Writing a scientific paper

25.04.2013

Outline

- How to search papers
  - Stand on the shoulders of giants
- Tips for the beginner
- Writing a scientific paper
  - What
  - How

How to search papers

- Web of science
- Google scholar
- Scopus, arXiv…

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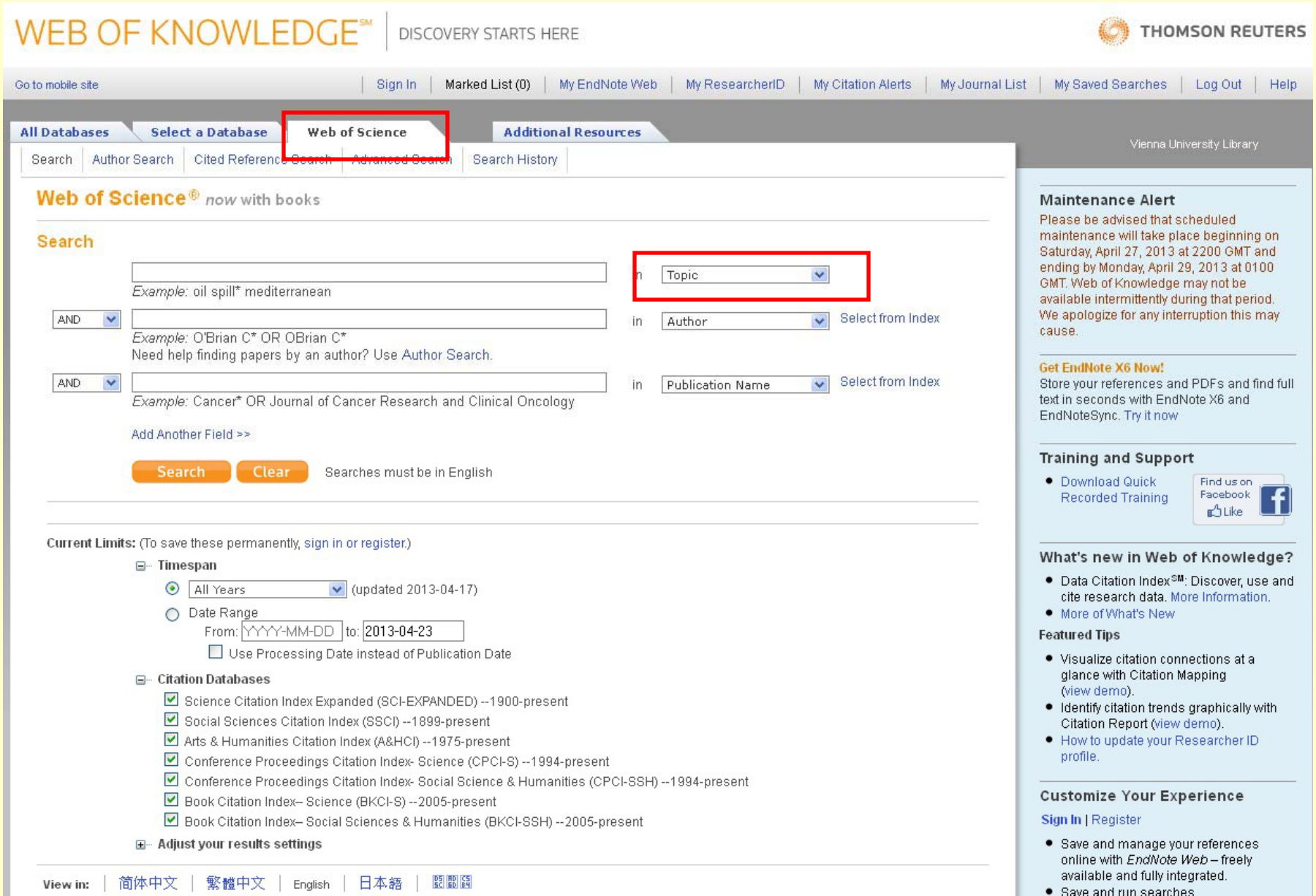

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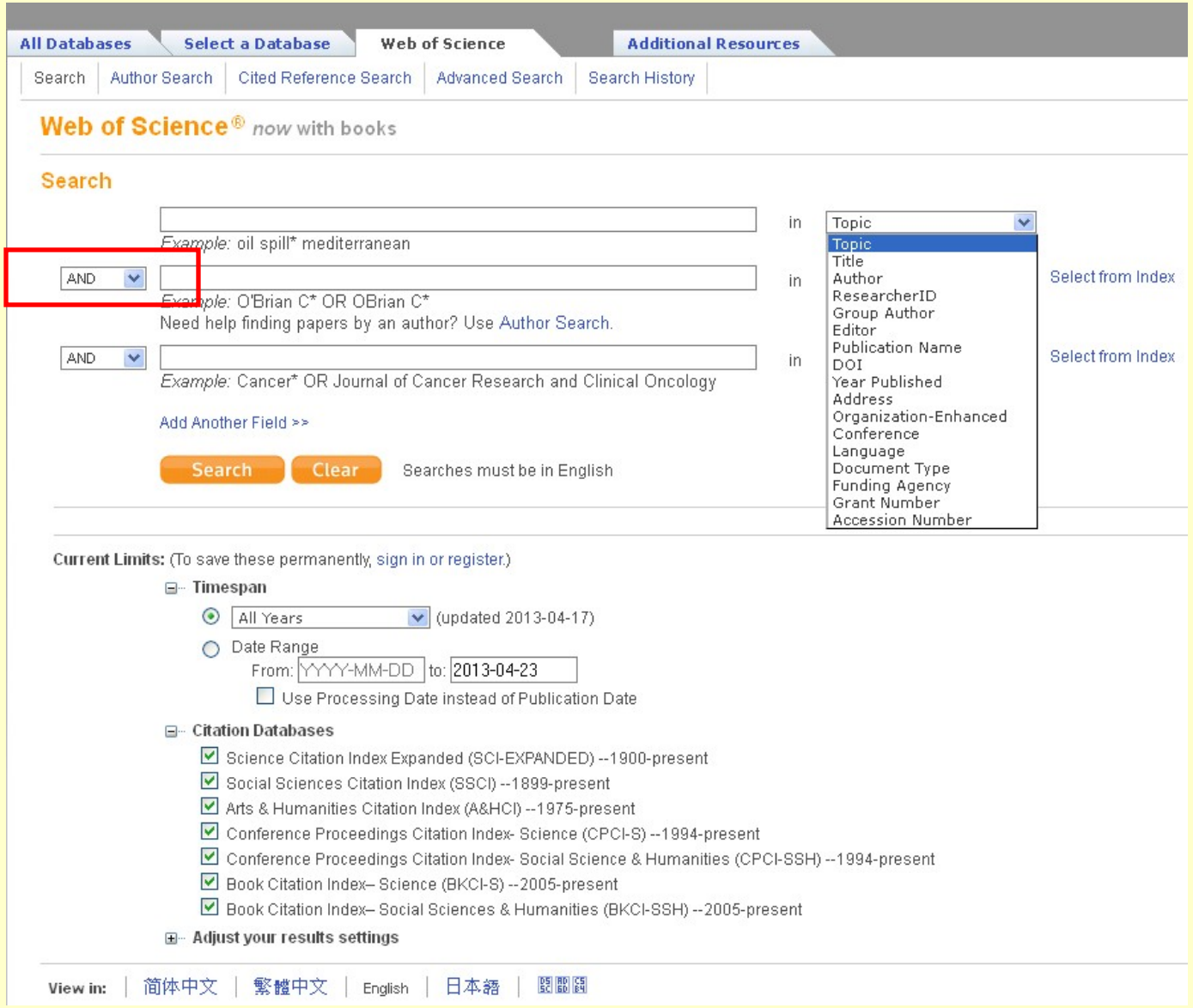

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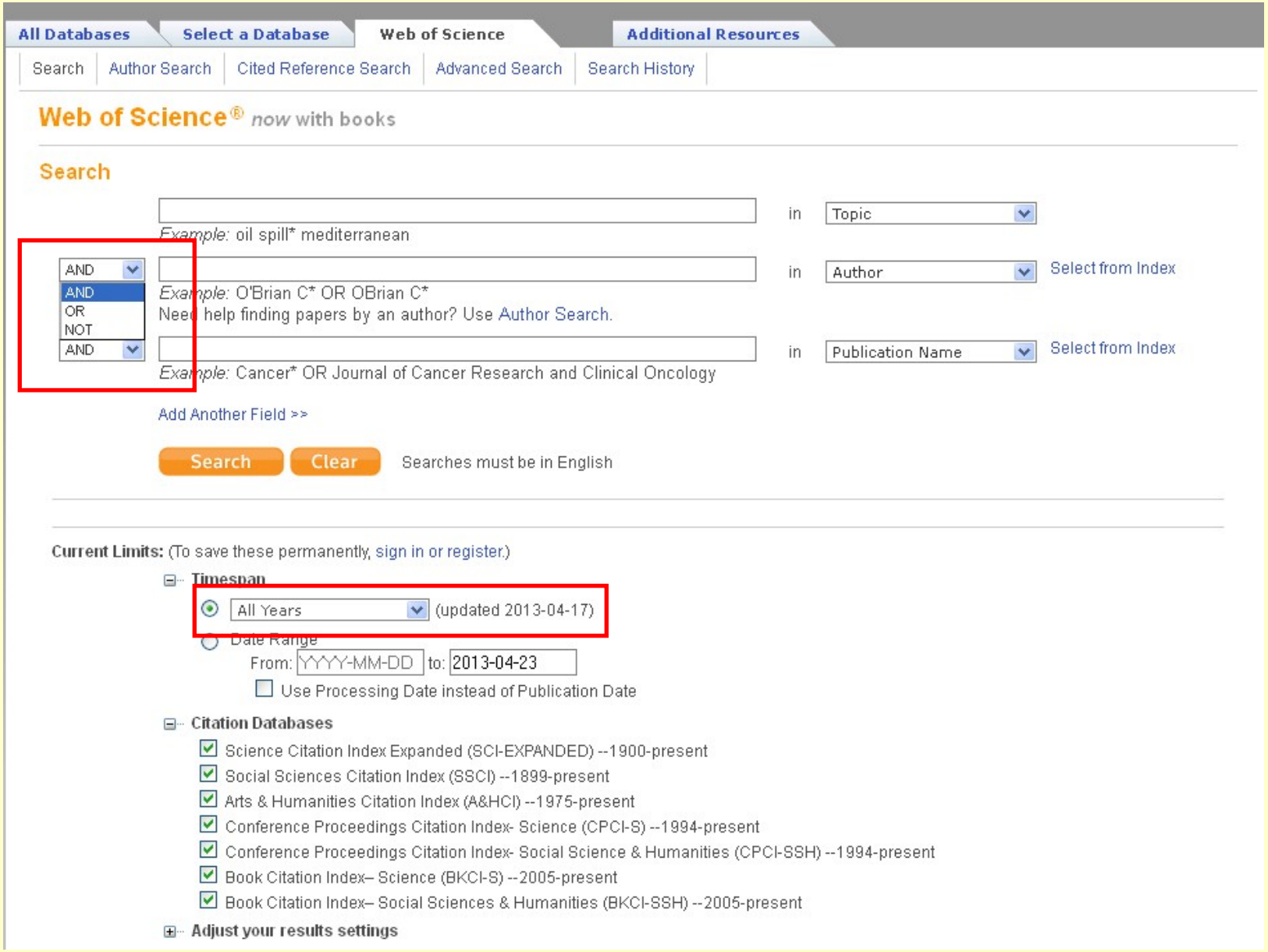

