

Department of Chemistry, National Sun Yat-sen University

Regulations for Use and Management of Nuclear Magnetic Resonance Spectrometers

Established and approved at the 5th department affairs meeting for Academic Year 2018 on 2/26/2019

Management organization

Article 1

The Regulations are established to efficiently use the nuclear magnetic resonance (NMR) spectrometers owned by the Department of Chemistry, National Sun Yat-sen University.

Article 2

The Regulations only apply to the NMR spectrometers owned by the Department of Chemistry, National Sun Yat-sen University. The other instruments owned by the Department are not subject to the Regulations.

Article 3

The Department may appoint a person as NMR spectrometer manager (hereinafter referred to as manager) to ensure and oversee compliance with the Regulations.

General use rules

Article 4

Online reservations are required for any person wishing to use the said instruments. Refer to Appendix I for the reservation rules.

Article 5

A person must pass an operation assessment before using the instruments. Refer to Appendix II for the table that specifies the access levels, authorized experiments, and assessment criteria.

Article 6

The “user pays” principle applies to the use of the instruments. Refer to Appendix III for the rates. However, the rates do not apply in the case of teaching, training, or maintenance.

Article 7

The duration of use is calculated in the unit of hours per laboratory on a semi-annual basis.

Article 8

If a user fails to use the instruments during the reserved period, the entire period will still count towards the duration of use.

User responsibilities

Article 9

Users are only authorized to conduct experiments that are within the scope of the assessment. Moreover, users shall, before and after using the instruments, check the condition of the instruments and surrounding environment and fill out an instrument check form, in order to identify responsibilities.

Article 10

Food and drinks are banned in the instrument room. Users must keep the instrument room clean and tidy, and shall be responsible for restoring the instrument room after the end of an experiment.

Article 11

Users must not use a USB flash drive to access or store any data without permission from the manager.

Article 12

The Department is not responsible for the safekeeping of experiment samples that are temporarily placed in the instrument room. Users shall dispose of experiment samples immediately after the end of an experiment. Experiment samples that have not been disposed of will be regarded as waste and removed on a weekly basis.

Penalty for users

Article 13

Eligible users will be permanently banned and held liable if they use the instruments without making a reservation or allow others to use their online reservation account, which violates Article 4, and the use is deemed malicious. If any user violates the reservation rules set forth in Appendix I to Article 4 of the Regulations, they will be suspended for one week and their name disclosed in the case of first violation; they will be suspended for one month and their name disclosed in the case of second violation; and they will be permanently banned, and their name disclosed in the case of third violation.

Article 14

Using the instruments before undergoing an assessment or conducting experiments that have not been assessed will violate Article 5; therefore, such use will be deemed malicious, and users will be held liable. In case of damage to the instruments, users shall be responsible for repair and compensation.

Article 15

If any user violates Article 9, 10, 11, or 12, and such violations adversely affect the rights of other users, they will be suspended for one week and their name disclosed in the case of first violation; they will be suspended for one month and their name disclosed in the case of second violation; and they will be permanently banned and their name disclosed in the case of third violation. In case of damage to the instruments, users shall be responsible for repair and compensation.

Article 16

If any person fails to pay use fees after being reminded a number of times, their online reservation account will be suspended.

Supplementary rules

Article 17

The Regulations shall become effective after being approved at a department affairs meeting. The same procedure shall also apply to any amendments.

Appendix I Reservation Rules (version for discussion at a user meeting: 20181030)

	Period	Reservation rules
Short periods (Max 30 minutes each time)	AM0900 - PM1000 (on the same day) from Monday to Friday	<ol style="list-style-type: none"> 1. There shall be at least a 30-minute interval between reservations. 2. No more than two hours may be reserved per day for each reservation account. (Exception: Each laboratory may be reserved for longer periods from PM1200-0230 twice a week. If a reservation has been made, the account holder should not make another reservation during the period listed on the left on the same day.)
	AM0900 - PM1000 (on the same day) on Saturday and Sunday	<ol style="list-style-type: none"> 1. No more than 2.5 hours may be reserved per day for each reservation account.
Long periods (priority given) (Max 11 hours each time)	PM1000 - AM0900 (on the next day) from Monday to Sunday	<ol style="list-style-type: none"> 1. Reservations for long periods in the following week can be made starting from AM0900 every Sunday. 2. Reservations may be made no more than twice a week for each reservation account. <p>PS: To increase the use of the instruments, if a user has made reservations twice in one week, but no reservations have been made for PM1000 on the previous day, the user may make a reservation without being subject to the limit of twice a week. (Exception: People who make a reservation for long periods have priority in reserving the period listed on the left. However, the period is still available for reservations for short periods if no reservations have been made for PM1000 on the same day.)</p>

* This table applies to JEOL NMR 400MHz.

	Period	Reservation rules
Short periods (Max 30 minutes each time)	AM0900 - PM1200 (on the same day) from Monday to Sunday	<ol style="list-style-type: none"> 1. There shall be at least a 30-minute interval between reservations. 2. No more than two hours may be reserved per day for each reservation account.
Long periods (Max 11 hours each time)	PM1200 - AM0900 (on the next day) from Monday to Sunday	<ol style="list-style-type: none"> 1. None

* This table applies to Bruker NMR 300MHz.

Appendix II NMR User Levels

Level	Authorized Experiments	Assessment Criteria	Note
Elementary	Basic 1D NMR: ^1H , ^{19}F and heteronuclear ^2D , ^{13}C , ^{15}N , ^{23}Na , ^{27}Al , ^{29}Si , ^{31}P , etc.; homonuclear/ heteronuclear decoupling; selective decoupling	Rules for using NMR instruments; instructions for sample preparation; turning on the instrument, entering/exiting the system, sample presentation, shimming, locking, tuning/matching, sample rotation; selecting experiments and setting parameters; handling, preserving, and printing spectra	
Intermediate	Spectra: DEPT, NOE difference spectrum Dynamic measurement: T1, T2 relaxation, exchange, diffusion, and variable temperature operations Samples from others may be accepted (1D NMR and time series experiments)	Setting up time series experiments, selecting parameters, and processing data; variable temperature operations; operations at magnetic field gradients; filling liquid nitrogen/liquid helium; simple troubleshooting	Authorization for elementary users is required
Advanced	2D NMR: COSY, TOCSY, NOESY, MQCOSY, HMBC, HSQC/HMQC; 2D relaxation and diffusion (HSQC-T1/T2, DOSY); 3D and higher-dimensional experiments (3D NOESY, HSQC-NOESY, TROSY, etc.) Samples from others may be accepted	Setting up multidimensional time series experiments, selecting parameters, and processing data; irregular radionuclide experiments; manual shimming/tuning/matching; general troubleshooting	Authorization for intermediate users is required

Appendix III Rates

	NMR 300KHz	NMR 400KHz
Faculty and students at the Department	NT\$1/minute	NT\$1/minute
Users from other departments of the University/external users	NT\$5/minute	NT\$5/minute

