

Instrument-specific annex: FEI Titan 80/300

November 2021

Instrumentation and services

The image corrected FEI Titan 80/300 (scanning) transmission electron microscope, hereinafter referred to as Titan 80/300, is owned by the DFG and is provided to the University of Bremen within project number HBFG 105/220-1.

The services include acquisition of (scanning) transmission electron microscope images, diffraction patterns, energy dispersive X-ray (EDX) spectra, electron energy loss spectroscopy (EELS) spectra and energy-filtered TEM (EFTEM) maps. Data conversion to common data formats and short-term provision of the data to the users is also included.

Additional scientific work can be included upon mutual agreement between the user and the application scientist.

Types of operation, usage groups, and costs

In general, the Titan 80/300 is operated under service operation, as defined in section §4(2) of the *MAPEX-CF General user rules and guidelines*. In agreement with the responsible application scientist, application operation is possible within the framework of extensive collaborations.

Final theses, doctoral theses or promotional studies also in the framework of structured graduate programs are considered as research and therefore excluded from category T. An exception is made for Bachelor and Master theses written under the scientific leadership of Prof. Rosenauer.

In the context of application operation, the cost for a three-day basic training course is 2000 €.

For costs above 500€ a written agreement between the AG Rosenauer and the customer has to be signed.

Group	Description	Usage share	Cost per hour	Cost per day	Cost of additional service per hour
T	Teaching personnel and students in the framework of study programs of the University of Bremen.	20 %	0€	0€	0€
A	Members of the groups directly running the instruments for method development, testing, and preliminary project work.	25 %	0€	0€	60€
B	Members of the University of Bremen.	30 %	140€ ^a 100€ ^b	-	60€

C	Members of external institutions using MAPEX-CF in the context of publicly-funded research projects.	20 %	200€	-	100€
D	Members of private institutions using MAPEX-CF for commercial purposes.	5 %	200€	-	100€

a – Service operation; b – Application operation.

The usage costs in service operation include instrument preparation, measurement, and data preparation (data conversion and provision). Basic sample preparation for samples that are provided in a solvent (e.g. nanoparticles) is included. More sophisticated preparation techniques such as focused ion beam (FIB) lift-out are charged separately on a time dependent basis.

Additional service contains for example assistance in application operation or data evaluation.

Equipment, responsible personnel, and contact details

The resources present at the Titan 80/300 are specified in the MAPEX instrument database. The responsible application scientists are Dr. Thorsten Mehrrens and Dr. Marco Schowalter. The principal investigator is Prof. Andreas Rosenauer.

Contact for inquiries	Instrument location
Dr. Thorsten Mehrrens NW1, Room M4190 University of Bremen Otto-Hahn-Allee 1, D-28359 Bremen Phone: +49 (0) 421 218 62273 mehrtens@ifp.uni-bremen.de	NW1, Room O0050 Phone: 0421 218 34700 University of Bremen Otto-Hahn-Allee 1, D-28359 Bremen Germany
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User obligations

When results obtained in the MAPEX-CF are published, the MAPEX-CF must be explicitly acknowledged [mentioning 'University of Bremen, MAPEX Core Facility for Materials Analytics' as the instrument's affiliation]. Users shall inform the MAPEX-CF instrument manager about any publications or patents based on results obtained at the MAPEX-CF. This includes, but is not limited to, scientific publications, annual reports, posters, and newspaper announcements. In case of significant scientific contribution of MAPEX-CF staff to a publication (e.g. data analysis and interpretation), the involved researchers must be

listed as co-authors. Additionally, the DFG project number HBFG 105/220-1 should be explicitly mentioned.

Liability

The University of Bremen, the scientific leadership and the operator are not liable to injuries of any kind that arise to the user due to the utilization of the Spectra 300 or other instruments used in context of the measurement. This is not valid for intent and gross carelessness of its staff because of the harm of life, body and health or because of breach of essential obligations of the usage agreement. In the latter case judicial claims are limited to typical and predictable harm.

Possible claims on official liability remain unaffected by the preceding rule.