SAMPLE PREPARATION AT FACILITY			4. APPLICATION		
EXCITE* partner	Facility name	Facility contact	Facility address	Data acquisition and processing software	Available equipment	Equipment type	Equipment short description	Sample preparation offered?	Max access per proposal	Access mode	Equipment availability		
Universiteit Utrecht (UU)	EM Centre	Hannah Vogel (h.p.vogel@uu.nl)	Yalelaan 1, 3584CL, Utrecht, NL	Avizo, Aztec, Espirit, Zen, Atlas, Velox GMS3, STEMx, Donovan, Zeiss Reconstructor	Helios NanoLab G3 (FIB-SEM)	EM	FIB-SEM with Cryostage, Nordlys EBSD, Oxford xxx EDS, Gatian CL	No. Only carbon coating at facility. Samples must be prepared by the user according to the facility specifications.	5 days	Remote or Physical	01/09 - 31/12		
					Carini 450 (SEM)	EM	High-end SEM with low vacuum capabilities, Symmetry EBSD detector, Oxford xxx EDS, Delmic CL, Quorum Cryostage.		5 days	Remote or Physical	01/09 - 31/12		
Universiteit Utrecht (UU)	NanoSIMS	Lubos Polerecky (nanoSIMS@uu.nl)	Princetonlaan 5, 3584 CB, Utrecht, NL	Look@NanoSIMS software.	EVO 15 (SEM)	EM	Environmental SEM with Pellet cooling stage, 2x Bruker EDS and automated mineralogy.	Yes. Depending on the type of sample we can offer some final steps in the sample preparation, like fine polishing of embedded rock-like samples, sectioning of embedded biological samples (cells, tissues), and sample coating (gold, platinum, carbon). As this will be very project specific, sample preparation needs to be discussed prior to any measurements with the head of the facility.	5 days	Remote or Physical	01/09 - 31/12		
					Spectra 300 (STEM)	EM	30-300 kV (STEM). Double aberration corrected microscope with a variable acceleration voltage (30, 80, 200 and 300 kV), enabling high-resolution imaging up to 50 µm both in TEM and STEM imaging mode. Equipped with EDX spectrometry for chemical mapping, and ultra-high-resolution electron energy loss spectrometry (UHR-EELS) enabled by its double monochromator and Gatian Continuum filter. It also has a direct-detection Gatian K3 IS camera allowing imaging of soft and beam-sensitive materials.		5 days	Remote or Physical	01/09 - 31/12		
Universiteit Utrecht (UU)	NanoSIMS	Lubos Polerecky (nanoSIMS@uu.nl)	Princetonlaan 5, 3584 CB, Utrecht, NL	Look@NanoSIMS software.	Talos F200X (STEM)	EM	200 kV (STEM). High-brightness X-FEG electron gun, high-resolution imaging up to 1.1 Å, electron diffraction, electron tomography, and high-sensitivity 2D EDX chemical mapping (Super-X).	Yes. Depending on the type of sample we can offer some final steps in the sample preparation, like fine polishing of embedded rock-like samples, sectioning of embedded biological samples (cells, tissues), and sample coating (gold, platinum, carbon). As this will be very project specific, sample preparation needs to be discussed prior to any measurements with the head of the facility.	5 days	Remote or Physical	01/09 - 31/12		
					JXA-8530F HyperProbe (EPMA)	EM	Field Emission Electron probe microanalyser, equipped with 5 WDS spectrometers, SDD ED system, CL system (panchromatic imaging and xCLent hyperspectral CL).		5 days	Remote or Physical	01/07 - 31/12		
Universiteit Utrecht (UU)	NanoSIMS	Lubos Polerecky (nanoSIMS@uu.nl)	Princetonlaan 5, 3584 CB, Utrecht, NL	Look@NanoSIMS software.	Xradia 610 Versa (µ-CT)	X-Ray	High-resolution X-ray tomography microscope system equipped with a 18kV high-energy, high-power microfocus X-ray source, several high-contrast detectors and a large flat-panel detector as well as in situ experimental capabilities.	Yes. Depending on the type of sample we can offer some final steps in the sample preparation, like fine polishing of embedded rock-like samples, sectioning of embedded biological samples (cells, tissues), and sample coating (gold, platinum, carbon). As this will be very project specific, sample preparation needs to be discussed prior to any measurements with the head of the facility.	10 days	Remote or Physical	01/07 - 31/12		
					CoreTOM (µ-CT)	X-Ray	The UU facility for NanoSIMS, which houses a CAMECA NanoSIMS 50L instrument, will provide comprehensive technical support for the mapping of element and isotope ratios in Earth and environmental materials. The dedicated technician will tune the instrument and perform requested analyses for end-users. Open-source analysis software tools will be provided to TA users, and the facility will offer training on NanoSIMS data processing, analysis, and interpretation. Expert advice on sample preparation will also be available, and users can access the facility both in-person and remotely.		5 days	Remote or Physical	01/07 - 31/12		
