

CHEM 531 – Team Projects

Each student group is required to complete an individual project; a list of suggested projects is available below. Each project plan **MUST** be submitted by Spring Break (3/13). This project will be described in a formal report due on the last day of the term (4/27)

Your experimental plan should include and clearly articulate each of the following:

- Project Title
- References (at least 3)
- Research Question(s)
- Planned Experiments and Analyses – make sure to sufficiently develop your plan so that the professors can appropriately evaluate it.
- Required Chemical, Supplies, and Equipment. Be thorough. If you don't ask for it, you will not have it available for your use.

Below are a few suggestions. You are strongly encouraged to explore other projects that interest you.

A. From Exp. 1 (Zeolite), p. 43:

- Independent Studies A **and** B: Thermogravimetric analysis of NaX and investigation of vapor adsorption for determination of pore size

B. From Exp. 2 (Superconductor), p. 25:

- *Independent Study F: Potentiometric titration for determination of copper oxidation state in $YBa_2Cu_3O_x$ ***

C. From Exp. 5 (Electrolysis), p. 99-100:

- Last portion of textbook experiment (p. 99) **and** Independent Studies A **and** B: Characterization of $K_2S_2O_8$ and preparation of a tetrapyrindinesilver(I) complex of peroxodisulfate
OR
- *Independent Study G: Preparation of $[P(C_6H_5)_3H]_2CoCl_4$ by electrooxidation of cobalt***

D. From Exp. 7 (Amino Acid Complexes), p. 230:

- Independent Study A **or** B **or** C: Determination of stability constants – effects of metal, ligand or ionic strength

E. From Exp. 8 (Paramagnetic Coord. Cpds.), p. 129:

- Independent Study D: Investigation of magnetic properties in manganese oxides

1st Draft Experimental plan due: Friday, March 13th

Final Draft Experimental plan due: Friday, March 27th
(This should account for any feedback provided by the instructors)

Laboratory work: Thursday, April 9th and 16th

Oral presentation: Thursday, April 23rd

Formal report due: Monday, April 27th