

The following are a few potentially interesting topics for midterm papers. Remember: these papers should be no more than 10 pages, and should be based on at least *two* papers from the recent literature. I want you to do more than just paraphrase journal articles. Rather, you should analyze and synthesize based on them – give me some critical thinking and intellectual contribution of your own! For example, you could compare and contrast the approaches or results from two papers, or you could explain how one builds on the work of another. Feel free to be critical. Not every paper is perfect. If you think some assertion in a paper is not backed up by the data, then feel free to say so. Make sure you give some introductory material. That is, assume your audience is technically literate (no need for a “Throughout history” kind of intro) but not necessarily a hardcore expert. *Always* be careful about adequately citing and crediting the work of others. The midterm papers will be due Wednesday, February 25, 2009, and ***must include a signed honor pledge!*** Don’t test me about plagiarism. See the course webpage to refresh your memory about my policy on this topic, and if you have not already done so, please turn in the signed sheet that says you’ve read and understood my policy.

I strongly suggest using ISI’s Web of Science searchable online database to hunt for papers of interest and chase down references. You can get to it from the Fondren Library webpage under “Electronic Indexes”.

Topics:

Interesting nanophotonics systems

- Optical devices based on semiconductor nanocrystals
- Light emission from Si
- Optical switches and modulators based on polymer nanostructures
- Nanowires and nanotubes as optical devices
- Plasmonic systems (waveguides)
- Novel near-field optical systems
- Single-photon sources based on nanostructures
- Nanostructured materials for novel spectroscopies (SERS, SPR)
- Light emission and spectroscopy in STM or other plasmonic systems