Universiteit Gent (UGent)	UGCT	Laurenz Schröer (Laurenz.Schroer@UGent.be)	Proeftuinstraat 86, 9000, Gent, BE	Octopus, Panthera, VGStudioMax, Avizo, Dragonfly, µCT add-on modules are also available for direct observations of fluid flow and weathering experiment. Add-on modules can be made available after initial discussion with the beamline scientist prior to submission of the proposal. Add-on modules are available for fluid flow experiments under low confining stresses (max. 30 bar) and without temperature control. Both the fluid flow cell and the pumps can be made available upon request. Also a Deben CT5000 in-situ compression and tensile cell is available (deben.co.uk and doi.org/10.1007/s10064-018-01448-0), as well as a custom-made freezing cell (doi.org/10.1016/j.cubulmat.2020.118515).	HECTOR (µ-CT)	X-Ray	The High-Energy CT system Optimized for Research or HECTOR is the workhorse of our systems. It is equipped with a 240 kV X-ray tube from X-RAY WorX, a Varex XRD 4343 flat-panel detector and a rotation stage able to carry samples up to 80 kg. Mounted on a total of 5 motorized linear stages, this system covers a very wide range of samples with a best achievable spatial resolution of approximately 3 micron and an image resolution of 2800x2800 pixels. Two additional piezo stages allow for an exact positioning of the sample on the rotation axis.	No. Samples must be prepared by the user according to the facility specifications.	10 days	Remote or Physical	01/07 - 31/12		
					EMCT (µ-CT)	X-Ray	The Environmental Micro-CT or EMCT system is a rather unique, gantry-based high-resolution setup developed for fast CT scanning and in-situ monitoring. The design of a horizontal gantry allows for the installation of a large number of add-on modules such as flow cells, pressure stages, temperature stages, in a convenient vertical position without a limitation on tubes and wires. Furthermore, the components are chosen to enable fast and continuous CT scanning at up to 2 full rotations per minute.		10 days	Physical	01/07 - 31/12		
Universiteit Utrecht (UU)	EM Centre	Hannah Vogel (h.p.vogel@uu.nl)	Yalelaan 1, 3584CL, Utrecht, NL	Avizo, Aztec, Espirit, Zen, Atlas, Velox GMS3, STEMx, Donovan, Zeiss Reconstructor	Medusa (n-CT)	X-Ray	The very high resolution scanner Medusa combines a Photonic Science VHR detector with a large-area Varian flat-panel detector to allow for both low-density objects such as biological tissue, and high-density samples such as geomaterials. Both detectors are mounted on motorized linear stages for easy and fast switching and high accuracy. The setup also allows for a very long propagation distance of 1.4m, which can be exploited for phase-contrast experiments. The FeinFocus transmission tube allows for a resolution of approximately 0.9 µm and for X-ray targets of different material and thickness.	No. Samples must be prepared by the user according to the facility specifications.	10 days	Remote or Physical	01/07 - 31/12		
					Nanowood (n-CT)	X-Ray	This versatile multi-resolution X-ray tomography scanner is equipped with two separate X-ray tubes and two different X-ray detectors to allow for optimal scanning conditions for a very wide range of samples. The open-type Hamamatsu transmission tube is used for very high resolution CT scans, where a resolution of approximately 0.9 micron can be achieved (given very small samples), whereas the closed-type Hamamatsu directional tube head is used for larger samples. On the detector side, an 11 megapixel Photonic Science VHR CCD camera with a pixel size of approximately 7µm ² is complemented with a large-area Varian flat-panel detector.		10 days	Remote or Physical	01/07 - 31/12		
Universiteit Utrecht (UU)	EM Centre	Hannah Vogel (h.p.vogel@uu.nl)	Yalelaan 1, 3584CL, Utrecht, NL	Avizo, Aztec, Espirit, Zen, Atlas, Velox GMS3, STEMx, Donovan, Zeiss Reconstructor	CoreTOM (µ-CT)	X-Ray	A versatile micro-CT system optimized for multi-scale 3D and high temporal resolution 4D imaging from core samples down to pore samples. Key benefits: • Multi-scale imaging from core down to pore/grain scale • Volume-of-Interest Scanning (VOIS) • Scan up to 1 m tall cores • Fast scanning & high sample throughput • In situ integration option • Dynamic micro-CT acquisition with temporal resolutions < 10 seconds • Software tools for dynamic acquisition, reconstruction and visualization	Yes. Sample preparation includes all steps in the production of samples of natural geological and synthetic inorganic materials for 2D and 3D analysis, e.g. polished sections, thin and thick sections. Sample preparation for multi-modality measurements must be discussed and planned in detail in advance. The preparation of organic materials such as plastics requires special arrangements. The preparation of biological materials for analytical purposes is not possible. The development of special preparation methods is possible within the framework of scientific cooperation.	10 days	Remote or Physical	01/07 - 31/12		
