**CHE244**

**Stoll**

**Spring 2020**

**Assignment #4 – Transducer Questions – 15 points – Due April 24th**

1. The Enke text discusses a variety of so-called Limiting Current Transducers in section 4-6 that are incredibly important to a number of common instruments.

Explain what is meant by the term “current limiting”

What electrical property is measured in a flame ionization detector? What is the chemical origin of this change in the electrical property?

What electrical property is measured in a photomultiplier tube? What is the chemical origin of this change in the electrical property?

1. Strain gauges are discussed in Section 4-5 of the Enke text. Describe an experiment or problem you have worked on or studied in Nobel Hall where the use of a strain gauge could provide information useful to the study of that problem.
2. Opto-Interruptors are discussed in Section 4-7. Explain how such a device could be used to detect whether the cover on an instrument is in place or not as a way of protecting the user from harm (e.g., contact with a high voltage power supply).