

Spring 2010

Final Paper

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PHYS 1307 Final Paper

As with all emerging sciences, there is a balance between rushing for the next new idea and ensuring the long-term safety and ethical use of a particular technology. Increasingly, manufacturers are developing consumer products with nanomaterials such as silver nanoparticles that have dramatic chemical and physical properties that are different than the bulk versions of these materials. These tiny new substances, some 100,000 times smaller than the width of a human hair, can be more reactive, more toxic, and more accessible to critical organs like the brain than their larger counterparts. In addition, who will benefit with these new technologies – will nanotechnology level the playing field, or will it further the divide between the have and have-nots of our world?

For this paper, I want you to explore an ethical or environmental issue of nanotechnology and offer an opinion on how to solve or deal with that specific problem. Possible areas of topics include the following, and please see TLEARN for a list of links to aid in your topic choice.

1. Environmental concerns
 - a. Toxicity studies of nanomaterials
 - b. Ethical ways of disposing nanomaterials
 - c. Protecting worker's safety
2. Ethics of nanotechnology
 - a. Will all societies benefit from nanotechnology?
 - b. How should we evaluate the positive impacts of nanotechnology?
3. Green Nanotechnology
 - a. Can nanomaterials be produced in green ways?
 - b. Can nanomaterials solve current global environmental problems?
4. Regulation
 - a. What bodies should regulate nanotechnology? (government, scientists, FDA, EPA, a group of pitchfork wielding citizens?)
 - b. At what step should nanotechnology be regulated - attempts to control market entries, price, wages, pollution effects, employment for certain people in certain industries, standards of production for certain goods, etc.
 - c. Should nanomaterials be regulated differently than their bulk counterparts?

IMPORTANT DATES:

Thursday April 1st

Class held in the library to learn about the science reference material available

Tuesday April 20th

Annotated Bibliography Due

Thursday April 29th

Paper due in class

Paper Mechanics:

- Paper is to be 5-7 pages in length, 1 inch margin, 10 or 12 point font, double spaced, justified.
- You must have at least 3 references
- You must use proper citations with a bibliography at the end of the paper
 - If you are summarizing a part of an article or book, indicate the source with either a superscript¹ or [1] where 1 corresponds with the source in the bibliography
 - If you are quoting a part of an article or book, use proper quotation marks

Grading Rubric:

	Comments	Points
Mechanics Correct length Number of refs Proper citations	-	/20
Material covered Clear description of issue Clear opinion given Evidence given to support opinion		/40
Grammar/Style of writing		/20
Annotated Bibliography Correct citation style Clear summations of sources Evaluation of sources		/20
Total		