					CoreTom (µ-CT)	X-Ray	Core-Tom (tescan), Resolution <5µm, Sample sizes < 15 cm diameter and < 80 cm high. Possibility to measure kedge of elements inside sample. Possibility of in-situ time-lapse studies that require large rigs.		3 days	Physical	01/07 - 31/12		
Helmholtz-Zentrum Dresden-Rossendorf (HZDR)	HF	Axel Renno (arenno@hzdr.de)	40, Chemnitzstr. 09599, Freiberg, DE	Avizo, Panthera	Quanta 850M A (FEG-SEM)	EM	The SEM is connected to two detectors for performing energy dispersive X-ray spectroscopy (EDS). It is equipped with the MLA-Suite software from FEI for a rapid, spatially resolved, automatic, petrographic analysis of solid samples.	Yes. Sample preparation includes all steps in the production of samples of natural geological and synthetic inorganic materials for 2D and 3D analysis, e.g. polished sections, thin and thick sections. Sample preparation for multi-modality measurements must be discussed and planned in detail in advance. The preparation of organic materials such as plastics requires special arrangements. The preparation of biological materials for analytical purposes is not possible. The development of special preparation methods is possible within the framework of scientific cooperation.	3 days	Physical	01/07 - 31/12		
					TORNADO M4+ (µ-XRF)	XRF	The M4 TORNADO PLUS is a micro-XRF instrument designed for the detection of light elements. Two different X-ray tubes (Ru and W) are available with different spot sizes. The device is equipped with two EDS detectors. It can be operated in air under vacuum or with the flushing. AMICS is available as a software solution for automated mineralogy applications.		3 days	Physical	01/07 - 31/12		
Helmholtz-Zentrum Dresden-Rossendorf (HZDR)	HF	Axel Renno (arenno@hzdr.de)	40, Chemnitzstr. 09599, Freiberg, DE	Avizo, Panthera	JXA-8530F HyperProbe (EPMA)	EM	Field Emission Electron probe microanalyser, equipped with 5 WDS spectrometers, SDD ED system, CL system.	Yes. Sample preparation includes all steps in the production of samples of natural geological and synthetic inorganic materials for 2D and 3D analysis, e.g. polished sections, thin and thick sections. Sample preparation for multi-modality measurements must be discussed and planned in detail in advance. The preparation of organic materials such as plastics requires special arrangements. The preparation of biological materials for analytical purposes is not possible. The development of special preparation methods is possible within the framework of scientific cooperation.	3 days	Physical	01/07 - 31/12		
					TIMA-X GMS (SEM)	EM	TIMA-X is an automated mineralogy system for fast quantitative analysis of samples such as rocks, ores, concretes, tailings, leach residues or smelter products. TIMA-X combines BSE and EDX analysis and offers the possibility for cathodoluminescence investigations		3 days	Physical	01/07 - 31/12		
Deutsches GeoForschungszentrum Potsdam (GFZ)	PISA	Vladimir Roddatis (roddatis@gfz-potsdam.de)	Telegrafenberg, D-14473, Potsdam, DE	Velox, TIA, Digital Micrograph, Tomography, Nanomegas, Avizo, OQSTEM, Di. Probe, TEAM, TSL OIM, SioxView	Teconal F20 G2 X-Twin (FEG-TEM)	EM	FEI Teconal G2 F20 X-Twin (200 kV) (space resolution is < 0.3 nm at 200 kV); FEG electron source; HAADF Detector; Gatian Tridem (EELS, EFTEM); EDAX energy dispersive X-ray spectroscopy system; TEM sample holders: Gatian double-tilt holder; Single-tilt tomography holder; Single-tilt rotation holder; Gatian double-tilt liquid nitrogen holder; Gatian heating holder.	Yes. Prior to proposal submission, sample preparation (e.g. FIB) should be discussed with the facility.	4 days	Remote or Physical	15/09 - 31/12		
					Themis Z (FEG-STEM)	EM	ThermoFisher Scientific Themis Z (3.1), Cs S-CORR Probe Corrector (80-300 kV) (space resolution is < 0.06 nm at 300 kV); X-FEG electron source with a monochromator (energy resolution is < 0.3 eV); HAADF, DF2, DF4 and BF Detectors; STEM imaging of light elements; SuperX energy dispersive X-ray spectroscopy system; Gatian Imaging Filter Continuum ER1065 (EELS, EFTEM); TEM, STEM and EDX Tomography Data Acquisition Software; Low-dose Exposure Technique; Precession electron diffraction.		3 days	Remote	01/11 - 31/12		
Deutsches GeoForschungszentrum Potsdam (GFZ)	PISA	Vladimir Roddatis (roddatis@gfz-potsdam.de)	Telegrafenberg, D-14473, Potsdam, DE	Velox, TIA, Digital Micrograph, Tomography, Nanomegas, Avizo, OQSTEM, Di. Probe, TEAM, TSL OIM, SioxView	Quanta 3D (FEG-FIB-SEM)	EM	A FEI (ThermoFisher Scientific) Quanta 3D FEG is a state-of-the-art Dual Beam device. SEM column optimized for high-brightness & high-current at acceleration voltage from 2kV to 30kV and probe currents from 1pA to 65 pA. Magnifications: x30 - x1,000,000; SE & BSE detectors; Low-vacuum SED (used in low vacuum mode); EDAX TEAM software for EBSD and EDS. Maximum electron beam resolution - 0.8 nm at 30kV; Focused Ion Beam Column; Ion source - 1kV to 30 kV. Maximum ion beam resolution - 7 nm at 30kV. Omniprobe nanomanipulator. In situ Pt and C gas injection systems. Avizo Fire for 3D reconstruction in nanotomography.	Yes. Prior to proposal submission, sample preparation (e.g. FIB) should be discussed with the facility.	5 days	Remote or Physical	01/11 - 31/12		