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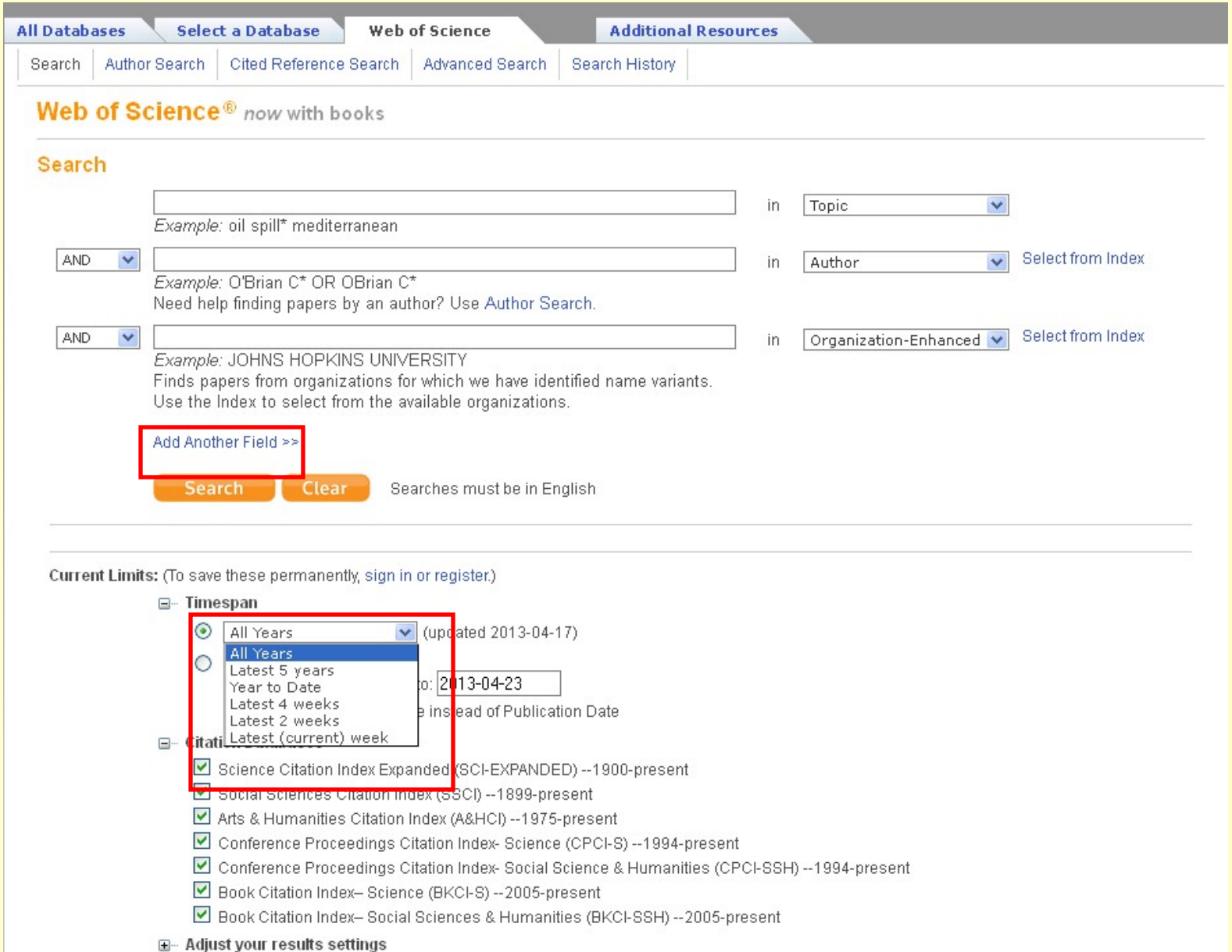

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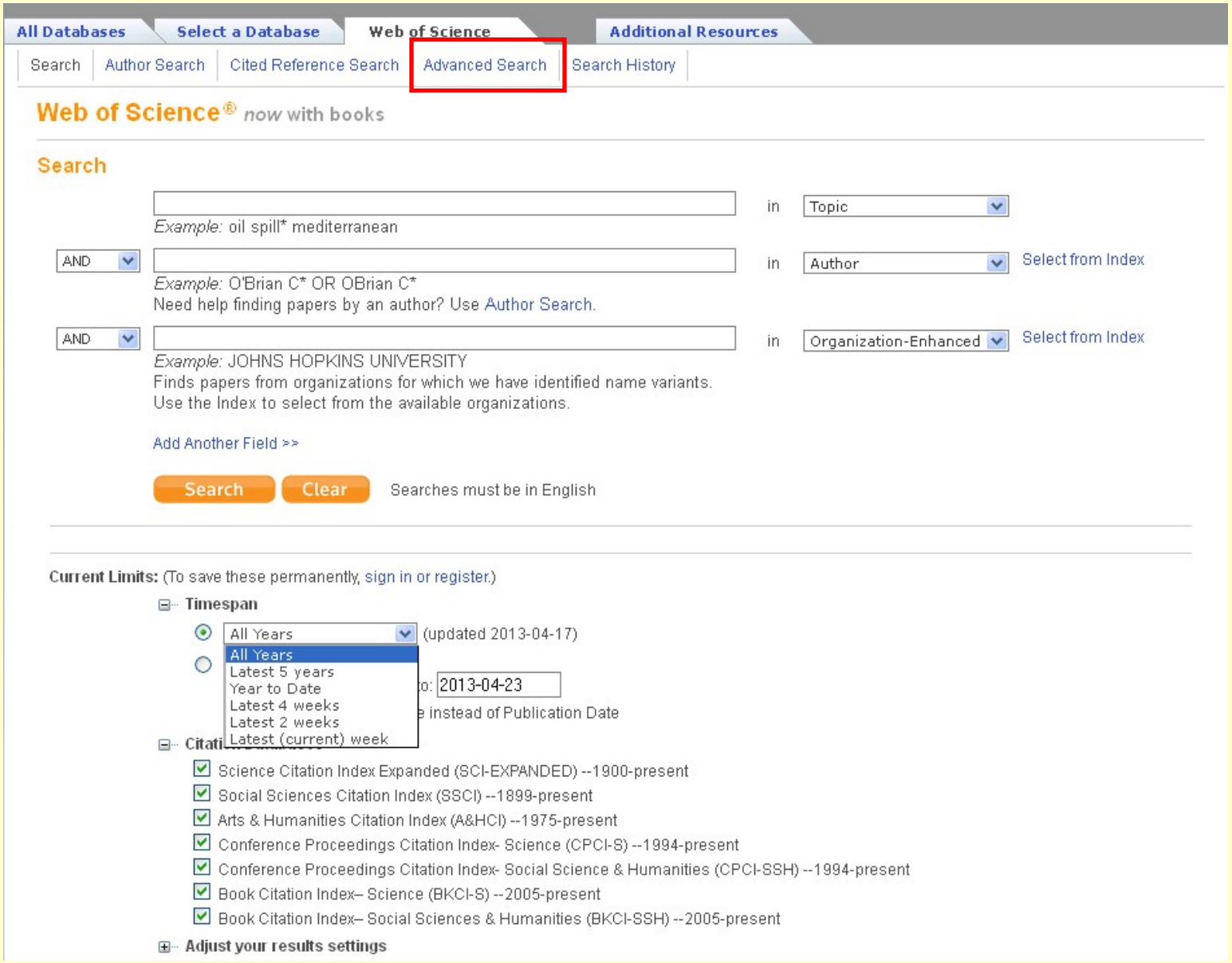

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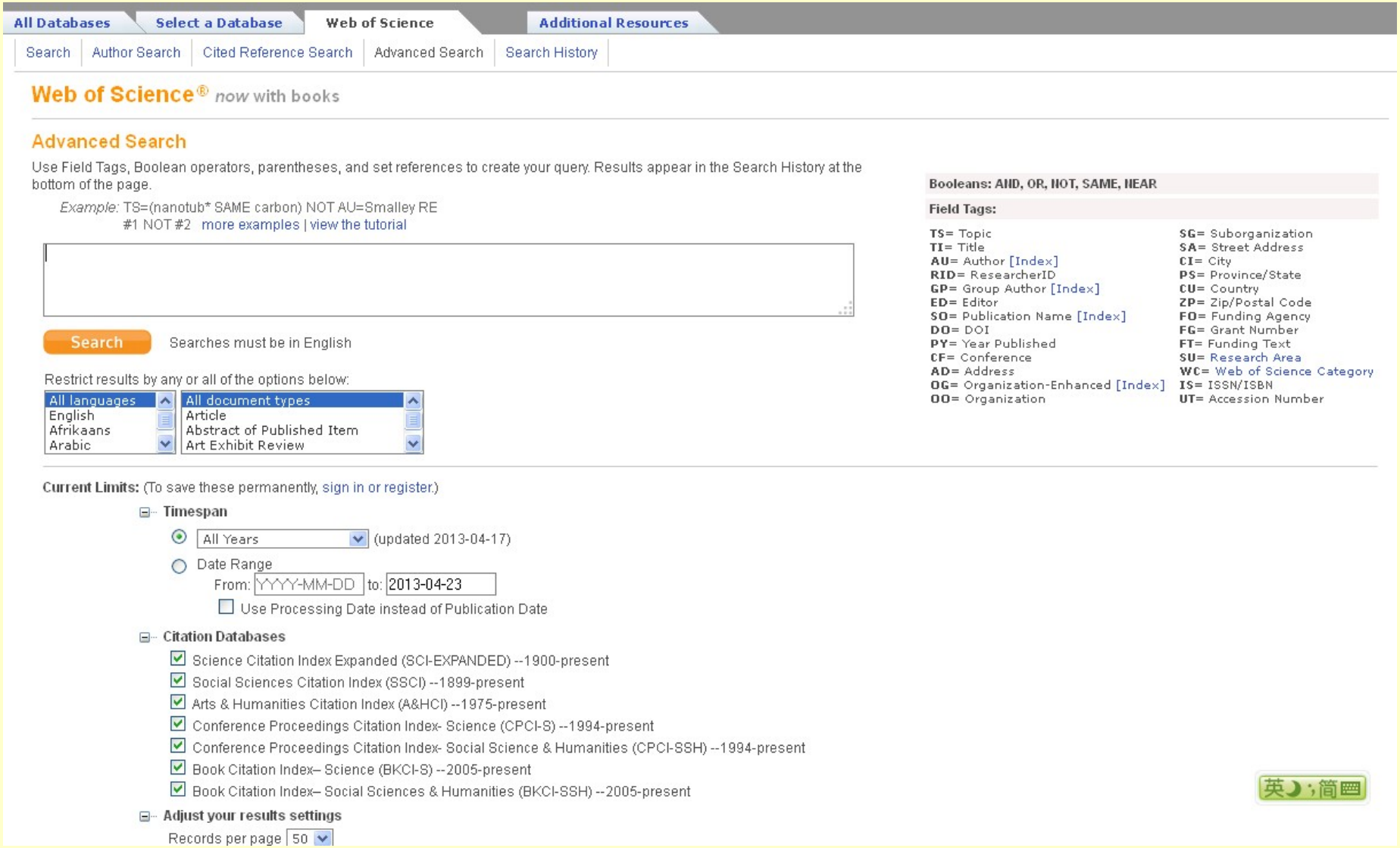

