

Biomedical Science and Engineering Center

Regulations for the Use of ZEISS

LSM-780 Confocal Microscope

2018.12

I. Qualification procedure for new users

1. New users must complete the LSM-780 training workshop.
2. Next, they need to obtain the certification time-log from the administrator. The number of hours accumulated for qualification must be from **administrator's working time** to be effective.
3. New users are required to complete **five** experiments with a seed member, and the total number of hours completed should be more than **six** hours. Both the new user and the seed member should sign their name on the certification time-log and the use sign-up form. Moreover, the **administrator's approval seal** must be affixed to certification time-log **on the day of the experiment**.
4. Accompanied by a seed member **during the whole process**, a new user will need to conduct **three** experiments independently for a total of more than **six** hours. Both the new user and the seed member should sign their name on the certification time-log and the use sign-up form. Moreover, the **administrator's approval seal** must be affixed to certification time-log **on the day of the experiment**.
5. New users must pass the administrator's operation certification test.
6. To meet the requirements, the hours and test from No. 3 to No. 5 above should be accumulated and passed **within one year** after the completion of the training workshop.
7. New users must submit the Use Consent for LSM 780 to the administrator.
8. New users can now apply for an online booking account and set the password online. The administrator will approve the application after verifying the use record. (Booking system: <http://140.114.142.239/BIOMED>)

II. New qualified users becoming seed members when proved by the administrator after three-month usage without violation

1. Seed members are obliged to train at least **one new user** every year.
2. After a seed member completes the **entire** training of a new user, the laboratory of the seed member will be entitled to **six hours of instrument usage for free**.

III. Instrument booking

1. The instrument can be booked one week before the requested use. For **daytime use**, the maximum amount of time allowed is limited to **four hours per use**.
2. Opening hours: **Daytime:** 9:30 to 17:30
Evening/early morning: 17:30 to 9:30 the next day
3. If a user wants to cancel a booking, the cancellation must be done before **17:00 the day before the booked day**. The user also needs to notify the users right before and after him/her. If no one uses the instrument because of late cancellation, the original booked period will be charged for **half of the instrument use fee**. The administrator will print out the online booking form for verification daily at 17:00.
4. The instrument use fee is **charged from the starting time** of the booked period, and if the instrument is still being used when the booked period is over, additional fees will be charged on a half-hourly basis.
5. If finishing the use of the instrument earlier, this user must notify the next user.
6. For seed members who need to use the microscope in the evening, early morning, or on weekends or holidays, they should have their **supervisor sign** the evening/early morning/holiday Use Consent to grant access. Because there are no administrative personnel in the evening, early morning or on weekends and holidays, these seed members are **fully responsible for laboratory safety**.

IV. Use regulations

A. Turning ON/OFF the instrument

Please use the instrument according to the correct procedure. Incorrect operation will be recorded as one violation. If the violation is serious, the administrator has the right to ban the user from using the instrument.

B. Fluorescent light and laser

1. To prolong the lifespan of the laser, users who are not the last user of the day should turn off the fluorescent light and clean all lenses but DO NOT turn off the system.
2. **After turning off laser switch #6, please keep the fan ON for five minutes for heat dissipation before turning off switch #5.**
3. To protect and prolong the lifespan of the fluorescent light, the **fluorescent light once turned off** should remain OFF for **more than 30 minutes** for cooling before it can be turned on again. The user turning on the fluorescent light without waiting for 30 minutes after turning off the fluorescent light will have one violation recorded.

4. Before turning off the fluorescent light, the user should first check the continuous use time in the booking system. If the current user turns it off but there is another user in less than 30 minutes, the current user will have one violation recorded.
5. If a user should turn off the fluorescent light but he/she does not, the period with fluorescent light on but without using will be charged for **half of the instrument use fee.**

C. Microscope

1. Switching to the 10X or 20X lenses when the sample is in immersion oil is prohibited. If the 10X or 20X lenses touch the oil, the user will have one violation recorded.
2. DO NOT drop immersion oil onto the lens directly. Please drop the oil on the slide before mounting the slide onto the stage.
3. Please keep the surrounding equipment clean. If the stage is splattered with oil, the user will have one violation recorded.
4. Please use the immersion oil carefully. Too much oil can cause the oil to get into the objective lens, damaging the lens.

