

# PHYSICAL CHEMISTRY LABORATORY

Spring 2002  
<http://academic.scranton.edu/faculty/cab302>  
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Lab Text: "Physical Chemistry, Methods, Techniques, Experiments", Sime, Saunders, 1990.

The experiments for a given period will be assigned. Before each experiment, a one page (maximum) abstract of the experiment must be written in the notebook, the carbon copy given to the instructor before the experiment may be started. A carbon copy of all data must also be turned in at the end of the lab period.

The course grade will be a composite of report grades (80%) and laboratory technique. Attendance at all sessions is required.

Laboratory reports for each experiment will be turned in the week after the experiment is completed. A penalty of one letter grade per week (or part thereof) will be assessed on late reports. The report due during the Easter break is due the following lab period. Exception: the report for experiments 10,11 and 12 will be turned in as a single report, due Thursday, May 9.

## EXPERIMENT

## REFERENCE

1.	Infrared Spectrum of Polystyrene	
2.	Particle in a box	Exp. 34
3.	Conductance of solutions	21
4.	Temperature dependence of EMF	22
5.	pKa of a weak acid	19
6.	Viscosity	14
7.	Adsorption from solution	15
8.	Hydrolysis of ethyl acetate	26
9.	Bromination of acetone	27
10.	Spectrum and dissociation of bromine	31
11.	Vibration - rotation spectrum	33
12.	Diatomics Calculation	

## Format for Laboratory Reports

The laboratory report for an experiment in this course must minimally contain the following:

### 1. Introduction:

A brief statement of the purpose of the experiment and the theory behind the experimental procedure.

### 2. Experimental:

A description of the experimental procedure, referenced whenever possible to the textbook or accompanying materials. Deviations from the reference procedures should be noted in this section.

### 3. Results:

Data should be presented in tabular and/or graphical form in this section. The use of spreadsheet software (such as QuattroPro or Excel) will make this section much easier to complete. Explanations of calculations, including sample calculations, should be included, as should statistical computations and sample spectra.

### 4. Discussion:

A brief analysis of the results of the experiment, sources of error, and suggestions for improvement of the procedure. Comparison of experimentally obtained quantities with literature values should be made whenever possible.

### 5. References:

A list of all sources used in the laboratory report.

### 6. Appendix:

Carbon copies of notebook pages, computer output, and spectra should be included in this section.