

Syllabus

NMR Spectroscopy

Instructor: Wei-Jyun Chien (錢偉鈞)

Lecture: Monday 13:30~15:20

Wednesday 09:10~10:00

Office Hour: Tuesday 10:10~12:00

Office: G-821

Laboratory: G-914

Tel: 23323000 ext. 7230 or 4307;

e-mail: wjchien@mail.cyut.edu.tw

Textbooks:

1. *Nuclear Magnetic Resonance Spectroscopy, An Introduction to Principles, Applications, and Experimental Methods*; Joseph B. Lambert and Eugen P. Mazzola; Pearson Prentice Hall; 2003. (N)
2. *150 and more Basic NMR Experiments a practical Course*; S. Braun, H.-O. Kalinowski, S. Berger; Wiley-VCH. (B)

Grading:

筆試：期中考與期末考各佔 25%。合計 50%。 操作：40%。 期末報告：佔 10%。

Schedule

日	一	二	三	四	五	六	Schedule	Note
2/19	20	21	22	3/1	2	3	Start of Semester	
4	5	6	7	8	9	10	Introduction to NMR spectroscopy	
11	12	13	14	15	16	17	Origin of NMR signals	Exp 1 basics operations
18	19	20	21	22	23	24	Spectrometer & Basic Operation	Exp 2 basics operations
25	26	27	28	29	30	31	Resonance signals and Fourier Transformation	Exp 3 acquisition & Processing
4/1	2	3	4	5	6	7	Pulse Sequence	Exp 4 Basic 1D
8	9	10	11	12	13	14	Application of one dimensional NMR Spectroscopy	Exp 5 Basic 1D
15	16	17	18	19	20	21	Nuclear Overhauser Effect	Midterm Exam
22	23	24	25	26	27	28	Polarization Transfer	Exp 6 1D applications
29	30	5/1	2	3	4	5	Relaxation & Measurement of T1, T2	Exp 7 1D applications
6	7	8	9	10	11	12	Two-dimensional-NMR Spectroscopy & application	Exp 8 2D setup
13	14	15	16	17	18	19	Two dimensional NMR Spectroscopy & application	Exp 9 2D process
20	21	22	23	24	25	26	Two dimensional NMR Spectroscopy & application	Exp 10 1D applications
27	28	29	30	31	6/1	2	Principle and application of PFG NMR	Exp 11 2D applications
3	4	5	6	7	8	9	Principle and application of PFG NMR	Exp 12 2D applications
10	11	12	13	14	15	16	Review & Discussion	
17	18	19	20	21	22	23	Final Presentation	
24	25	26	27	28	29	30	Final Exam	

Resources:

NMR course content <http://web.chem.queensu.ca/FACILITIES/NMR/nmr/webcourse/index.htm>

Basics of NMR <http://www.cis.rit.edu/htbooks/nmr/>