Analytical Mass Spectrometry

Scope:

The course is directed to graduate students who specialize or are interested in **analytical, pharmaceutical, or clinical chemistry,** as well as **biochemistry, biotechnology, systems biology,** and related areas.

It will provide a comprehensive overview of mass spectrometry technology, methodology, and applications.

Contents (by topic):

1. Introduction

2. Vacuum system

3. Sample interface and ion source

4. Mass analyzer

5. Ion detector

6. * Mid-term exam

7. Identification of molecules

8. Quantitative analysis

9. Hyphenation with other separation techniques

10. Mass spectrometry imaging

11. * Students' presentations

12. Selected applications

13. * Final exam

Evaluation:

* Final mark will be based on the results of the mid-term exam (30%), presentation (30%), and the result of the final exam (40%). Additional points (up to 15%) can be gained for active participation in the class.

Requirements:

Students who have completed the Analytical Chemistry course are encouraged to participate.

Study material:

Handouts will be provided for selected topics.

Textbooks:

1) Urban P.L., Chen Y.-C., Wang Y.-S. 2016, *Time-Resolved Mass Spectrometry: From Concept to Applications*. Wiley, Chichester.

2) de Hoffmann E., Stroobant V. 2007, *Mass Spectrometry: Principles and Applications, 3rd Edition*. Wiley, Chichester.

Office hour:

Time: Friday, 14:00-15:00.

Place: room 316

Useful links: (This section will be expanded.)

tba

Handouts (for the participants of this course only):

The handouts and other course materials are currently available in the NTHU iLMS website. You have to log in.