

## CHEM 251EXAM #2 STUDY GUIDE

**Time:** Wednesday March 18, (1<sup>st</sup> hour of lab in room 1614A)

The exam will be over Biodiesel, Aspirin synthesis, Separation/Purification (#55), and Chromatography (PLKE #5). There will not be any material on the ethanol synthesis lab . It will be 100 pts and you will have an hour to take the exam.

In general, any pre-lab or post lab questions that were assigned to these experiment are good examples of what could be on the test. Also review the solubility labs (PLKE2 and 4)—Still be able to predict solubility behavior. Know basic NMR/IR interpretation. (in regards to Biodiesel).

### **Biodiesel**

Know the reaction equation for the synthesis of Biodiesel from vegetable oil. In the reaction 2 layers formed—know what components were in both layers. Know about the property of ‘viscosity’ and why it’s of concern to people who use biodiesel fuels. How impurities could be detected in your sample. What information can IR/NMR and Mass spec give you about your biodiesel and its purity?

### **Aspirin (PLKE#8):**

Know the reaction equation (you do not need to know the mechanism).

Know how to calculate % yield of the reaction (Bring a calculator!).

### **Chromatography PLKE#5.**

Know the basic principles and definition of chromatography and TLC.

Know basic TLC and column chromatography behavior—how to predict how fast a compound will run on a TLC plate. Know the effect of developing solvent’s polarity on the R<sub>f</sub> values.

### **Extraction (#55)**

Review basic solubility rules and still know how to predict solubility. Know how to predict the solubility behavior of organic acids and bases (amines) Know the flow chart on pg 687 of your text and how to use it to show a separation scheme (similar to Exp 55 prelab--you will be given 3 compounds to separate using the flow chart.)