

3.091 Fall Term 2009

## Homework #9b

October 29 (to be **submitted** November 5)

This homework assignment is to be *typed, printed out, and TURNED IN* at recitation next week (Thursday Nov 5). This is an INDIVIDUAL assignment, please do not work in groups. It will be worth 5 points.

**To complete this assignment, visit the library web page for 3.091, found at <http://libraries.mit.edu/3.091> or through the link on the 3.091 course page.** Once you have viewed the videos, completing the assignment should not take longer than 30 minutes. If it is taking longer than 30 minutes to complete, please ask a librarian or your TA for help.

In 1987 J. Georg Bednorz and K. Alexander Müller of IBM Labs in Zürich were awarded the Nobel Prize in Physics for “their important break-through in the discovery of superconductivity in ceramic materials.” Visit [nobelprize.org](http://nobelprize.org) to gather more information on your Nobel Prize winning paper, including clues for locating the published article that announced their discovery.

1. Use Web Of Science (<http://libraries.mit.edu/get/webofsci>) to locate the article in which Bednorz and Müller announced this discovery to the world. Please provide a complete citation for the article in ACS Format.

**Example:** Author, A. B.; Author, C. D. Article Title. *Journal Title* **Year**, volume, (issue), page number range.

### ANSWER:

Bednorz, J. G.; Muller, K. A., Possible high T<sub>c</sub> superconductivity in the Ba-La-Cu-O system. *Zeitschrift fur Physik B (Condensed Matter)* **1986**, 64, (2), 189-93.

### HOW TO DO IT:

To begin, I went to <http://nobelprize.org> and found the entry on Bednorz and Müller's prize. The press release for this prize mentioned their findings being published in 1986. I then went to Web of Science (<http://libraries.mit.edu/get/webofsci>) to begin a literature search. I did a General Search, and searched for author Bednorz JG and publication year 1986. There was only one citation that matched.

2. Look at the article found in question 1.
  - a. Do the MIT Libraries own this journal volume in print? If yes, in which library is it located, and what is its call number?
  - b. Is the article available online through the MIT Libraries?

NOTE: You do not have to go to the library and physically locate this journal to answer the question.

### ANSWER:

- a. Yes, in Science (Hayden) Library. QC .Z483
- b. Yes, there is online access for this article.

**HOW TO DO IT:**

I used the SFX link in Web Of Science (when I found the citation in question 1) to see if there was online access to this article. And there is.

I then used Barton (the MIT Libraries catalog – <http://libraries.mit.edu/barton>) to see if there was a print subscription. I did a Title Begins With... search for the journal title. Two different journals were found in Barton, but only one had the correct years. Zeitschrift für Physik. B: Condensed matter is in the Science (Hayden) Library under the call number QC.Z483.

3. *According to the article on superconducting in Van Nostrand's Scientific Encyclopedia<sup>1</sup>, superconductivity was first discovered by H.K. Onnes in 1911. Did Bednorz and Müller cite/reference Onnes in their nobel prize winning article (from question 1)?*

**ANSWER:**

NO.

**HOW TO DO IT:**

In Web of Science, there is a link for Cited References, which shows the 28 citations listed in the Bednorz article. Viewing these citations, I see that Onnes was NOT cited. You can also view the full text of the article, including the citations/references, when using the SFX button for question 2.

4. *How many times has the Nobel Prize winning article by Bednorz and Müller been correctly cited by others?*

**ANSWER:**

7750 (you may need to double check this # in Web of Science, it changes as articles are published)

**HOW TO DO IT:**

I went back into Web Of Science and viewed the record that I had found in for part 1. On the full record screen, there is a link for Times Cited.

5. *How many times has the Nobel Prize winning article by Bednorz and Müller been cited by someone affiliated with MIT? How many of these articles, written by MIT authors, were REVIEW articles?*

**ANSWER:**

80 By MIT

7 were review articles

(you may need to double check this # in Web of Science, it changes as articles are published)

**HOW TO DO IT:**

I clicked the Times Cited link to view all 7749 citations that cited the paper by Bednorz and Müller. On the results screen, I refined my search by Institutions. 80 MIT authors cited the Bednorz paper. I then refined my results by Document Types and selected Review. 7 of the articles written by MIT authors were review articles.

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<sup>1</sup> *Van Nostrand's Scientific Encyclopedia*; Considine, G. D. Ed. Wiley-Interscience: New York, 2002.