

Project Reports

Here is a summary of what you should consider for preparing the reports.

Projects (in the order they will be presented on Thursday)

Here are two questions to address for each project. I expect a clear answer will be given to at least the first question in the oral report. At a minimum, I expect answers to both with be given in the written report. You are welcome to go beyond these questions to whatever degree you desire. I would appreciate that you consult with me before you do.

Spectrometer Energy Calibration

What are the offset, slope, and random errors of the spectrometer calibration curve?

How accurate can we generally consider reported values of binding energies from XPS to be?

Pass Energy Calibration

How do signal/background and energy resolution depend on pass energy?

How well does this behavior agree with theory?

Polymers

What are the significant qualitative differences in the spectra for each polymer sample?

How well does each spectrum compare with what we expect?

C/SiO₂/Si

What is your estimate of the oxide and carbon layer thickness?

How appropriate is ARXPS for determining layer thickness?

Oral Reports

The total time per group should not exceed 10 min with questions. With 6 groups, this gives just over one hour for the presentation time. Adding about 5 min of questions per group gives about 1.5 h total. I have scheduled 2 h in case we have any further information to consider.

You can either present on your work as a group or as an individual. I do not care, but I must know which way to consider your oral presentation for grading purposes.

I want photocopies of all of the presentation pages you use during your presentation. They will be collected after the oral report is given.

As A Group

Each person should in a group should take no more than 5 min to present an aspect of the project. I suggest the format below.

1. Title Slide (person 1)

What was the project and who was in the group?

2. Experimental Details (person 1)

What measurements did you perform?

3. Results and Discussion

What did you see and what do you think it mean?

Option 1: person 1 does all the results, person 2 does all the discussion

Option 2: person 1 does one aspect of the results and discussion; person 2 does another

4. Conclusions (person 2)

In conclusion, our group learned

As An Individual

1. Introduction Slide

What was the project and who are you?

2. Experimental Details

What measurements did you perform?

3. Results and Discussion

What did you see and what do you think it means?

4. Conclusions

What did you learn?

Written Reports

Each person must do their own written report. You are welcome to work together as a group on the calculations and aspects of the evaluations. You may decide to draw your own conclusions and do additional analysis that you may not show as part of the oral presentation for your group.

I suggest the format for the written report be as follows:

Title Page

Body of Report

I. Introduction

What was the objective was and what is the key result?

II. Experimental Details

What measurements did you perform? (I want the details as though this were being submitted for publication to a scientific or engineering journal).

III. Results

What did you see?

IV. Discussion (may be combined with above)

What does it all mean?

V. Conclusions

I learned that

References (start a new page)

Tables (each on a separate page, numbered sequentially for reference in the text, showing calculated results or tabulated values)

Figure Captions (start on a new page)

Figures (each on a separate page numbered sequentially for reference in the text)

The body of the report should be no more than five pages. It must be typed with no smaller than 12 pt font double spaced on white paper with 2.54 cm margins all around.