

**Report on One Application of Nano-Structured Powders
(Due April 23 at the start of class)**

- 1) Select an application of nanopowders or a specific type of nanopowder either from your research or from your interest.
- 2) Do a literature search and find some papers that give an overview of the topic.
You can do this by a subject search at:
<http://cite.ohiolink.edu/isi/CIW.cgi>
Then do cross reference searches on some of the papers you find.
You should have at least 6 references on the subject.
- 3) From your references write a review of your application of nano-powders that is about 5 pages single spaced not including figures or references.
- 4) Include copies of the papers and copies of the relevant parts of books you reference in your review.

Some interesting topics might include zeolites, nano-scale barium titanate, silica nanoaggregates, titania nanoaggregates, zirconia nanoparticles, silver bromide monodisperse nanoparticles, or applications such as the use of nanoparticles as polymer reinforcing agents, nanoparticles for reinforced elastomers, nanoparticles for UV absorption, nanostructures for hydrogen storage, gas sensors, absorbants and the like. If you can't think of an application search the above web site for nanoparticle or nanopowder and pick something that looks interesting. The more specific your application the easier it will be to write a report.

Some of these reviews will be selected for presentation the last week of classes. If you present your review you will not need to write a critical review.

**Critical Review of a Paper on Nanoparticles
(Due May 30 at the start of class)**

- 1) Find a paper that deals with an area of interest to you and that involves nano-particles or powders. This could be a paper referenced in your midterm report. Use the Web of Science:
<http://cite.ohiolink.edu/isi/CIW.cgi>
or other search engines.
- 2) You need to find a paper with which you disagree on one or several points. The best is a paper in which you disagree with 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 and well accepted theories. The facts and theories need to be referenced from the literature.
- 4) Include a copy of the paper 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.
- 5) The critique itself can be short, i.e. 1 single spaced page, or could be longer, up to 6 pages if needed. It is crucial to support your statements with literature citations.
- 6) Further discussion of critical reviews is given on the web page for Polymer Properties (only parts of this discussion may be applicable).