

Image, Microstructure and Microanalysis Unit - IMICROS

LSPM

Laboratory for Scanning Probe Microscopy

Rules for Access and Services

These guidelines are subsidiary of the CEMUP Rules for Service Provision in the definition of the laboratory operation and access conditions, with the purpose of accomplishing the objectives of its activity and ensure the best access conditions to the available experimental resources.

General Rules

A. Services – Access to the Laboratory

1. The laboratory booking for a work period is only possible for:
 - The researchers registered as CEMUP clients;
 - The companies or other (organizations) after a formal request for the specific work period, including a purchase order (PO) in amount of the expected cost (CEMUP information or offer).
2. The offer of a new service and the start of a new experimental work is always preceded by an information and orientation meeting, for the evaluation of the CEMUP experimental resources of interest and the definition of proper procedures and protocols, namely, regarding sample preparation, to ensure proper experimental procedures and the best quality of the results.
3. For all the experimental work performed as a service to a client, all the final experimental data results (reports, images, and analytical data) are owned by the customer. The responsibility of CEMUP in the safeguard of the experimental results ends with its transfer to the client, regardless of any standard procedures adopted by CEMUP to safeguard the analysis data temporarily.
4. For all the experimental work that generates a technical report, the responsibility of CEMUP is complete with the delivery of the final Technical Report, prepared in accordance with the terms specified in the offer/budget proposal, accepted by the customer.

B. Sample preparation and storage

1. The preparation (or part of the preparation) of the samples for analysis will be held at CEMUP whenever it can be carried expeditiously, or if it requires experimental resources that are only available at CEMUP - procedures, fixing materials or coating techniques.
2. Whenever necessary, it is at the charge of the interested researchers to do all the operations related to the selection, orientation and mechanical fixation of samples for analysis, for which the CEMUP will offer all possible assistance, namely:
 - Specifying the instrumental requirements that the samples must comply;
 - Advising about the appropriate procedures and materials;

- Providing access to instrumental facilities for sample preparation, and eventually to the necessary mounting stubs or other materials.

In the case of a single experimental work, CEMUP can provide a more extensive collaboration in the sample preparation procedure.

3. It is the responsibility of researchers to preserve and file their samples, which can only be temporarily at the custody of CEMUP in the case of experimental work carried out sequentially and for limited periods of time. All the samples that are not recovered in the recommended date will be discarded.
4. Unless there is an express agreement otherwise, all samples delivered at CEMUP under an order for analysis, will become CEMUP property after the work completion, providing evidence for the performed analysis (stored for a limited period time set by CEMUP convenience).

C. Analytical results. Data processing and analysis.

1. CEMUP provides scientific and technical support to the use and operation of all the laboratory equipments for materials preparation and characterization, to the initial data interpretation and analysis, and to the transfer to the researchers of all primary experimental acquired data.
2. For further processing of the primary acquired data, at the interest of the researchers, CEMUP will provide access to all the available facilities for data processing and analysis associated with analytical equipments and will offer initial support and training.

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A. Equipments

SPM: AFM/MFM/STM – Veeco Metrology Multimode / Nansoscope IVA

B. Reservation of working periods

1. The reservation of working periods for the LSPM, can only be made *within six weeks (6) or less*, except for:
 - Other scheduled activities, at fixed dates, will be considered for acceptance in each case
2. Each researcher can book up to a *maximum of two (2) working periods* (morning or afternoon) in every week, with an anticipation larger than one week (*it is possible to book any number of periods of work for the next week, if available*).
3. The reservation of a working period, will generally corresponds to an *entire working period* – morning (3hours) or afternoon (4hours) – or to a *minimum period of work of two (2) hours* (a period of 1h can be *exceptionally reserved if there is no negative implication to the agenda*).
4. In order to minimize the disruption in the laboratory operation, the bookings should be held preferably in the morning of the first day of the week.

C. Terms of laboratory access and mode of operation

1. The running of the equipment is carried out by CEMUP technicians, who will follow the required experimental procedures in the interest of researchers, but they will have the final decision on the convenience and compatibility of the use of the different experimental conditions and methods available.
 - a. Trained researchers agreed by CEMUP after a standard training procedure, will be authorized to run autonomously the LSPM instruments, but must agree to respect strictly the laboratory rules and the operating conditions (for the samples and instruments) established by the CEMUP technicians.
2. CEMUP technicians will inform about the requirements that the samples and materials must comply and will provide the necessary support, using all the means available in CEMUP, to ensure the best conditions for carrying out the experimental work.
3. The researchers will carry out the operations related to the selection, orientation, surface preparation and sample fixation for analysis, for which CEMUP will provide all possible assistance.

D. Service Costs

The service costs are set according to the client affiliation, for the classes defined in agreement with the next table, and have a cost rate set annually and listed in the Annex.

Class	Description
C1	Researchers affiliated to institutions in the perimeter of the University of Porto.
C2	Researchers affiliated to other public Universities and Higher Education Institutes, and services to enterprises through laboratories of the University of Porto or

	interface institutes in the perimeter of the University of Porto.
C3	Enterprises and other public or private institutions.

The autonomous equipment / laboratory users (CEMUP credential) have a special price..

E. Publication of the results

The publication or public release of the data acquired at this laboratory must include an explicit reference to CEMUP.

CEMUP, 2nd January 2020

IMICROS Coordinator

Prof. Dr. Luis Filipe Malheiros de Freitas Ferreira

ANNEX: Cost Rates - LSPM

Running mode		Additional costs
A	Work done by CEMUP technicians + tips + consumable materials for sample preparation (except experimental indentation/scratching)	
B	Work done by CEMUP technicians + consumable materials for sample preparation	Cost of the used tips (can be provided by researchers)
C	Autonomous users with proper CEMUP credential (CUA)	Cost of the used tips (can be provided by researchers)

Classes	Reference cost per working period and running mode (€)		
	A	B	C
C1	69	40	12
C2	90	62	19
C3	130	102	-----

Working periods:

M-morning (3h), A-Afternoon (4h)

MP - minimum period 2h (1h - exceptional)

Under exceptional conditions and taking in account the completed experiments, the work registration can include a period (larger or smaller than the reservation period) with a duration that is a multiple of 30 min, but never smaller than 1h.

Reference cost of tips available at CEMUP and consumables (*):

AFM - Tapping Tips - RTESP	Ccant = 35 €
AFM - Tapping Tips - TESP - SS	Ccant = 80 €
AFM – Contact Tips - NP	Ccant = 31 €
MFM – Magnetic Tips – MESP-LC	Ccant = 65 €
STM – PT Tips	Ccant = 16 €

(*) these values can change depending on the acquisition prices

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