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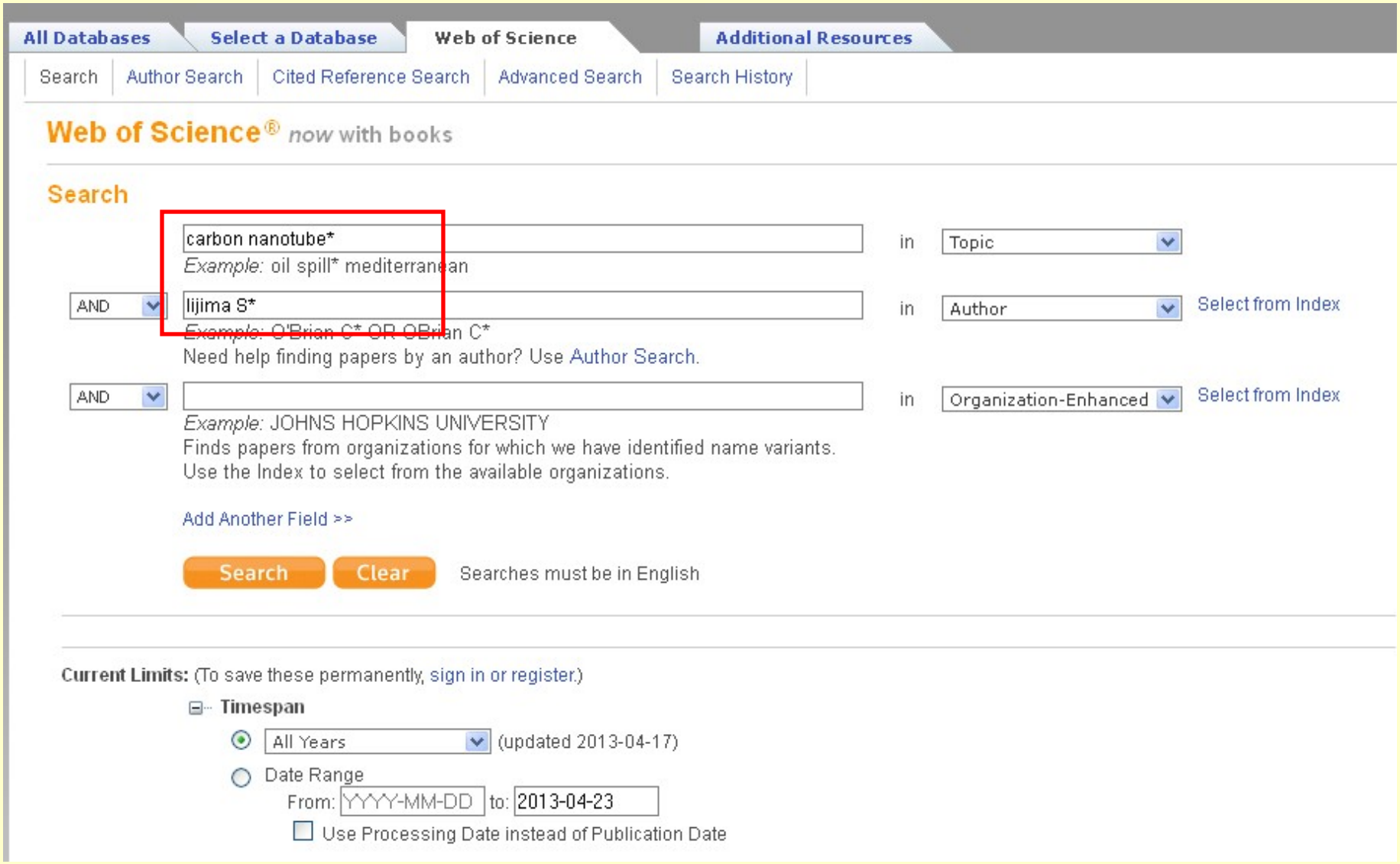

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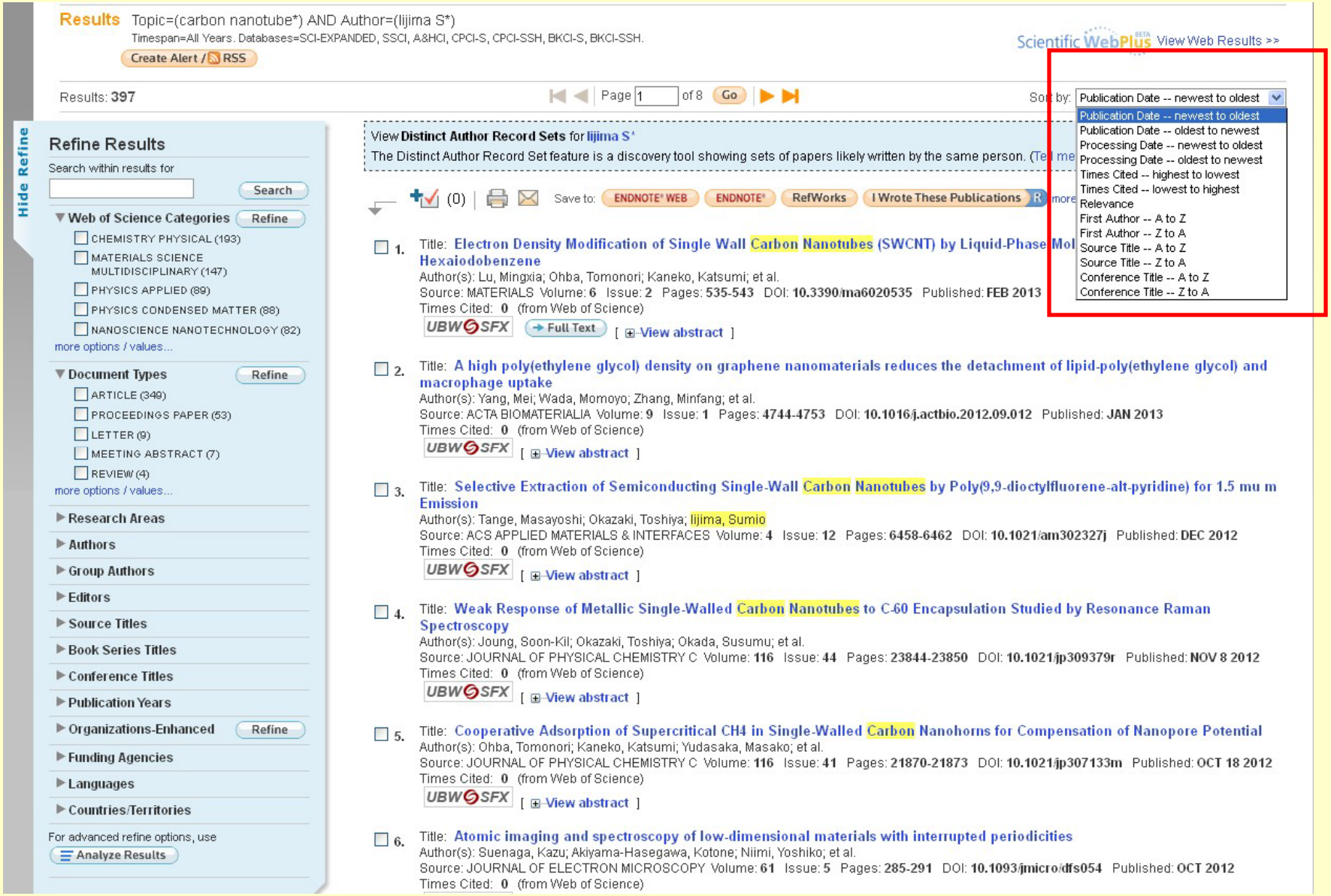

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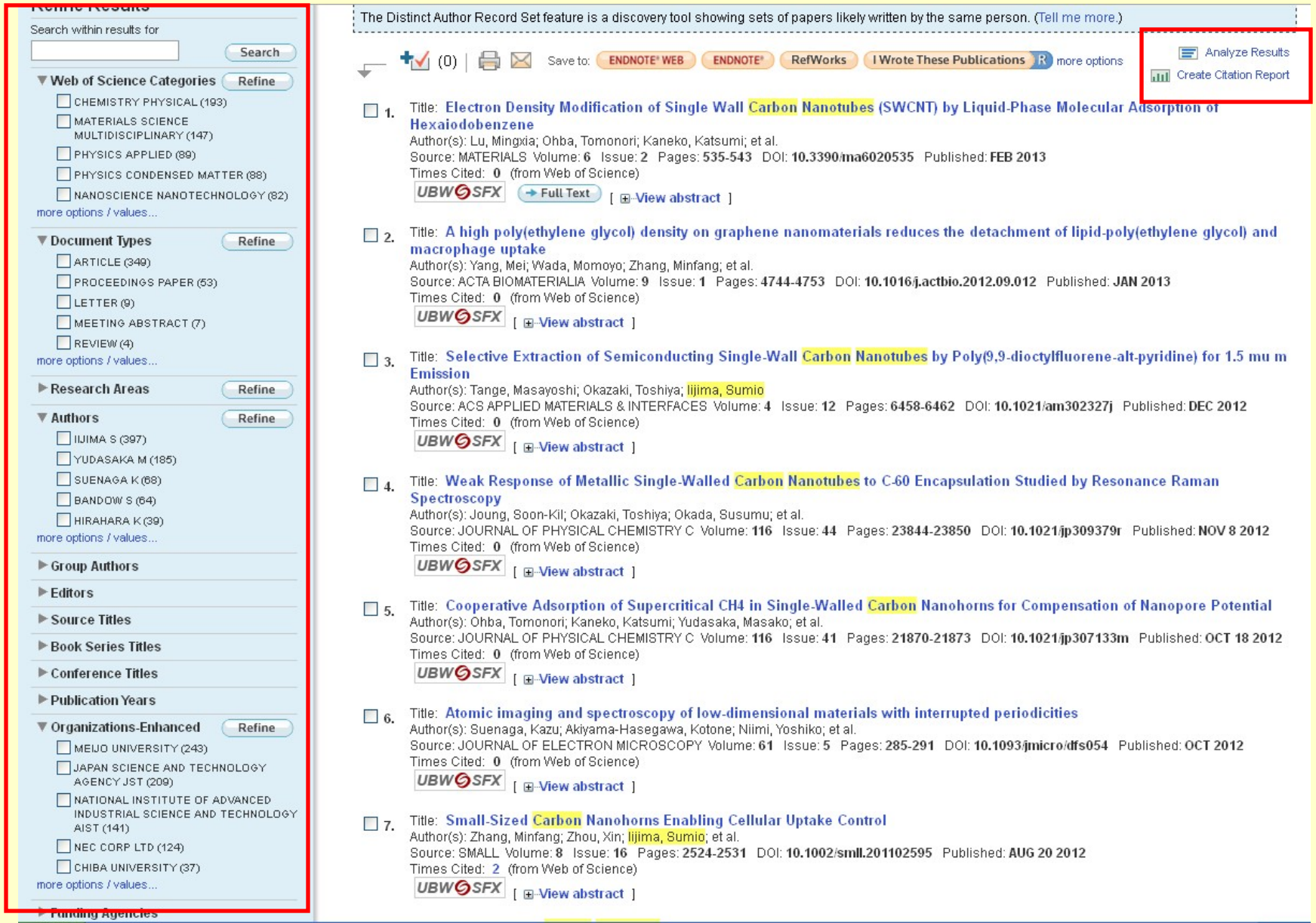

