

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%

Handout download

- sFTP server: seediq.rcas.sinica.edu.tw or 140.109.214.24 (port 22)
- Directory: AdvAna_Course_TIGP_2014
- Username: anastudent
- Pass: anastudent

- Yu-Ju Chen: Institute of Chemistry
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- Ji-Yen Cheng, 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 techonlogy-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***
- ***New England Journal of medicine***
- ***Cell***
- ***Cancer research***
- ***Lab-on-chip***
- ***Biosensors and Bioelectronics***
- ***Nature Methods***
- ***Nature Biotechnology***
- ***Nature Chemical Biology***

Scirus: <http://www.scirus.com>

Scirus is the most comprehensive science-specific search engine on the Internet. Driven by the latest search engine technology, Scirus searches over 450 million science-specific Web pages.

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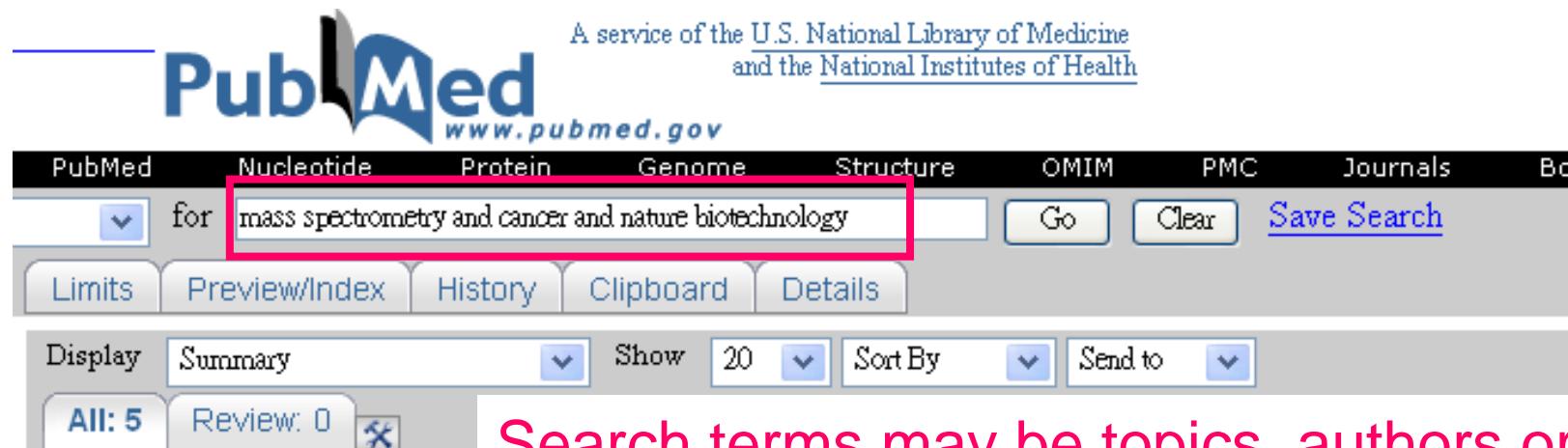
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Dates	Only show results published between before 1900 <input type="button" value="▼"/> and 2008 <input type="button" value="▼"/>	
Information types	Only show results that are <input checked="" type="checkbox"/> Any information type <input type="checkbox"/> Abstracts	
	<input type="checkbox"/> Conferences <input type="checkbox"/> Patents	

- Other Search Engines
- **PubMed**: <http://www.ncbi.nlm.nih.gov/sites/entrez>
- PubMed is a service of the U.S. National Library of Medicine that includes over 17 million citations from MEDLINE and other life science journals for biomedical articles back to the 1950s



A screenshot of the PubMed search interface. The search bar contains the query "mass spectrometry and cancer and nature biotechnology", which is highlighted with a red box. Below the search bar, the results summary shows "All: 5" results found. The main content area displays two search results, each with a checkbox, the author list, a brief abstract, the journal, the publication date, and the PMID. A pink box highlights the text "Search terms may be topics, authors or journals" located below the results summary.

Search terms may be topics, authors or journals

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.