D. Setting the software

1. DO NOT alter the default setting of the microscope operating software. Violators will have one violation recorded.
2. Users can save their scans as a new acquisition parameter or **reuse** the setup of an existing image.
3. Only **the last user of the day** can close the software. For other users, they simply close their images.

E. Data backup

1. It is highly recommended for each user to backup his or her experimental data immediately after each scan.
2. The administrator will remove data from the public computers from time to time.
3. All files should be transferred to the OFFLINE computer for export. Please prepare your own CD/DVD for storing the information. **No USB port is allowed** (except for live cell image users, as approved by the administrator).

F. Reporting problems

1. If any problems are encountered when using the instrument or if there are any problems caused by the previous user, the current user should record the problem(s) on the sign-up form and **notify the administrator immediately.**

2. Users failing to report the problem(s) caused by a previous user will be **fully** responsible for the improper operation of the instrument and the related fees. The user will also have one violation recorded.
- G. The user should fill out the **instrument use sign-up form** before and after using the instrument and accurately record the use time. If not, the user will have one violation recorded.
- H. **The use of other people's account/card for booking the instrument or entering the instrument room is strictly prohibited.** Violators (**both** the account/card borrower and the lender) will have one violation recorded.
- I. Infectious specimen should be processed in the individual lab, and after completing the work, the specimen has to be put into a fully sealed container before taken to the confocal room. Wearing gloves is prohibited during the entire operation of confocal instrument.
- J. After completing the experiment, please clean up personal samples, equipment, and waste. DO NOT leave them in the laboratory.
- K. No food or drink is allowed in the laboratory.

V. Penalties for violating the regulations

1. User and **their supervisors** will be alerted for each violation.
2. Users who have accumulated **two violations** will be banned from using the lab for a month regardless of whether the two violation are of the same reason or not.
3. Users who have accumulated **three violations** will have their qualification revoked. To recover their qualified user status, these users must retake the training workshop, accumulate the required training hours, and pass operation certification test again.
4. If all members from a laboratory accumulate a combined **five violations** in one year, all members of this lab will be banned from using the machine for a month.
5. Aside from the above violation penalties, the violator's laboratory will bear the responsibility and pay for any resulting instrument repair fees.

VI. Fees

To provide the best instrument service quality and to extend the effective service duration, people and divisions using this instrument must share the costs of the consumables and normal instrument repair and maintenance fees, as well as the costs of services provided by the instrument administrator. Fees are charged for using and demonstrating (including in coordination with teaching/research projects) the instrument. See Below for more details.

1. 【Tsing Hua University Faculty members】

- 1) Fees for users who operate the instrument themselves: NT\$ 300/30 minutes; NT\$ 600/hour
- 2) Fees for having an administrator operate the instrument: NT\$ 2,000/hour
(**Below** available for seed members only)
- 3) Evening/early morning: NT\$ 200/hour
- 4) Whole evening (from 17:30 to 9:30 the next day): NT\$ 2,000
- 5) Weekends/holidays (9:30 to 17:30): NT\$ 300/hour

【Non- Tsing Hua University faculty members】

- 1) The administrator needs to perform the operation, and the fee is NT\$ 2,000/hour
2. Each laboratory will be billed for the fees once a month. Within **two weeks** after receiving the bill, the laboratory must bring the bill to the school cashier, pay the bill, and send the receipt back to the Biomedical Science and Engineering Center. If the laboratory fails to pay the bill within the two-week period, the laboratory's qualification will be suspended.
3. The instrument fees will be reviewed each year, and any adjustments will be promulgated.

VII. Acknowledgment

Dear user:

Thank you for using the instrument. If our work is helpful for your publications, including thesis or dissertation, please mention us in the acknowledgment section of your work to assist us obtaining funding and improve our performance ratings. Please send us a copy of your work or tell us the name of the journal, year, volume, page, and title of your work. Thank you.

Here is an example for the acknowledgment: We thank the excellent technical assistant of Technology Commons, Biomedical Science and Engineering Center, NTHU (Taiwan) through the use of their confocal laser microscopy.

Location of the instrument room:

Rm 725, Tsing Hua Lab, National Tsing Hua University

Contact the administrator

Ms. Tang Hsiang-yun, Rm 732-1 of Tsing Hua Lab, Ext. 31253

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