

Project Description

This project will allow you to focus on an area of complex fluid rheology and structure that is of interest to you. The range of topics is broad, the topic that you choose can be anything that relates to complex fluid structure (characterization, modeling...) or rheology (experimental techniques, novel systems, flow induced phenomena...). If you have no predetermined interests, then use the later chapters of Larson's text to find interesting topics. Then you will be required to scan the literature and find a journal article in that area to summarize and provide a critical review of that article.

Objectives:

1. To gain a deeper knowledge in a specific area of complex fluid research.
2. To become familiar with the literature.
3. To develop the ability to perform critical analysis of the research of another group.
4. To practice technical writing and communication skills.

Deadlines:

October 3, 2001*: Article choice due.

October 10, 2001: Review is due.

*Please send me e-mail with the title and reference of the article that you have chosen to review. I do not need copies of the articles. If you have not had time to narrow down the field to a specific article, then send the references for a few and indicate that you are still in the process of deciding.

Paper

The paper itself should not exceed 5 pages in length, *including* figures and tables. Figures and tables should only be included when absolutely necessary to make your point, and not simply to fill space. There should be an abstract, main body of the text and list of references. The list of references does not need to be included in the 5-page limit. Please include a copy of the article – you may refer to figures in the article in your paper rather than reproducing them.

Another one half of the paper should be devoted to summarizing the archival journal article that you have chosen. In the summary of the article do *not* plagiarize or paraphrase the authors. The purpose of the summary is to bring your audience up to speed on the article and give the background needed to understand your review.

The second half of the paper should provide a critical review of the journal article. You should clearly state the contribution of the authors to the field and discuss the scope of the article within its field. For example: was this the first discussion of this topic, did the authors create a new area of research, did they develop a new technique, and did they prove a theory correct/incorrect? In the critical review you should discuss any major errors/mistakes in the authors' thinking and development. The important question to

address is: Would you recommend to the editor of a journal that this article be published?

Grading:

Comprehension (40%): You must demonstrate that you understood the field and the chosen article, both the details and why (or why not) the work was important. This will require that you can demonstrate an understanding of the field, so you will have to read more than just the article you have chosen.

Critical Thinking (40%): You must demonstrate some critical thought. What was good or bad about the article (and not just bad choices of symbols in the figures!)? Should the authors have done more or gone in a different direction? Are there any mistakes in the work? Should this have been published in the first place?

Presentation (20%): The review must be well written, free of grammatical and spelling errors and carefully edited. The review must be word processed, single sided, double spaced and at least 10pt font. If I get bogged down in poor writing or grammatical mistakes, **I will stop reading**. If you are unsure about your writing skills, have a classmate or friend proofread your work.

Representative Journals (all available at CMU), many are online (see CMU Libraries web site):

- *Journal of Rheology*
- *Rheologica Acta*
- *Journal of polymer science. Part B, Polymer physics*
- *Macromolecules*
- *Langmuir*
- *Colloid and polymer science*

This is a representative list, there are many other related journals and you are free to use any of them.

Guidelines:

The article that you choose should have been published in the last 2-3 years.

Do not chose a purely experimental article and then simply report on it. If you do chose an experimental article, then your review should include some discussion of the analytical technique used and the ramifications of the work.