					Helios G4 Dual Beam (FIB-SEM)	EM	ThermoFisher Scientific Helios G4 Dual Beam Helios G4 UC; Resolution: 0.6 nm at 30 kV STEM, 0.7 nm at 1 kV, 1.0 nm at 500 V (ICD). Electron beam current range: 0.8 pA to 100 nA, accelerating voltage range: 200 V to 30 kV. Maximum horizontal field width: 2.3 mm at 4 mm WD. Ion beam current range: 0.1 pA to 65 nA, accelerating voltage range: 500 V to 30 kV. Elstar in-lens SE/BSE detector; Everhart-Thornley SE detector (ETD); Retractable STEM3+ detector with BF/DF/HAADF segments; Gas Injection System; Easyfift for precise in situ sample manipulation; AutoTEM wizard automated sample preparation.		3 days	Remote	15/09 - 31/12		
Deutsches GeoForschungszentrum Potsdam (GFZ)	PISA	Vladimir Roddatis (roddatis@gfz-potsdam.de)	Telegrafenberg, D-14473, Potsdam, DE	Velox, TIA, Digital Micrograph, Tomography, Nanomegas, Avizo, OQSTEM, Di. Probe, TEAM, TSL OIM, SioxView	Ultra Plus (FEG-SEM)	EM	The ZEISS Ultra Plus field emission scanning electron microscope allows recording of high-resolution images. The complete detection system of the Ultra Plus combines various detectors: the In-Lens & SE detector for high-resolution images, the In-Lens Energy Selective Backscatter Detector (E8B) & Annular Backscatter Detector (ASB) for an impressive material contrast of each sample, and energy dispersive spectroscopy (EDS) for elemental analysis. We can use the ZEISS Ultra Plus in a variety of scientific fields, including materials, life sciences, and geological research. In life sciences, the Ultra Plus allows us to easily analyze samples with high throughput and receive large amounts of data. In addition, the Ultra Plus also offers the possibility of analyzing natural biological samples with cryo-attachment and cathodoluminescence (KL) for minerals and material science samples.	Yes. Prior to proposal submission, sample preparation (e.g. FIB) should be discussed with the facility.	5 days	Remote	15/09 - 31/12		
					Titan G2 (TEM-AEM)	EM	High resolution transmission electron microscope, FEI (ThermoFisher Scientific) TITAN with 300 kV acceleration voltage. The Titan microscope is a image- aberration-corrected STEM/TEM with 07 nm resolution, equipped with a high-brightness Schottky-field emission source, and a high-resolution Gatian Imaging Filter (GIF). It has two 2048x2048 slow-scan CCD cameras. The high resolution STEM is equipped with HAADF detector and EDAX energy dispersive X-ray for AEM analyses. Includes different sample holder, one of them is a tomography holder with ± 80 degrees to minimize the missing wedge in 3D reconstructions.		3 days	Remote or Physical	01/07 - 31/07 & 01/09 - 22/12		
Universidad de Granada (UGR)	CIC	Sarah Bonilla-Correa (sbonilla@ugr.es)	Campus Universitario de Fuentenueva, Paseo Prof. Juan Osorio, 18002, Granada, ES	Scout&Scan TM, Scout&Scan TM Control Systems Reconstructor, Dragonfly TM, Velox, Digital micrograph	Xradia 510 Versa (µ-CT)	X-Ray	X-ray micro-CT ZEISS Xradia 510 Versa. This high resolution µ-CT is able to analyze non-destructively a whole range of sample types (solid and/or liquid) and geometries. Extending synchrotron-caliber resolution and voxel size of 70 nm. It has advanced absorption contrast along with innovative phase contrast. Multi-length scale capabilities enable to image the same sample across a wide range of magnifications, reducing dependence upon sample preparation. It is able to maintain high resolution down to 700 nm at large working distances. Additional capabilities: a) T-controlled stage, b) Mechanical testing device, c) Flow-through cylindrical stage.	No. Samples must be prepared by the user according to the facility specifications.	3 days	Remote	01/07 - 31/07 & 01/09 - 22/12		
					AFM NX20 (AFM)	AFM	Atomic force microscope NX20 (Park Systems). This AFM allows working in contact, non-contact, lateral force microscopy (LFM), phase imaging and tapping AFM modes. It has a scan range of up to 100 µm. It has an open space for samples up to 150 mm x 150 mm, and thickness up to 20 mm. It has a universal liquid cell (open or closed) with liquid/gas perfusion with temperature control range up to -180°C (in air) or up to +150°C (within liquids). Since its acquisition, it has been offering service to in-house and international researchers studying morphological and chemical-physical properties of molecular nanostructures; dynamic processes, such as mineral dissolution and growth; protein aggregates, biofilms and colloids; nanolithography, electronic conductivity and mechanical properties of electronic circuits.		3 days	Remote or Physical	01/07 - 31/07 & 01/09 - 22/12		