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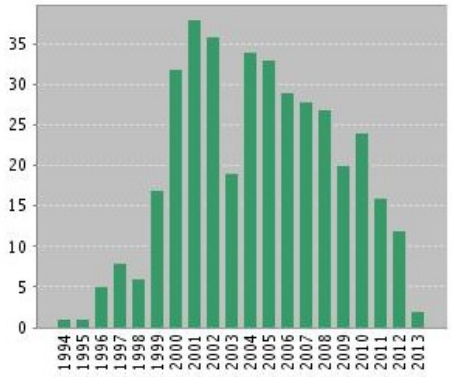

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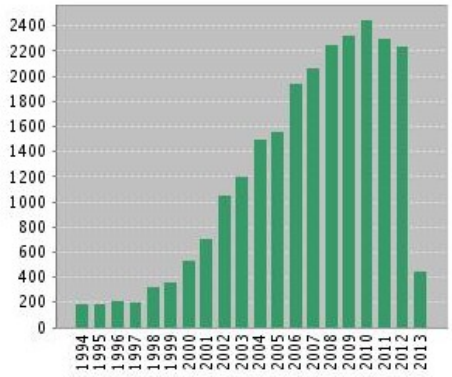

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3. Title: **CAPILLARITY-INDUCED FILLING OF CARBON NANOTUBES** Author(s): AJAYAN, PM; IIJIMA, S Source: NATURE Volume: **361** Issue: **6410** Pages: **333-334** DOI: **10.1038/361333a0** Published: **JAN 28 1993**	55	67	46	35	6	1068	50.86

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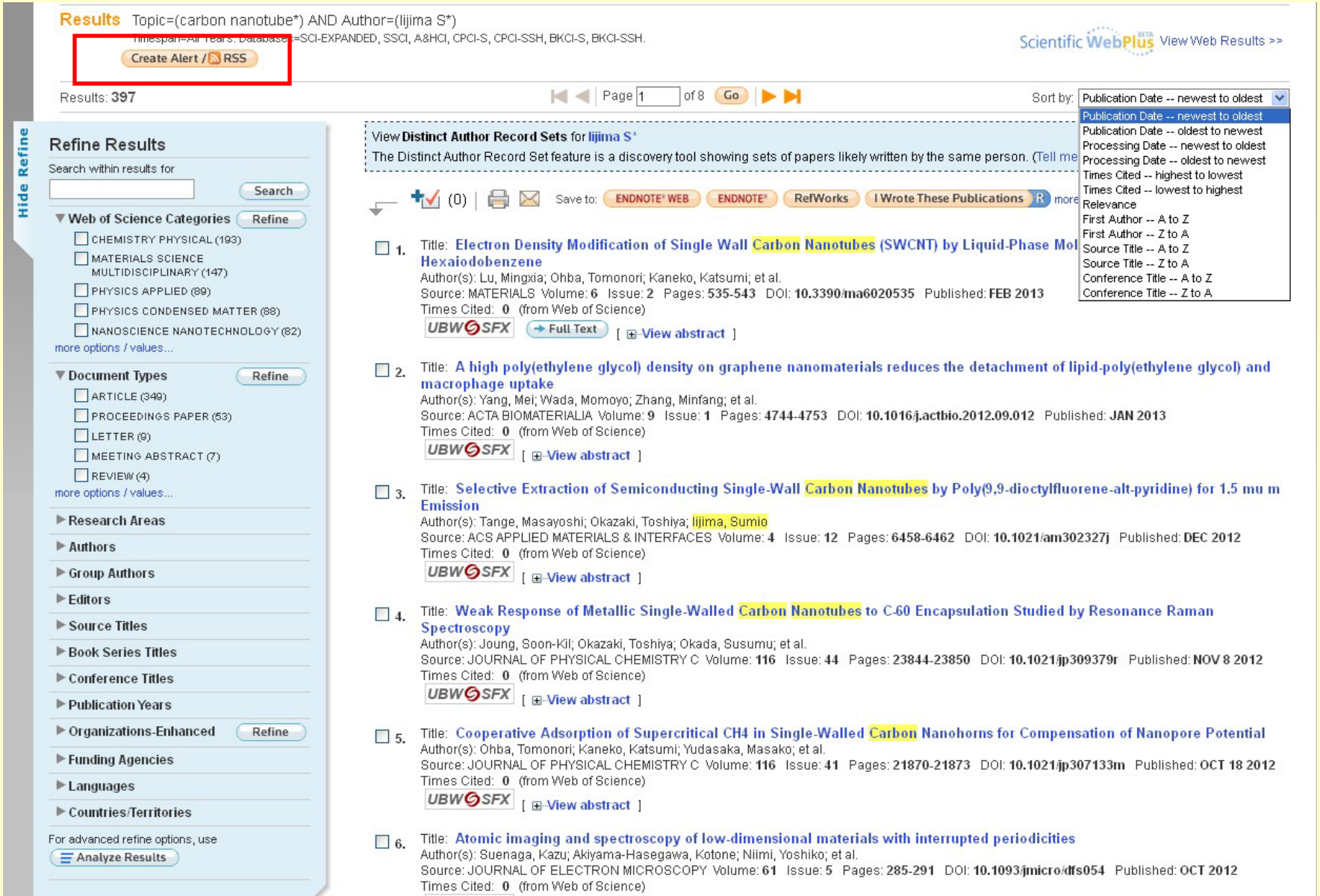

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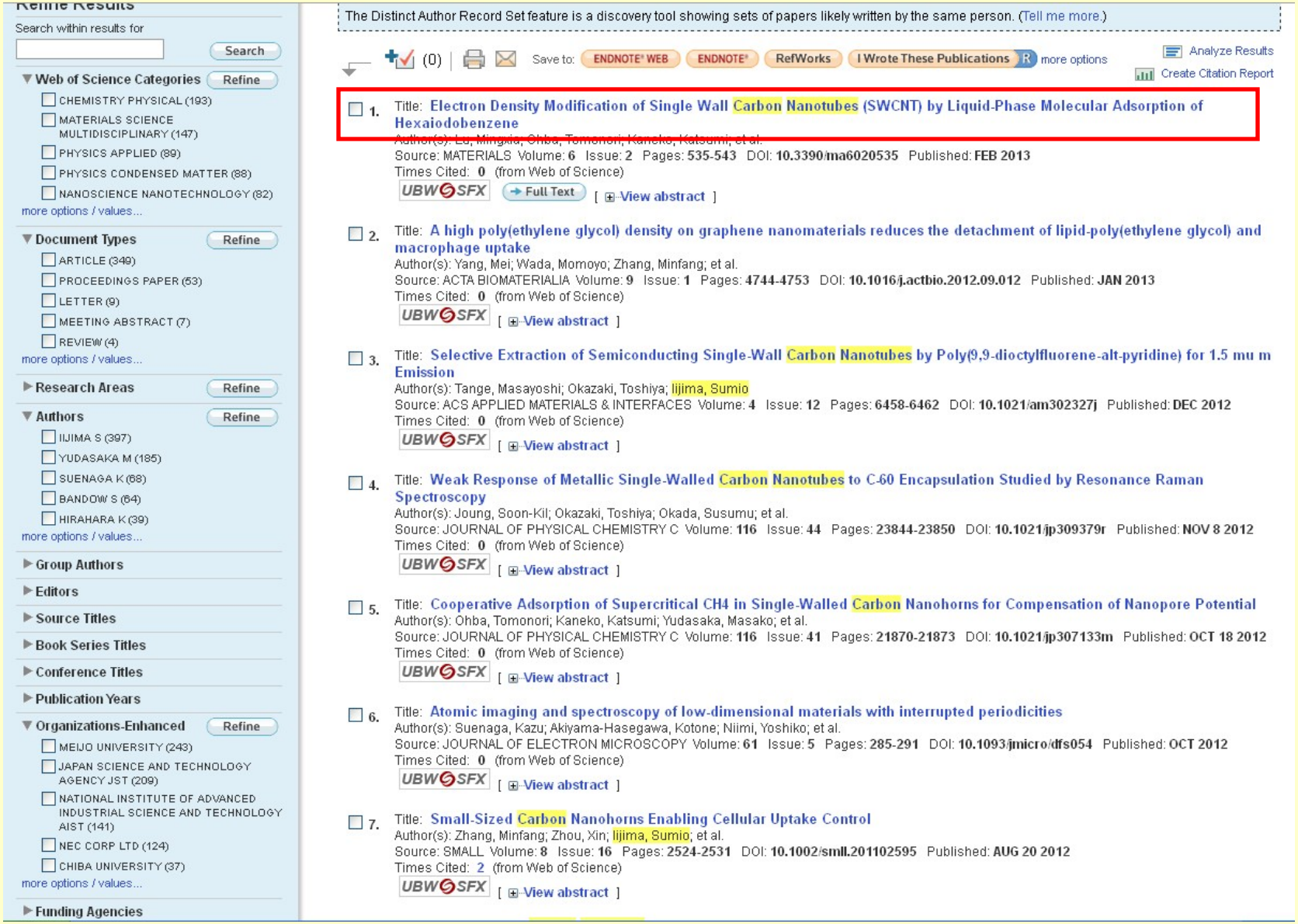

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Author(s): Lu, MX (Lu, Mingxia)[1] ; Ohba, T (Ohba, Tomonori)[1] ; Kaneko, K (Kaneko, Katsumi)[2] ; Hata, K (Hata, Kenji)[3] ; Yumura, M (Yumura, Motoo)[3] ; Iijima, S (Iijima, Sumio)[3,4] ; Komatsu, H (Komatsu, Hiroto)[5] ; Sakuma, A (Sakuma, Akira)[5] ; Kanoh, H (Kanoh, Hirofumi)[1]

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Accession Number: WOS:000315398600010

Document Type: Article

Language: English

Author Keywords: single wall carbon nanotube; hexaiodobenzene; adsorption; charge transfer

