

**Colorado State University
Fall Session 2012**

**CHEM 431
Instrumental Analysis Laboratory**

**Notes for
Isothermal Calorimetry**

The following is a set of short notes to outline the experiment in question and to provide helpful guidance to those executing the experiment.

- A. Demonstrate the proper operation of the isothermal calorimeter. Perform suitable control experiments to establish baseline operation of the instrument.**
- B. Determine the heat of reaction of 1 M aqueous HCl into a weaker solution of aqueous NaOH. Compare your determination with the literature.**
- C. Measure the metabolic rate of a suspension of yeast cells in a suitable medium. Determine the optimal initial concentration of cells. Follow the time course of the heat evolution. Describe the behavior of the system quantitatively and using images.**