Centre National de la Recherche Scientifique (CNRS)	INSU	Fabrice Barou (fabrice.barou@umontpellier.fr)	Place Eugene Bataillon, cc.060, 34095, Montpellier, FR	Aztec software, Channel 5, MTEX (https://mte-toolbox.github.io)	X500FE CrystalProbe (FEG-SEM)	EM	FEG-SEM equipped with a Symmetry EBSD camera and EDS detector from Oxford Instruments. Inclined column allows the mapping of relatively large areas (few cm ²). Instruments & an EDS detector allowing simultaneous crystallographic and chemical mapping of thin sections or polished sections (up to 4x3 cm). The maximum resolution of crystallographic maps on geological materials is around 0.05 µm, and the acquisition frequency can reach 500 Hz.	Yes. Sample (e.g. thin section) polishing can be done by the facility.	5 days	Remote or Physical	01/07 - 31/12		

1. FACILITY				2. EQUIPMENT				3. SAMPLE PREPARATION AT FACILITY		4. APPLICATION		
EXCITE ² partner	Facility name	Facility contact	Facility address	Data acquisition and processing software	Available equipment	Equipment type	Equipment short description	Sample preparation offered?	Max access per proposal	Access mode	Equipment availability	
Universität (UJO)	IKO - CT	Liebert Nogueira (l.p.nogueira@odont.ujo.no)	Gaimyrsvæien 69, 455, Oslo, NO	Bruker (CTAn, DataViewer, CTvox, Niscon), Dragonfly, Avizo 3D Pro - Availability via VDI Visual Machine	SkyScan 2211 (n-CT)	X-Ray	The SkyScan 2211 Multiscale XCT. It requires small samples in order to reach submicron resolution (pixel size ~300 nm). The sample size should be around 1 mm in diameter and composed of low density materials. Resolution 900 nm in voxel. For high energies (70 kV > Energy > 160 kV), large samples can be scanned (up to 15 cm in diameter, and 10 cm high, depending on the composition of the sample. Pixel size can span from 8 µm to 50 µm	Yes. Laboratory available for basic sample preparation (dehydration, staining, embedding).	2 days	Remote or Physical	01/07 - 31/12	
					SkyScan 1172 (µ-CT)	X-Ray	The SkyScan 1172 microCT has an X-ray source of 30-100kV, 4-10 W, CCD detector 4kx4kx3k pixels. Pixel size: 0.9 µm to 25 µm; Resolution 3 µm in voxel can be reached, depending on the sample.		1 days	Remote or Physical	01/07 - 31/12	
Universität (UJO)	GEQ - SEM	Kristina Dunkel (kristina.dunkel@geo.ujo.no)	Sem Sælands vei 1, 371, Oslo, NO	Bruker Esprit 2.3, CrossCoat4 Rapide (HR-EBS), Oemnis (CL)	SU5000 (FEG-SEM)	EM	Hitachi SU5000 FEG-SEM including low-vacuum mode. Dual Bruker Quantax Xtash 30 EDS system. Bruker e-Flash high resolution EBSD system with Argus, software CrossCoat4 Rapide for high-angular resolution EBSD (HR-EBS), Delmic Sparc cathodoluminescence system with hyperspectral analysis.	Yes. Carbon coater Cressington 208C, vibratory polishing machine QPol Vibro (for EBSD samples).	3 days	Remote or Physical	01/08 - 31/12	
University of Porto (FCUP)	FCUP	Alexandra Guedes (aguedes@fc.up.pt)	Rua do Campo Alegre Nº 687, 4169-007, Porto, PT	Labspec; Particle linker; CalRam	FEI Quanta 400 (FEG-SEM)	EM	The equipment can be run at high vacuum, low vacuum, or environmental mode, allowing imaging and chemical analysis of samples with or without a conductive coat. Moreover, the facility also hosts a SEM equipped with a cryogenic system	Yes. Samples for SEM-EDS will be coated (carbon or Au-Pd) at the facility.	5 days	Physical	24/09 - 24/12	
					Invia Oontor Spectrometer (Raman)	Raman	The Invia® Oontor includes an automatized piezoelectrostatic stage, enabling 2D-Raman imaging and depth measurements (lateral and vertical resolution: 100 and 15 nm). The spectrometer is coupled to a Linkam Stage (80 – 1500 K), a closed-cycle He crystal (10–300K), and a continuous flow He crystal with superconducting coil to applied external magnetic field (up to 7T; down to 3K). A high-pressure diamond anvil cell (up to 100 GPa) and high temperature (300 – 1000K) is also available for measurements.		5 days	Physical	24/09 - 24/12	
					Raman microspectrometer (Raman)	Raman	Equipment calibrated to quantify volatiles such as CO ₂ , CH ₄ and N ₂ in fluid inclusions. The equipment can be coupled to a Linkam heating-freezing stage.		5 days	Physical	24/09 - 24/12	
					Raman microspectrometer, Xolera (Raman)	Raman	The equipment offers a complete range of imaging technologies that enable acquiring Raman data from minute traces of material easily producing detailed chemical images and highly specific data from discrete points, lines, areas, and even volumes. With the possibility of using different excitation lasers (785, 532 nm) and three different gratings (2400, 1800 and 1200lines/mm) they enable spectral resolution better than 2 cm ⁻¹ . QuantaxFEG50 with sample stages for twelve different resolutions, or large samples. It can operate in high vacuum, low vacuum or environmental mode. SE/BSE/Cathodoluminescence imaging/tilting. Spot Analysis/Mapping/Tiling with EDS. Oxford UltimMax 170mm. Phase identification through Oxford software AzTec. Mapping with EBSD. Oxford Symmetry 3. EBSD full stage mapping available. Typically used to explore phase id, grain size and morphology distributions, grain orientation, texture, and strain deformation at 100nm to cm scale.		5 days	Remote or Physical	01/08 - 31/12	
