

Critical Review for Nano-Powders Class:

- 1) Critical review(s) are due **Thursday May 23** to replace quizzes 1 to 10. Critical review(s) can also replace quizzes 6-10 if turned in by Thursday May 30 (last day of classes).
- 2) The topic of a critical review is a paper that pertains to:
 - a) a published paper whose main conclusion pertains to the subject matter covered in class and notes,
 - b) a published paper on the subject of your Review Report that could be a reference cited in your review or another paper.
 - c) a published paper on the subject of any other review from the class, or any subject listed on the original syllabus.

What is a *Critical Review*?

A critical review in the context of this class is a **scientific argument** against the main conclusion of a published scientific paper **that pertains to any subject covered in the class**.

A **scientific argument** is an argument for an opinion on a scientific subject based on facts (cited in **the literature**), logic, reason (math) and commonly held understandings (cited in **the literature**).

The literature includes peer reviewed journal articles, published books and, rarely, direct quotations from well known experts in the field. The literature **does not** include web pages or ungrounded statements (statements not supported by logic, reason or the literature).

The main hurdles in writing a critical review of a paper are to find a paper that pertains to the subjects covered in the class notes and to develop an opinion that differs from that of the authors which you can support using a scientific argument.

- 1) Find a paper that deals with an area pertaining to the class. You could begin with the review papers on the web page and look at the citations or look at your review and the citations. You can cross reference the papers you have using:
<http://cite.ohiolink.edu/isi/CIW.cgi>
Make sure you pick the science citations box on the second page and all years. Such a cross reference search can be extremely powerful in finding a paper for the critique. Look for papers that cite the paper you have and also look through the papers cited by your paper or others you find in the cross reference search. You are looking for a paper with what you believe are critical flaws in scientific logic and misinterpretation of data.
- 2) You need to find a paper with which you disagree on the main conclusion.
- 3) You need to formulate a scientific argument explaining why the paper is in error based on the literature (i.e. citing the literature). A scientific argument is usually based on known facts (citing support) and well accepted theories (citing the literature). The facts and theories need to be referenced from the literature.

- 4) In your critical review you should include a copy of the paper being critiqued and copies of all relevant literature used by the authors to support their case and that you used to support your critique of the paper. These copies can be pdf files emailed to me, beaucag@uc.edu, or hard copies.
- 5) The critique itself can be short, i.e. 1 single spaced page, or could be longer, up to 3 pages if needed. It is crucial to support your opinions and statements with literature citations.
- 6) Each review can replace up to 3 quiz grades but to replace even 1 grade you need a full review.