

# Advanced Analytical Chemistry

2014/2/20

Credit: 3 credits

Time : 9:10 –12:10

Room: P101, Institute of Physics

Midterm report : 40%

Final team report: 60%

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- Yu-Ju Chen: Institute of Chemistry  
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  - Ji-Yen Cheng, [jycheng@sinica.edu.tw](mailto:jycheng@sinica.edu.tw)

# Syllabus

Week	Date	Topic	Professor
1	2月23日	Introduction	Ji-Yen Cheng
2	2月27日	From Amino Acids to Protein Folding	Joesph Jen-Tse Huang
3	3月6日	General principles in analytical chemistry	Yu-Ju Chen
4	3月13日	Biochip - Microarray and microfluidic chip	Ji-Yen Cheng
5	3月20日	XPS	Jing-Jong Shyue
6	3月27日	Spectroscopy from X-ray and UV-visible light to THz wave	Koji Hatanaka
7	4月3日	SIMS	Jing-Jong Shyue
8	4月10日	Midterm Report	
9	4月17日	Electron Microscopy	WeiHau Chang
10	4月24日	Foundamental of Mass Spectrometry	Yi-Sheng Wang
11	5月1日	Foundamental of Mass Spectrometry	Yi-Sheng Wang
12	5月8日	Application of mass spectrometry to biology and nanotechnology	Yu-Ju chen
13	5月15日	Application of mass spectrometry to biology and nanotechnology	Yu-Ju chen
14	5月22日	NMR spectroscopy-foundamental and application	Der-Lii Tzou
15	5月29日	Modern NMR techonolgy-Hand-on experimence	Der-Lii Tzou
16	6月5日	SPR sensing	Pei-Kuen Wei
17	6月12日	Super-resolution Light Microscopy	Chau-Hwang Lee
18	6月19日	Final Team Report	Yu-Ju Cheng/Ji-Yen Cheng

## **Midterm Report (40%)**

**The Impact of New Technologies – *To be announced.***

# (1) Team Information

Each team consists of **2-3** members. It is encouraged to have **members from different departments**. You can have **creative personal profiles** in this section to impress the reviewer.

- Team infrastructure

- Personal CV--Name, department, ID, photo, expertise...etc)

# You can find references in the following Journals

- *Nature*
- *Science*

- *Nature Methods*
- *Nature Biotechnology*
- *Nature Chemical Biology*

- *New England Journal of medicine*
- *Cell*
- *Cancer research*

- *Lab-on-chip*
- *Biosensors and Bioelectronics*

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Items 1 - 5 of 5

- 1: [Rush J, Moritz A, Lee KA, Guo A, Goss VL, Spek EJ, Zhang H, Zha XM, Polakiewicz RD, Comb MJ.](#)

Immunoaffinity profiling of tyrosine phosphorylation in cancer cells.

Nat Biotechnol. 2005 Jan;23(1):94-101. Epub 2004 Dec 12.

PMID: 15592455 [PubMed - indexed for MEDLINE]

- 2: [Sun X, Hung K, Wu L, Sidransky D, Guo B.](#)

Detection of tumor mutations in the presence of excess amounts of normal DNA.

Nat Biotechnol. 2002 Feb;20(2):186-9.

PMID: 11821866 [PubMed - indexed for MEDLINE]



### (3) Describe the analytical platform and your team work

■ **Meeting and Discussion:** Please report in **details** about how you pick up the papers among the huge number of papers. The details include **WHO and WHAT** individual member comments during the conversation.

Yu-Ju Chen: xxxx

Ji-Yen Cheng: xxxxx

John Smith: xxxxx

## (4) Written Report

- Abstract
- Literature
- Analytical strategy
- Presentation of protein atlas

# Final Team Report

Objective:

To be announced.