KeyWords Plus: CHARGE-TRANSFER; OPTICAL-PROPERTIES; GRAPHENE; SWNTS

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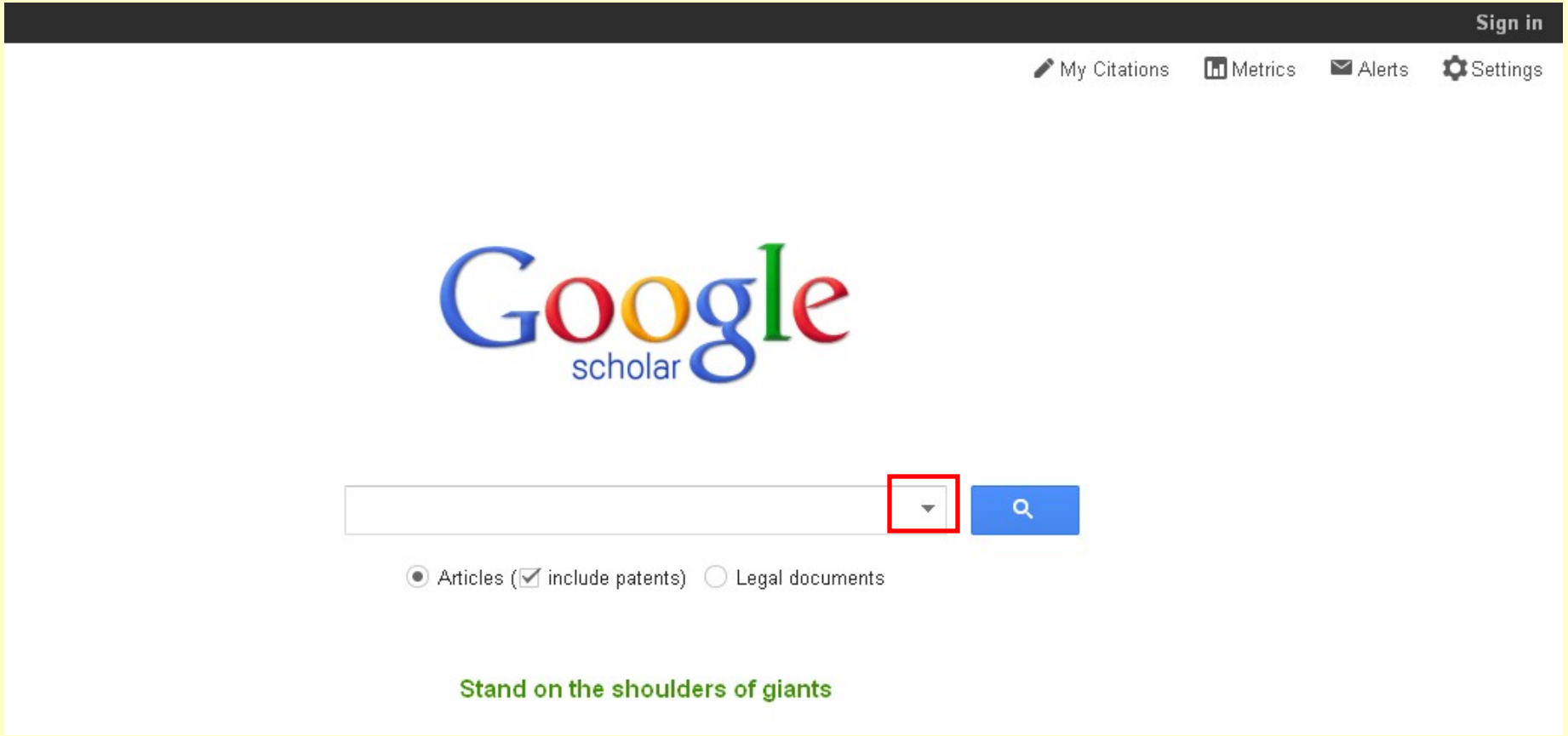

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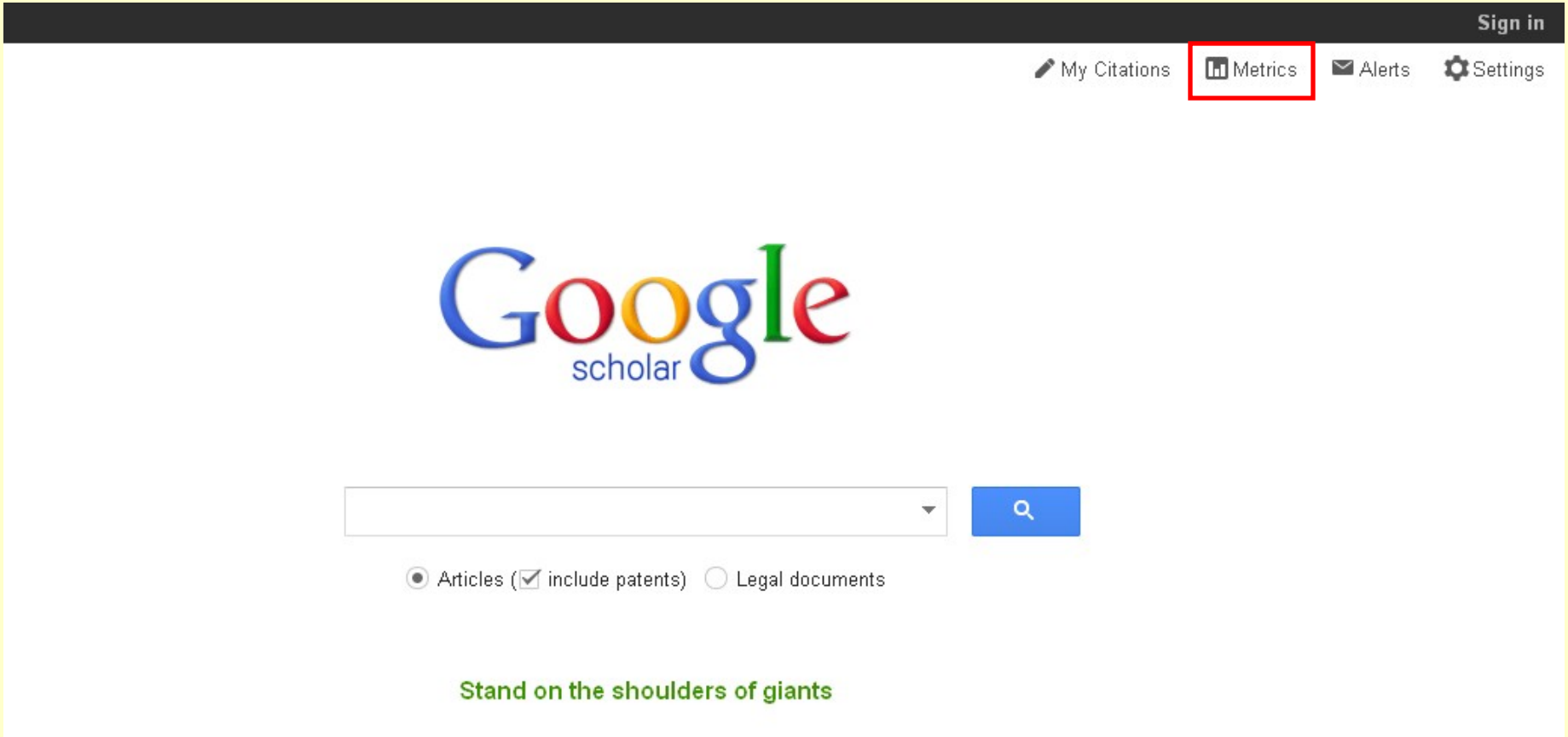

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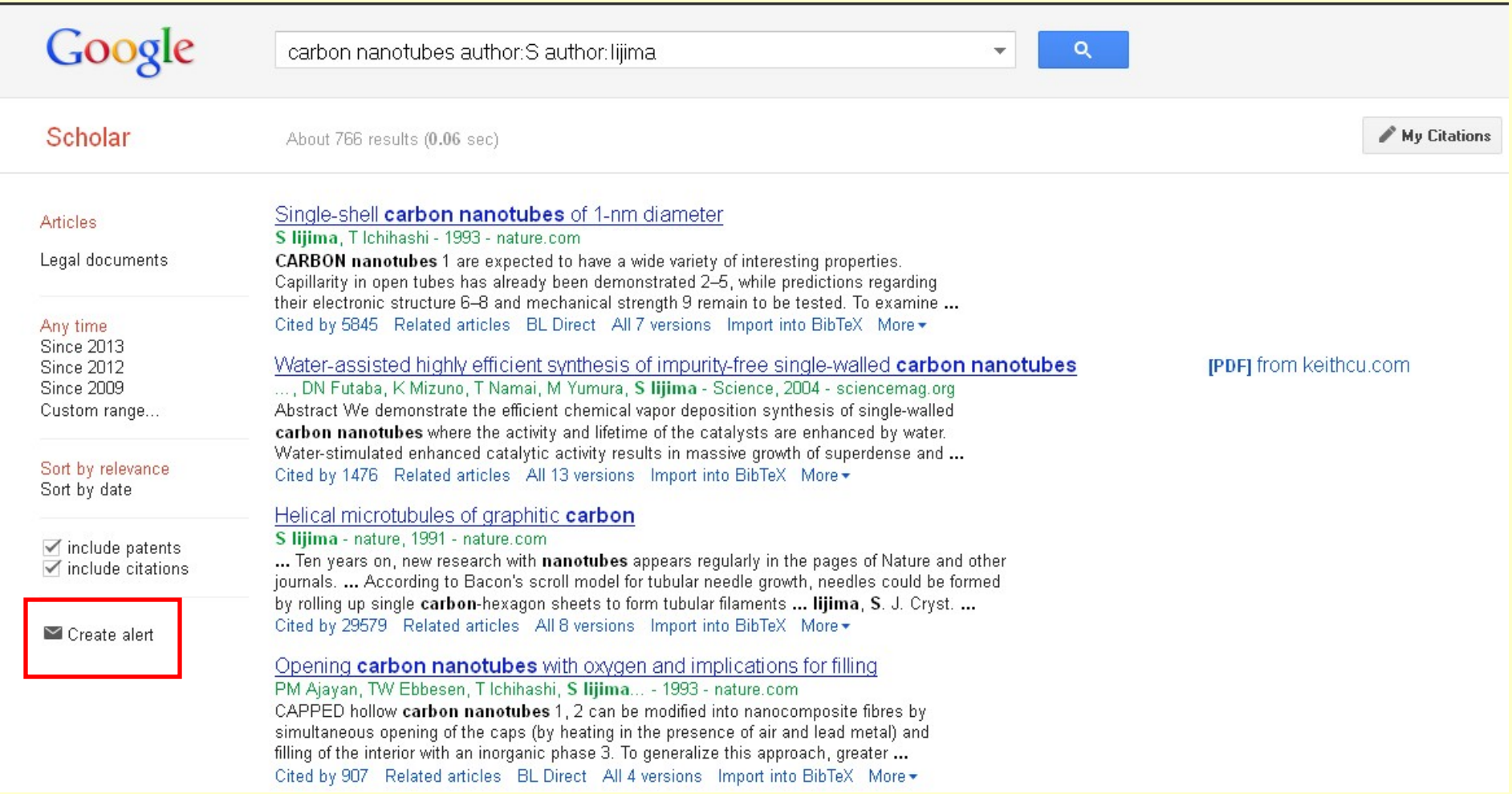