ES M&DS	Iris Buisman (ib330@cam.ac.uk)	Downing Street, CB2 3EQ, Cambridge, Cambridge	ThermoFisher Maps (SE/BSE/CL imaging), AzTec (EDS, EBSD), MetLab-MTEX (EDS, EBSD), Joel FEG EPMA-Jeol software and Probe for EPMA software.	JXA-HP200F (FEG-EPMA)	EM	Jeol JXA-HP200F fitted with 5 WDS spectrometers, 1 Jeol EDS, 1 PanCI, and Transmitted/Reflected Optical microscope. Cold finger and plasma cleaner available. EDS/WDS including accurate analysis. Stage mapping allows for large areas analysis (up to 30mm ²). Thin sections (28mm x 50mm x 1.5mm) and round stubs (both 25.5mm and 30mm diameter) are suitable. The FEG source allows for trace element analysis with large probe currents (1nA to 10microA) and high-resolution imaging in conjunction with very high magnification, small area chemical analysis allowing for particles	5 days	Remote or Physical	01/09 - 31/12			
				Tecna F20 G2 X-Twin (FEG-TEM)	EM	TEM, STEM and imaging, Scanning Electron Diffraction (SED) with precession (Nanomegas) and electron tomography. In situ-studies are enabled by Gatan OriView camera combined with heating (DENS Wildfire) and liquid (Protochips Poseidon) holders.	10 days	Remote or Physical	01/07 - 31/12			
				Tecna Osain 80-200 (STEM)	EM	TEM imaging and fast chemical mapping in scanning transmission electron microscope (STEM). Its primary beam energy is 200kV, with a lower energy of 80 kV for materials sensitive to knock-on damage. FEI's Super-X system provides high collection (>0.9 sr solid angle) and high count rates (>250 kcps) EDS analysis. Electron Energy Loss Spectroscopy (EELS) using Gatan's Enfium ER 977 spectrometer allows Scan Module for Dual EELS (sequential low-loss and high-loss spectrum acquisition) and RangeEELS.	10 days	Remote or Physical	01/07 - 31/12			
				Spectra 300 (STEM)	EM	Aberration Corrected atomic resolution, monochromated, Scanning Transmission Electron Microscope. The instrument offers EDS (Thermo Fisher Super-X) and high energy resolution EELS analysis (Gatan Continuum 1068). Magnetic imaging, Lorentz magnetic imaging, electron holography Scanning Electron Diffraction (SED) (including Quantum Detectors Merlin direct detection camera). The primary Aberration Corrected atomic resolution, monochromated, Scanning Transmission Electron Microscopy (STEM). The instrument offers EDS (Thermo Fisher Super-X) and high energy resolution EELS analysis (Gatan Continuum 1066, 0.15 eV or better). A rotatable Mollenstedt-Ducker biprism allows for off-axis holography and a Lorentz lens allows field-free imaging of magnetic specimens. Scanning Electron Diffraction (SED) with precession (Nanomegas) capability includes a Quantum Detectors Merlin direct detection camera. The primary beam energy is 300 kV and the system is also aligned at 80 kV and 40 kV.	10 days	Remote or Physical	01/07 - 31/12			
University of Cambridge (UCAM)	WEMS	John Walsley (jow40@cam.ac.uk)	27 Charles Cambridge Road, CB3 0FS, Cambridge, GB	Access to proprietary manufacturers software including Velox, TIA, INCA/AZtec, Digital Micrograph, Atlas, licensed software such as Avizo, Dragonfly, Fiji and data processing (Matlab, Python) are available.	Helios Nanolab (FIB-SEM)	EM	Dual beam Focused Ion Beam (FIB) Scanning Electron Microscope (SEM) instrument SEM/FIB, TEM lamella sample preparation (OmniProbe), Pt, Tees, and Carbon Deposition. FIB/SEM tomography, EDS and Electron Backscattered Diffraction analysis are provided, with Oxford Instruments detectors.	10 days	Remote or Physical	01/07 - 31/12		
					CrossBeam 540 (FIB-SEM)	EM	Dual beam Focused Ion Beam (FIB) Scanning Electron Microscope (SEM) instrument SEM/FIB, Pt, Tees, and Carbon Deposition. FIB/SEM tomography.	10 days	Remote or Physical	01/07 - 31/12		
					Gemini 300 (SEM)	EM	SEM with Oxford Instruments X-Max and Symmetry EDS and EBSD detector systems with Aztec software.	10 days	Remote or Physical	01/07 - 31/12		
					Xradia 510 Versa (µ-CT)	X-Ray	High-resolution 3D X-ray microscope (XRM) designed for non-destructive in-situ analysis (1) load cell, Daben, CT5000, (2) in-situ flow cell, self-developed, 2 sizes). Sample sizes up to 300 mm, supporting weights up to 15 kg. Up to 0.7 µm true spatial resolution, with a minimum reasonable voxel size of approx. 0.4 µm. Key specifications: X-ray source 30-160 kV, maximum power 160 W, 12 filters for energy selection (pre-contrast reduction + contrast enhancement), 2k x 2k pixel detector. Two-stage magnification (0.4x macro / 4x, 20x, 40x) for multi-scale zoom-in tomography.	Yes. We offer a guided sample preparation of particulate samples. Also assistance in fixing complex geometries supported by 3D printing (please register early enough if required).	unspecified hours	Remote or Physical	01/07 - 31/12	
