



Solid state NMR Course-I

Bruker FT-NMR 교육 상세내용

- 참가 대상 : Bruker NMR 사용자
- 참가비 : 40 만원 (2일 교육기준, VAT 별도)
 - * 신규장비 설치 및 유지보수 계약 고객은 무료
- 제공사항 : 중식,교재, 주차비
- 문의 : 이은영 차장 (070-7863-2931)

User Training Course Description

Solid State NMR CPMAS Course (2 Days)

○ Course level

NMR 초급자 및 경력자

○ Subjects

1. Interactions dominating solid state NMR spectra
2. Magic Angle Spinning (MAS)
3. Cross Polarisation (CP)
4. Heteronuclear decoupling
5. Magic-angle adjustment
6. Probe shimming
7. Cross Polarization (Hartmann Hahn)
8. Decoupling
9. Sideband Suppression
10. Editing Techniques for discrimination of $C_{\text{quaternary}}$, CH, CH_2 , CH_3

Course Schedule

	First Day	Second Day
10:00-11:40	Theory I	Theory I
11:40-13:10	lunch break	lunch break
13:10-14:00	Basic setup, rotor handling	Probes and variable temperature
14:00-14:20	coffee break	coffee break
14:20-15:20	Practical session	Practical session
15:20-15:40	coffee break	coffee break
15:40-17:00	Practical session	Practical session

CP/MAS Course Details

- Theory

- **Interactions dominating solid state NMR spectra**
 - chemical shift anisotropy
 - dipole-dipole coupling
 - nuclear quadrupole interaction
- **Magic Angle Spinning (MAS)**
 - physical principle
 - spinning sidebands
 - peculiarities of MAS for dipole-dipole, CSA, and nuclear quadrupole interactions
- **Cross Polarisation (CP)**
 - physical principle
 - kinetics
 - methods (e. g. variable amplitude CP, ramped CP)
- **heteronuclear decoupling**
 - basic principles
 - parameters (RF field strength, bandwidth, efficiency)
 - methods (e. g. TPPM, SPINAL, XiX)

- Practical sessions

- **Magic-angle adjustment**
- **Probe shimming**
- **Cross Polarization (Hartmann Hahn)**
- **Decoupling**
- **Sideband Suppression**
 - TOSS
 - SELTICS
- **Editing Techniques for discrimination of C_{quaternary}, CH, CH₂, CH₃**
 - NQS
 - CPPI
 - CPISPI
 - Polarization / Polarization Inversion
 - combined techniques