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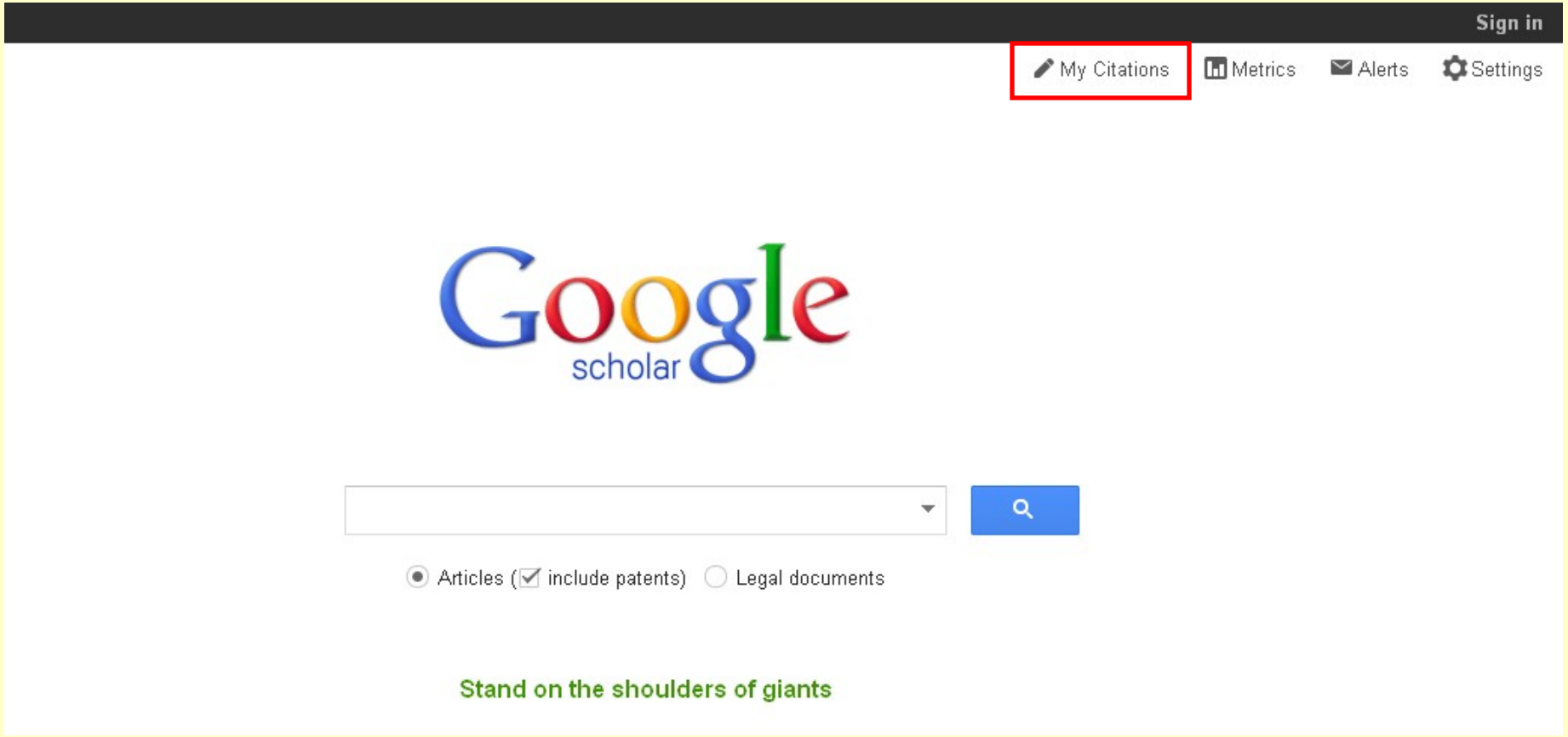

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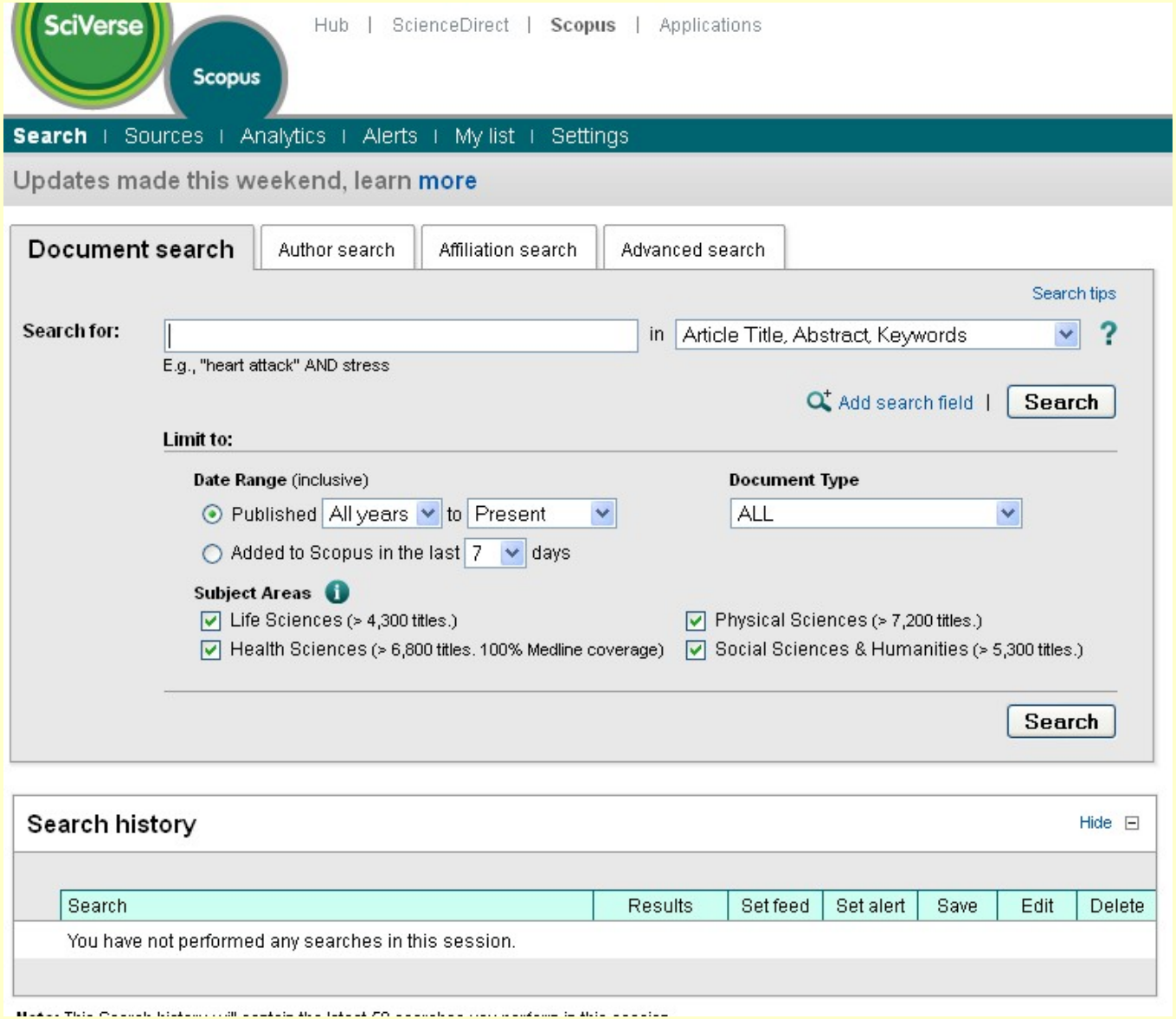
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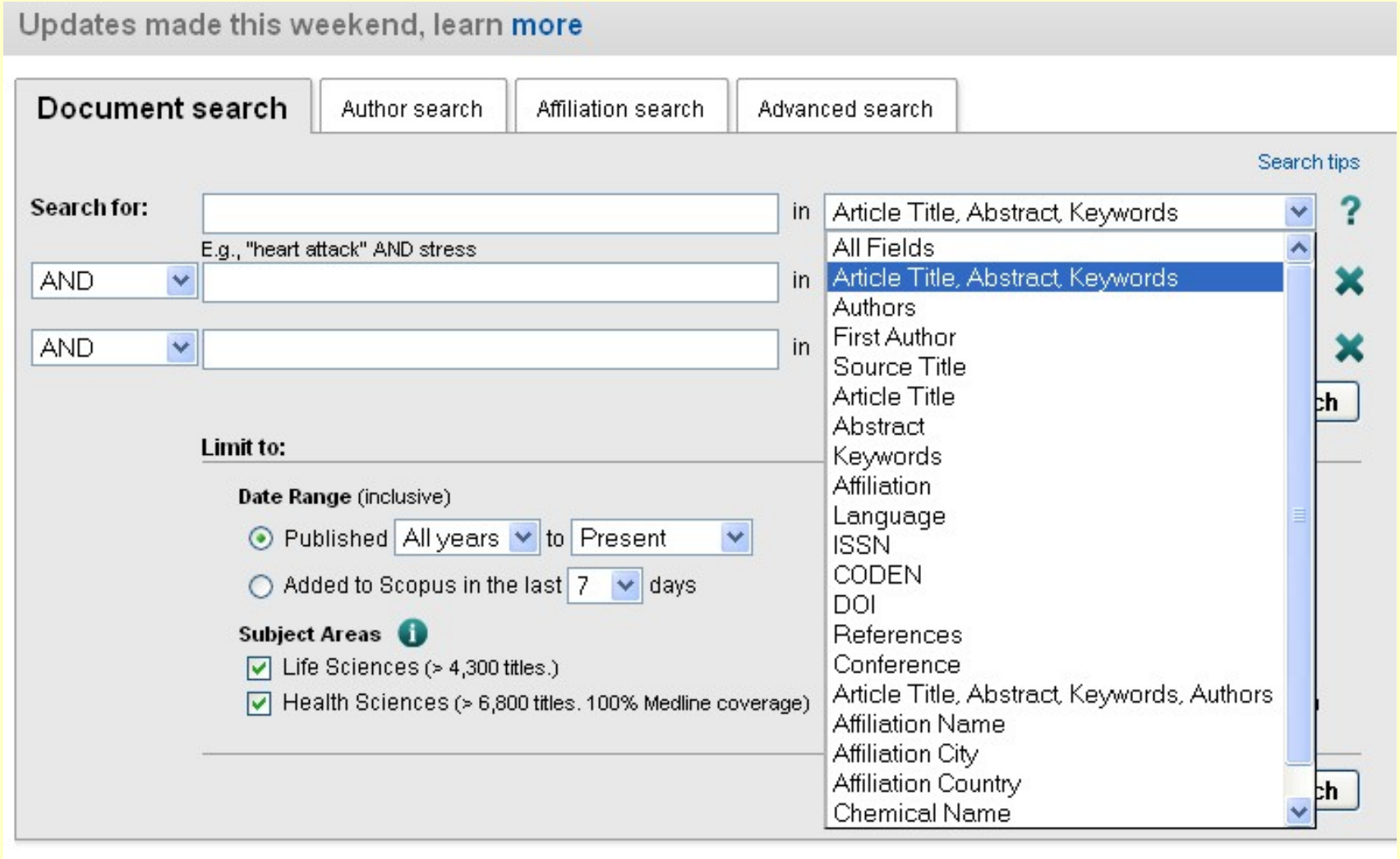
Updates made this weekend, learn more
Document search
Author search
Affiliation search
Advanced search
Search tips
Search for:
in
Article Title, Abstract, Keywords
E.g., "heart attack" AND stress
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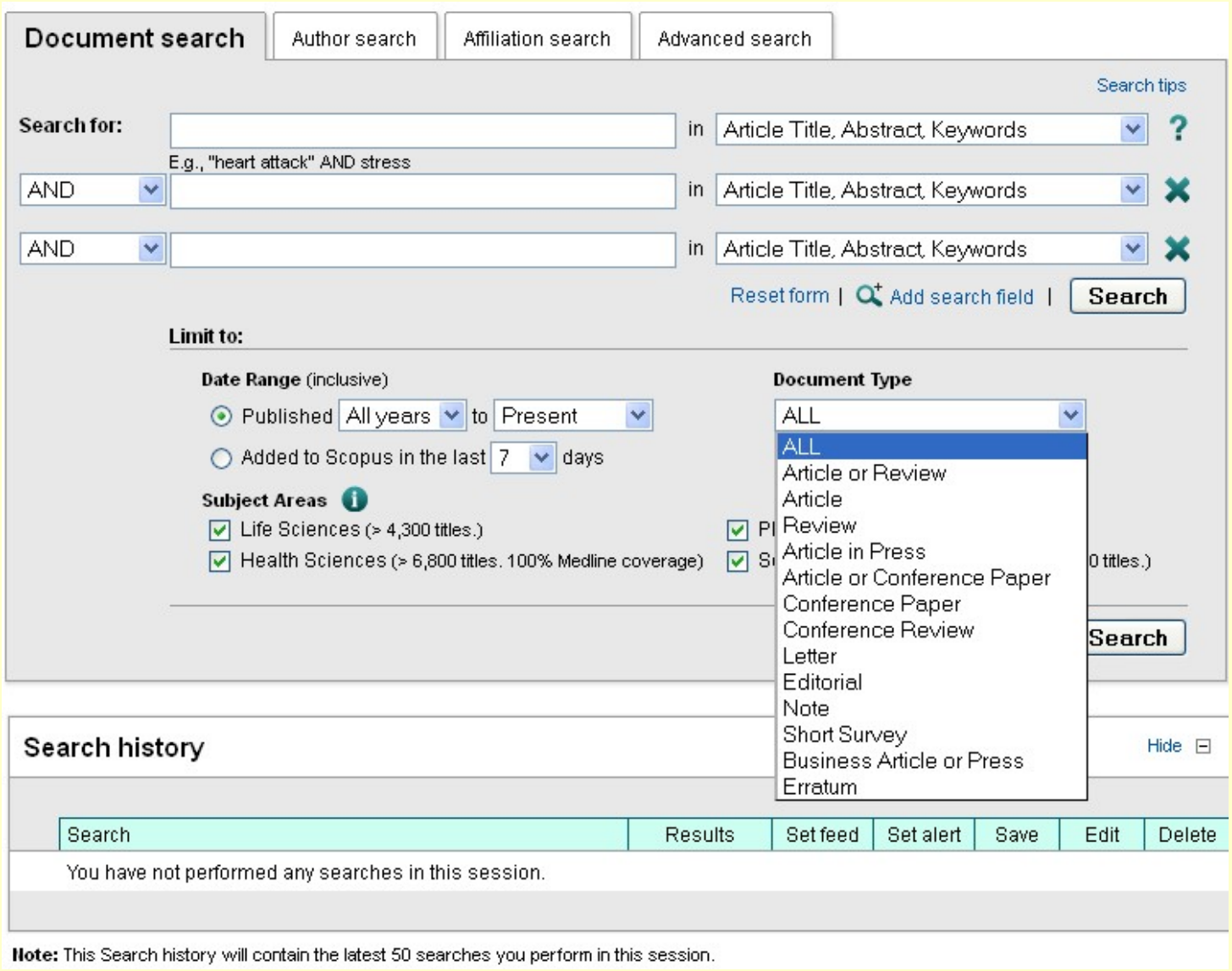
All Fields
Article Title, Abstract, Keywords
Authors
First Author
Source Title
Article Title
Abstract
Keywords
Affiliation
Language
ISSN
CODEN
DOI
References
Conference
Article Title, Abstract, Keywords, Authors
Affiliation Name
Affiliation City
Affiliation Country
Chemical Name
Limit to:
Date Range (inclusive)
Published All years to Present
Added to Scopus in the last 7 days
Subject Areas
Life Sciences (> 4,300 titles.)
Health Sciences (> 6,800 titles. 100% Medline coverage)