Technische Universität, Bergakademie Freiberg (TUBAF)	TUBAF-CT	Ralf Ditscherlein (ralf.ditscherlein@mvtat.tu-freiberg.de)	Agricolastraße 1, 09599, Freiberg, DE	VGStudioMax, Dragonfly, Ilastik	Xradia 510 Versa (µ-CT)	X-Ray	The Zeiss Xradia Versa 510 targets sub-micron imaging. It offers voxel sizes ranging between ~250nm and ~40µm (unbinned data) on respectively millimeter to centimeter-sized samples. The system is equipped with a 4Mpx CCD detector. An in-situ stage enables to perform in situ analyses. Test cell to be provided by the user.	5 days	Remote or Physical	01/07 - 31/12		
					Xradia 510 Versa (µ-CT)	X-Ray	The Zeiss Xradia Versa 510 targets sub-micron imaging. It offers voxel sizes ranging between ~250nm and ~40µm (unbinned data) on respectively millimeter to centimeter-sized samples. The system is equipped with a 4Mpx CCD detector. An in-situ stage enables to perform in situ analyses. Test cell to be provided by the user.	5 days	Remote or Physical	01/07 - 31/12		
					UnitOM XL (µ-CT)	X-Ray	The Tecscan UnitOM XL Spectral is a versatile system. It can handle a wide range of sample sizes (up to a meter in length) and can flexibly trade-off spatial and temporal resolution thanks to a 300W X-ray source and an 8Mpx flat panel detector. An in-situ stage enables in situ operando experiments. Test cell to be provided by the user. The system also features a spectral line source with up to 128 channels enabling non-destructive 3D chemical differentiation.	5 days	Remote or Physical	01/07 - 31/12		
					DynaTOM (µ-CT)	X-Ray	The Tecscan DynaTOM targets dynamic tests or the analysis of non-consolidated samples. The system is equipped with a 3Mpx flat panel detector and an X-ray source, mounted onto a horizontal gantry. The system remains static during the analysis. The system offers voxel sizes ranging between ~1 and ~150µm (unbinned data) on millimeter to decimeter-sized samples. Designed to perform in situ/operando analyses. Test cell to be provided by the user.	5 days	Remote or Physical	01/07 - 31/12		
Istituto Nazionale di Geofisica e Vulcanologia (INGV)	INGV-OV	Lucia Pappalardo, Gianmarco Buono (lucia.pappalardo@ingv.it) (microct.ov@ingv.it)	Via Diocleziano 328, 80125, Napoli, IT	Zeiss Scout and Scan and Zeiss XRM reconstructor, image processing and simulators (Avizo/ParGeo, Dragonfly/ORS, ImageJ/Fiji, Python libraries, 3DViewer)	Xradia 410 Versa (µ-CT)	X-Ray	Micro-CT system (Zeiss Xradia 410 Versa) equipped with a microfocus X-ray source capable of energies from 40 to 150 kV. Detectors with magnifications ranging from 0.4x to 20x (resolution down to 0.9 µm). Imaging mode in absorption and phase contrast. Device to perform high temperature-high pressure in-situ experiments and time-resolved (4D) imaging.	Yes. To be discussed with facility.	unspecified days	Remote or Physical	01/07 - 31/12	
					Xradia 410 Versa (µ-CT)	X-Ray	Micro-CT system (Zeiss Xradia 410 Versa) equipped with a microfocus X-ray source capable of energies from 40 to 150 kV. Detectors with magnifications ranging from 0.4x to 20x (resolution down to 0.9 µm). Imaging mode in absorption and phase contrast. Device to perform high temperature-high pressure in-situ experiments and time-resolved (4D) imaging.	unspecified days	Remote or Physical	01/07 - 31/12		
Technische Universität, Delft (TU Delft)	CTIG	Ellen Meijvogel-de Koning (p.m.meijvogel-dekoning@tudelft.nl)	Stevinweg 1, Gebouw 23, 2628 CN, Delft, NL	Phoenix reconstruction software, Avizo 3D analyses software, Parthena reconstruction software, Dragonfly 3D analyses software Matlab/Python routines, ImageJ	Somatom Volume Zoom (Image-CT)	X-Ray	Lab-scale computed tomography scanner to image large samples focused on in-situ testing and imaging of materials. Rocks/Samples with diameters of 15 cm and length of over a meter can be scanned in tens of seconds at a resolution of at minimum 500 micrometer.	Yes. Coring options available for all sizes of samples from large blocks. Precision polishing also possible.	5 days	Remote or Physical	01/07 - 31/12	
					CoramTOM (µ-CT)	X-Ray	Lab-scale micro computed tomography scanner to characterize microstructures of a wide variation of materials and sample dimensions. Samples with diameters of 1 mm to up to 12 cm can be scanned at with a maximum of 3 micrometer resolution. Large samples (>30 cm in length) can be scanned and the equipment has the capability to perform dynamic imaging.	5 days	Remote or Physical	01/07 - 31/12		
