

## Usage regulations of the Laboratory for Electron Microscopy Karlsruhe Institute of Technology (KIT)

Pursuant to Section 10 (2) No. 6 of the Karlsruhe Institute of Technology Act (KIT Act) in the version of July 14, 2009 (Journal of Laws p. 317 ff), last amended by Article 8 of Law of December 3, 2013 (Journal of Laws p. 329, 360), adopted on April 14, 2014 the following usage regulations.

### §1 Objectives

The Laboratory for Electron Microscopy (LEM) is a KIT facility that is assigned to Area V and, as an equipment center, processes electron microscopic service work for KIT-internal and external clients. External clients are institutions, persons or companies that do not belong to the KIT. The LEM also conducts its own research work on the further development of electron microscopic methods and research work in cooperation. The LEM also offers opportunities for training and further education in the field of electron microscopy and electron optics in the form of lectures and internships.

### §2 Management

The management of the LEM is responsible for research and teaching in the subject of electron microscopy, for the administration and decisions on the positions, equipment and rooms assigned to the LEM as well as for the permission and instruction for the use<sup>1</sup> of the devices. The current management can be viewed at <http://www.lem.kit.edu>.

### §3 Equipment

In the LEM there are currently four transmission electron microscopes (FEI Titan3 80-300, Philips CM200 FEG / ST, ZEISS 912 Omega, ZEISS 922 Omega), a focused ion beam system (FEI Strata 400 STEM) and three scanning electron microscopes (FEI Quanta 650 ESEM, Leo 1530 Gemini, ZEISS DSM 640) as well as devices for sample preparation are available. Changes to the equipment can be viewed at <http://www.lem.kit.edu/81.php>.

### §4 Use of the device

The devices are generally used by the LEM employees. Only in cases in which long-term and regular use by KIT members from other institutes is foreseeable, a permission for use is given by the management of the LEM and instruction in the use of LEM microscopes and preparation devices (see §8 Use of LEM devices).

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1 In the following, the term usage is used as a synonym for independent operation.

## §5 Service work

Contact persons for service work are the management of the LEM and the responsible employees who are listed on the LEM website (<http://www.lem.kit.edu/81.php>). Before processing service samples, the client must fill out a written application. The client and type of examination are specified in the application. The client will be informed of any fees. An offer can be made on request. Service samples are processed in consultation between the client and the LEM employee responsible for processing in the order in which the order is received with the best possible efficiency. In urgent cases, the LEM management decides.

## §6 Fees

The current schedule of fees for service work is available on the LEM website at <http://www.lem.kit.edu/81.php>. Potential clients will be informed about the possibility of applying for funds for the use of electron microscopy within the framework of DFG third-party projects. To this end, the DFG has greatly simplified the acquisition of funds to cover project-specific operating and follow-up costs for large equipment by issuing guidelines for applying for usage costs ([http://www.dfg.de/formulare/55\\_04/55\\_04\\_de.pdf](http://www.dfg.de/formulare/55_04/55_04_de.pdf)). Every applicant who would like to use electron microscopy in his / her project should include appropriate funds in his / her project application. Interested parties can get advice from the management of the LEM.

## §7 Research projects in cooperation

Research work in cooperation is available if third-party funded projects applied for together with the LEM are approved and processed. These research projects are carried out by LEM employees. Fees for the use of the microscopes are covered by the project funds.

## §8 Use of LEM devices

Scientific staff and students of the KIT can use certain microscopes and preparation devices of the LEM independently after prior permission from the management of the LEM and instruction, if long-term and regular use is foreseeable. However, certain devices that can be viewed at <http://www.lem.kit.edu/81.php> are generally not available for use by scientific employees and students of KIT. The necessity of independent use and the participation in the operating costs according to the currently applicable fee schedule must be clarified with the institute or working group leader of the user before starting work. Appointments are made in consultation with the person responsible for the LEM device. In urgent cases or with long waiting times due to heavy equipment utilization, the LEM management decides.

Requirements for the independent use of LEM devices are:

- Successful participation in the safety briefing by the LEM safety officer
- Multi-day, chargeable instruction by the person responsible for the device according to the currently applicable fee rates for service work
- Filling out a user data sheet with assignment of a user name for the device logbook
- Participation in the weekly group meetings at which the appointment allocation is monitored

The user obligations are as follows:

- The user is obliged to make the necessary entries in the device logbook, which are the basis for billing.
- If a booked microscope appointment is not taken, the equipment supervisor must be informed at least 24 hours in advance.
- Every user is obliged to adhere to the laboratory rules of the LEM. Above all, this means using the equipment provided properly and with care and only using methods that the respective users have been instructed in. Instructions from those responsible for the device as well as the rest of the LEM staff must be followed.
- Users are obliged to inform those responsible for the device or laboratory immediately if device defects or safety risks are discovered. The aim is to eliminate consequential damage to the devices by eliminating defects (e.g. bent specimen holders) at an early stage.
- Test materials, from which safety risks could arise, must not be brought into the facility without prior consultation with the LEM management and the LEM safety officer. The employees at the LEM must be informed of the necessary safety measures.
- A violation of the usage regulations can lead to the exclusion from further work in the LEM.
- All users of the LEM are obliged to comply with the rules of good scientific practice ([http://www.dfg.de/foerderung/grundlagen\\_rahmenbedingungen/gwp/](http://www.dfg.de/foerderung/grundlagen_rahmenbedingungen/gwp/)).
- Data backup: The users are responsible for backing up their data. Data must be backed up by the respective device computer within one month. If there is insufficient capacity, older data will be deleted by the LEM without further warning or data backup.
- Publications: When publishing research results, the user must refer to the work on the LEM, for example in the acknowledgment.

## §9 miscellaneous

(1) The LEM regularly offers lectures and practical courses (electron microscopy I and II, electron optics) in which the basics of (scanning) transmission and scanning electron microscopy are taught. Participation in these events is strongly recommended as the basis for proper microscopy and evaluation of electron microscopic data.

(2) The LEM is obliged to observe the rules of good scientific practice ([http://intranet.kit.edu/downloads/formulare/RE\\_Sicherung\\_wissenschaftlicher\\_Praxis.pdf](http://intranet.kit.edu/downloads/formulare/RE_Sicherung_wissenschaftlicher_Praxis.pdf) and [http://www.dfg.de/foerderung/grundlagen\\_rahmenbedingungen/gwp/](http://www.dfg.de/foerderung/grundlagen_rahmenbedingungen/gwp/))

## §10 contact

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As well as the current persons responsible for the areas TEM, SEM and FIB, which are indicated on the LEM website (<http://www.lem.kit.edu/81.php>). §11 Coming into force These usage regulations come into force on the day after their publication in the official notices of the Karlsruhe Institute of Technology (KIT). At the same time, the regulations of the LEM of May 12, 1991 cease to apply.