Scopus


Document search
Author search
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Advanced search
Search tips
Search for:
in
Article Title, Abstract, Keywords
E.g., "heart attack" AND stress
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Added to Scopus in the last
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days
Subject Areas
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Health Sciences (> 6,800 titles. 100% Medline coverage)
Document Type
ALL
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Article
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Conference Paper
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Letter
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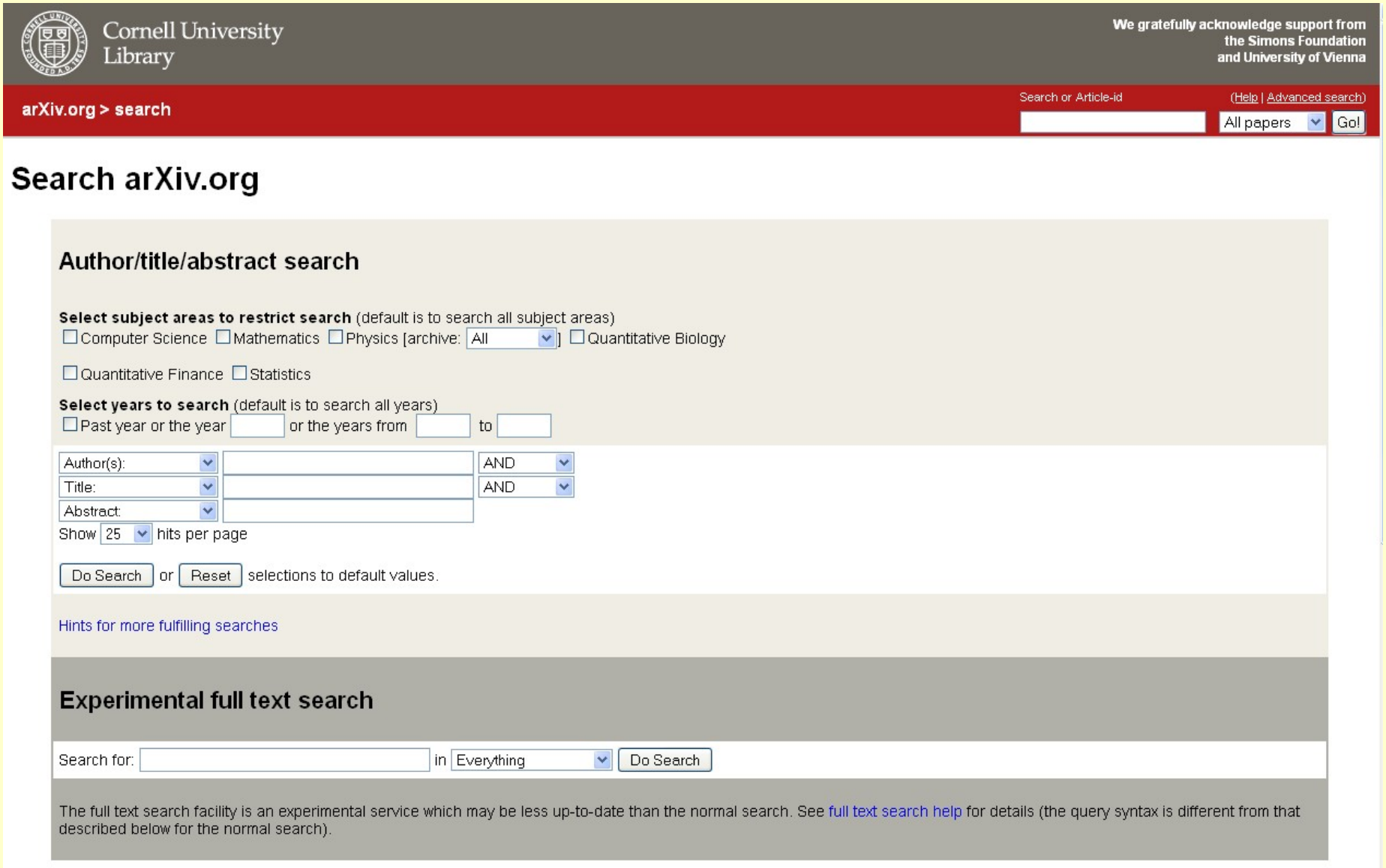
You have not performed any searches in this session.
Note: This Search history will contain the latest 50 searches you perform in this session.

arXiv



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arXiv.org > search

Search or Article-id (Help | Advanced search) All papers Go!

Search arXiv.org

Author/title/abstract search

Select subject areas to restrict search (default is to search all subject areas)

☐ Computer Science ☐ Mathematics ☐ Physics [archive: All] ☐ Quantitative Biology

☐ Quantitative Finance ☐ Statistics

Select years to search (default is to search all years)

☐ Past year or the year or the years from to

Author(s): AND

Title: AND

Abstract:

Show 25 hits per page

Do Search or Reset selections to default values.

Hints for more fulfilling searches

Experimental full text search

Search for: in Everything Do Search

The full text search facility is an experimental service which may be less up-to-date than the normal search. See full text search help for details (the query syntax is different from that described below for the normal search).

Tips for the beginner

- Preparation before the writing
  - Author guideline
  - Word or Latex (Templates)
  - Endnote
  - Reference database (JabRef)
- Writing (Just like telling a story, but…)
  - Using a scientific language
  - Write accurately, clearly, succinctly
  - Beatiful figures
  - Revising your paper as much as possible
  - Look at other papers that have been published in your field

Writing a scientific paper

- **Title**
- **Authors (address, email…)**
- **Abstract (Keywords)**
- **Introduction**
- **Methods (or Experimental)**
- **Results and discussion**
- **Tables and Graphs**
- **Conclusion (Summary)**
- **Acknowledgements (Funding, other people…)**
- **References**
- **Supplementary material**
- **Appendix** …

Types of scientific papers

- Article (Full paper)
- Review (Art of state)
- Letter
- Communication
- Proceeding (ongoing study)
- Comment, Response
- Meeting abstract
- Correction, Note, ITEM …
- ✓Book Chapter

Title

- Make your title specific enough
- The title usually describes the subject matter of the article: " Effect of Smoking on Academic Performance"
- Summarizes the results is more effective: " Students Who Smoke Get Lower Grades"
- Growth of carbon chains inside carbon nanotubes
- Carbon nanotubes as nanoreactors to grow carbon chains

J|A|C|S
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Notice to Authors of JACS Manuscripts

- Titles of manuscripts may not contain the words “First” or “Novel” nor any part number or series number.