Norwegian Technical University of Science and Technology (NTNU)	NEXT-NTNU	Basab Chattopadhyay (basab.chattopadhyay@ntnu.no)	Realfagbygget D5-170, Høgskolingen 5, 7491, Trondheim, NO	Nikon Inspect-X and CT Pro, VGStudio Max, open-source image processing software	HT225 (µ-CT)	X-Ray	Nikon XT H 225 ST, 225kV X-ray source, 100µm spot size, 100µm resolution - depending on the sample size, max. sample size 30 cm/50 cm	No. Samples must be prepared by the user according to the facility specifications.	10 days	Remote or Physical	01/07 - 31/12	
					Custom-built - X-radiography (µ-CT)	X-Ray	Custom-built setup, VISCOM XT9100 microfocus source (Mo, Ag or Cu), Voeskuiler CCD-camera, SCINT-X pixed scintillator - optimized for 17 keV radiation, 4µm spatial resolution with frame rates up to 6 per second.		5 days	Remote or Physical	01/07 - 31/12	
					Phoenix vtomex L240 (µ-CT)	X-Ray	Versatile CT system in walking protection cabinet equipped with x-ray micro-and nano-focus sources and large 4k detector. 7 axes on massive granite base and air-condition. Good system for large scale samples, porous analysis of a small piece of rocks, and in-situ experiments.		5 days	Remote or Physical	01/07 - 31/12	
					Phoenix vtomax M300 (µ-CT)	X-Ray	Industrial CT with a powerful microfocus tube, air-bearings, fixed detector-source distance for better metrological performance. Excellent device for structural analysis of high-density sample including various form of metals.		5 days	Remote or Physical	01/07 - 31/12	
CETEC	CTLab	Eva Zikmundova (excite2@cetec.vut.cz)	Purkylova 123, 61200, Brno, CZ	Volume Graphics, Avizo, GOM inspect	Risaku nano3DX (n-CT)	X-Ray	Nano CT system characterized by high-resolution, dual-target source, quasi-parallel beam, phase contrast imaging. Very useful for light material sample like plants, polymeric composites, textile, fibers.	No. Samples must be prepared by the user according to the facility specifications.	5 days	Remote or Physical	01/07 - 31/12	
					Heliscan MicroCT (µ-CT)	X-Ray	High-quality data CT using special helical trajectory, wide cone beam, iterative reconstruction algorithm. Perfect machine for cylindrical shaped sample like drill core and battery cell.		5 days	Remote or Physical	01/07 - 31/12	
					LIBS Freefly (LIBS)	LIBS	LIBS setup for solid samples, chemical imaging and depth profiling. LOD 1-100 ppm, spatial resolution 10-150 µm, scanning area 100x100 mm ² , wide range of elements (including Li, Be, Na, Mg, N, C, L) Laser pulse energy up to 50 mJ, laser wavelengths (266, 532, 1064 nm), scanning rate 50 Hz. Spectral range covering 240-800 nm.		5 days	Remote or Physical	01/07 - 31/12	
					LIBS Discovery (LIBS)	LIBS	LIBS setup for solid samples, chemical imaging and depth profiling. LOD 1-100 ppm, spatial resolution 10-150 µm, scanning area 100x100 mm ² , wide range of elements (including Li, Be, Na, Mg, N, C, L) Laser pulse energy up to 50 mJ, laser wavelengths (266, 532, 1064 nm), scanning rate 50 Hz. Spectral range covering 180-1000 nm. LIBS setup including LIBS Interaction Chamber, capability to simulate atmospheric conditions of celestial bodies, e.g., Mars. CO ₂ at 10 mbar, and even the Moon.		5 days	Remote or Physical	01/07 - 31/12	
Curtin University	CurtinGEO	Denis Fougereuse (geoscatomprobe@gmail.com)	Kent Street, 6102, Perth, AU	Data Acquisition and Processing will utilize Carme's AP Suite software and is available as part of the standard workflow.	LEAP 4000X HR Atom Probe Microscope (APM)	APM	Local Electrode Atom Probe with reflectron ion flight path. Voltage and UV laser pulsing modes.	Yes. Atom probe tomography is undertaken on small, needle-shaped specimens. These specimens are prepared at Curtin University using site-specific targeting in the FIB-SEM. Atom probe specimens are typically taken from flat petrographic thin sections or polished blocks. We do not manufacture thin sections or polished blocks within the Facility and users must provide these.	5 days	Remote or Physical	01/07 - 31/12	
					Lyra (FIB-SEM)	EM	TESCAN Lma3 Ga ⁺ focused ion beam SEM (FIB-SEM), MIRA Electron column (Field Emission), Cobra Ion column (monoisotopic 69Ga ⁺), MonoGIS with Pt reservoir, SmartAct Nanomanipulator, ToFwerk ToF-SIMS, Oxford EDS detector, Oxford EBSD detector.	5 days	Remote or Physical	01/07 - 31/12		
University of Pannonia	Nanolab	Mihály Pósta (mihaly.posta@gmail.com)	Egyetem 10., 8200, Veszprém, HU	TEM data processing is performed using Velox, Inspect 3D and Avizo software, plus crystallography software (CrystalMaker, CrystalDiffract, SingleCrystal) is available.	Talos F200X (STEM)	EM	200 kV (S)TEM. High-brightness X-FEG electron gun, high-resolution imaging, electron diffraction, electron tomography, and high-sensitivity 2D EDX chemical mapping (Super-X).	Yes. For efficiency and time management we prefer that TNA users bring their specimens ready for TEM. Nevertheless, we can do basic TEM sample preparation in Nanolab: grid samples, ultramicrotomy, carbon coating of specimens. FIB milling may be arranged elsewhere, subject to availability and timing.	5 days	Remote or Physical	01/07 - 31/12	