**Synthesis of Coordination Compound and Its Chemical Analysis Lab Write up:**

Purpose:

*Each student must get prior approval of their catalyst before starting report.*

A large number of transition metals are used as catalyst. These metals are often used in the form of coordination complexes to alter their activities. Commonly used metals for these coordination compounds are palladium, ruthenium, platinum, and molybdenum. Research a catalyst and explain three types of reactions your selected catalyst is used for. Additional points to include in your research are: what are the draw backs to your catalyst, what are the costs associated with your catalyst, and the type of industry that relies heavily upon your selected catalyst.

Post Lab Calculations (from lab hand out)

Conclusion:

First, you will conduct additional testing to confirm that you have indeed produced tetraaquacopper (II) sulfate monohydrate using the following procedure:

1. Using a small amount (jelly bean size) dissolve in enough water just to get the ppt to dissolve. In the hood, add dilute HCl dropwise until a permanent color change. The HCL has a strong affinity to the ammonia rather than the coper atom and this will cause the ammonium ions to form in solution. Transfer a small amount of this solution to a test tube and heat over a low Bunsen burner flame. Carefully hold a piece of litmus paper into the mouth of the test tube and identify the color of the pH paper. When you begin the heating process call me over and I will verify the color as well.

In the write up of your conclusion, explain why the HCl has a stronger affinity to ammonia than copper (in other words explain the chemistry behind this attraction). Also, indicate the color of the litmus paper and what this color implies about your product.