Authors (address, email…)

- First author, other co-authors, corresponding author
- Co-first author (These authors contributed equally to this work)
- Corresponding author (Normally, indicated by *, give his/her email address, could be more than one)

JACS
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Article

pubs.acs.org/JACS

Formation and Healing of Vacancies in Graphene Chemical Vapor Deposition (CVD) Growth

Lu Wang,[‡] Xiuyun Zhang,[†] Helen L.W. Chan,[‡] Feng Yan,*[,‡] and Feng Ding*[,†]

[†]Institute of Textile and Clothing and [‡]Department of Applied Physics, Hong Kong Polytechnic University, Kowloon, Hong Kong, People's Republic of China

Abstract

(1) What the objectives of the study were;

(2) How the study was done;

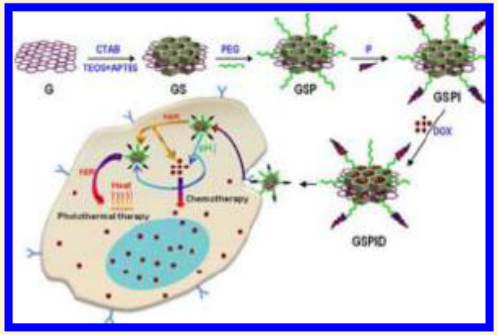
(3) What results were obtained;

- The significance of the results.

Abstract

- Tips
  - The abstract should be a little less technical than the article itself.
  - Your abstract should be one paragraph, of 100-250 words.
  - Don't use abbreviations or citations in the abstract.

ABSTRACT: Current therapy of malignant glioma in clinic is unsatisfactory with poor patient compliance due to low therapeutic efficiency and strong systemic side effects. Herein, we combined chemo-photothermal targeted therapy of glioma within one novel multifunctional drug delivery system. A targeting peptide (IP)-modified mesoporous silica-coated graphene nanosheet (GSPI) was successfully synthesized and characterized, and first introduced to the drug delivery field. A doxorubicin (DOX)-loaded GSPI-based system (GSPID) showed heat-stimulative, pH-responsive, and sustained release properties. Cytotoxicity experiments demonstrated that combined therapy mediated the highest rate of death of glioma cells compared to that of single chemotherapy or photothermal therapy. Furthermore, the IP modification could significantly enhance the accumulation of GSPID within glioma cells. These findings provided an excellent drug delivery system for combined therapy of glioma due to the advanced chemo-photothermal synergistic targeted therapy and good drug release properties of GSPID, which could effectively avoid frequent and invasive dosing and improve patient compliance.



Introduction

- Why is this study of scientific interest?
- What is your objective?

Introduction

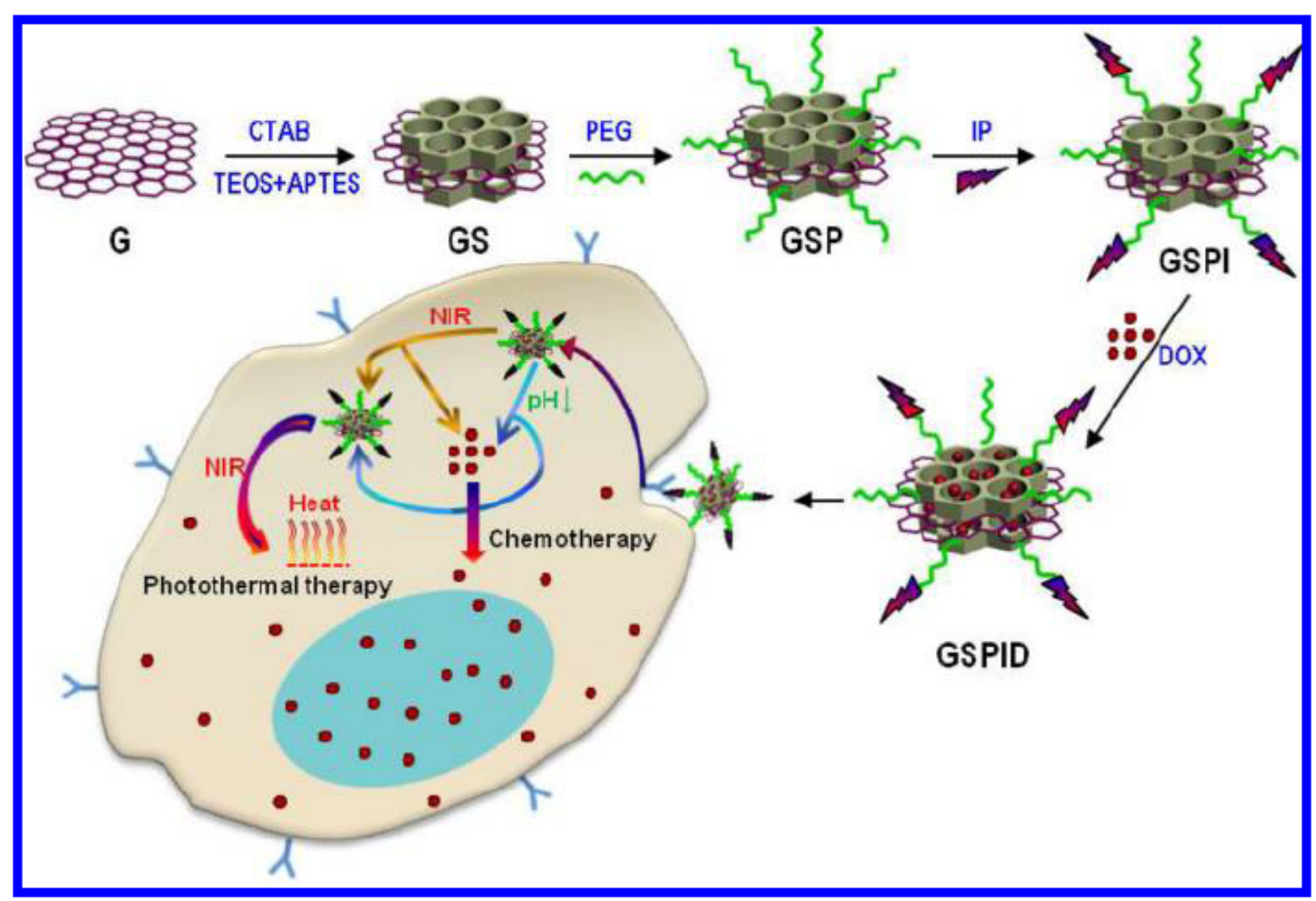
- Tips
  - Move from general information to specific information.
  - Emphasize your specific contribution to the topic.
  - The last sentences should be a statement of objectives and a statement of hypotheses. This will be a good transition to the next section (Method).
  - Make sure you give a full citation.

Methods

- This section provides all the methodological details necessary for another scientist to duplicate your work.

- Tips
  - Do not put results in this section.
  - Include a diagram, table or flowchart to explain the methods.
  - Provide a brief description of characterization

Methods


CTAB
TEOS+APTES
PEG
IP
G
GS
GSP
GSPI
DOX
GSPID
NIR
pH↓
NIR
Heat
Photothermal therapy
Chemotherapy

Results and discussion

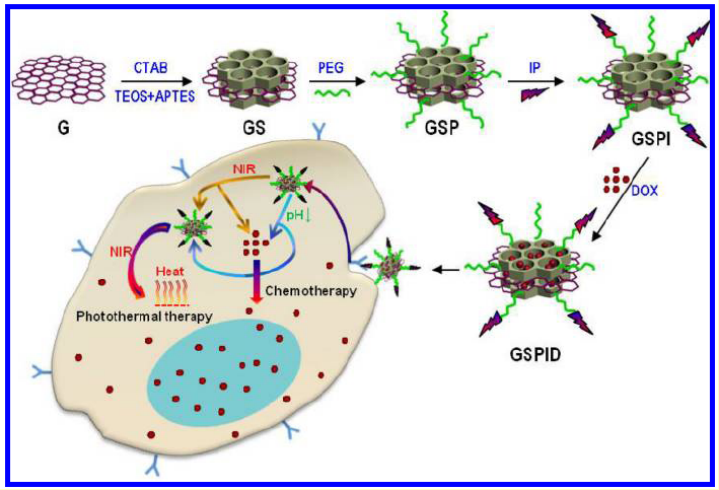
- Present the results you've gotten.
- What the results mean or why they differ from what other workers have found.

Results and discussion

- Tips
  - Use graphs and tables
    - Number tables and figures separately beginning with 1 (i.e. Table 1, Table 2, Figure 1, etc.).
    - You must refer in the text to each figure or table you include in your paper.
  - Interpret your results in light of other published results.
  - Suggest future directions for research, new methods, explanations for deviations from previously published results, etc.
  - End with a one-sentence summary of your conclusion, emphasizing why it is relevant.

Tables and Graphs

- Check the author guideline
  - Format (.tiff, .eps, .png, …)
  - Black and white, or in Color (CMYK or RGB)
  - Size (single column, double column?)
  - Dpi
- Make the figures more beautiful and attractive



Conclusion and Acknowledgements

- Conclusion / Abstract / The last sentences of introduction
- Acknowledgements (Optional)
  - **Funds, fellowship**
  - **Thank those who either helped with the experiments**
  - **Or made other important contributions, such as discussing the protocol, commenting on the manuscript**

References

- In the text, cite the literature in the appropriate places
- In the References section list citations in order (appear, alphabetical).

- Tips (Using the template)
  - The format (authors, title, journal name, year, volume, issue, pages)
  - Latex (JabRef), Word (Endnote)

Supplementary material

- Supporting Information
- Material that is not needed for reading the paper but which should be available to document experiments or calculations for future researchers
- Tables, figures, Videos/movies, …
- Appendices can appear in the Supporting Information

The order for Writing

8 ➢ Title
8 ➢ Authors
7 ➢ Abstract
5 ➢ Introduction
1 ➢ Methods
2 ➢ Results and discussion
2 ➢ Tables and Graphs
3 ➢ Conclusion
4 ➢ Acknowledgements
6 ➢ References
4 ➢ Supplementary material
4 ➢ Appendix …

After the writing

- Using a spellchecker
- Don't Forget to revise the paper by yourself and other co-authors, or other people who are familiar with your research field!

References to this lecture

(1) Notice to Authors of JACS Manuscripts

(2) http://www.columbia.edu/cu/biology/ug/research/paper.html

(3) http://classweb.gmu.edu/biologyresources/writingguide/Abstract.htm

(4) Y. Wang, et al. J. Am. Chem. Soc., 2013, 135 (12), 4799–4804

Thank you for your attention!