## Sensors

Requirement 3.1 states that the system must serve as an educational demonstrator or lab device. The design of our system is focused on educating the viewer about the production and usage of hydrogen gas. To accomplish this, the electrolysis unit must have a variety of sensors throughout the system. IUI requirement 11.1 will require the

Since the audience will not be able to see the hydrogen gas throughout the system, in order to demonstrate the production of hydrogen gas, we must have various demonstrations prepared. The simplest is filling a balloon with hydrogen gas, either directly from the electrolysis unit or the material storage, and lighting it to create a controlled explosion. The other demonstrator we have prepared is the fuel cell. This demonstrator will use the hydrogen gas to generate electricity to power a small LED to give the viewers a physical demonstration.

## Labels and Graphics

The rest of the 3.0 sub requirements (3.1.2.1, 3.1.2.2, 3.1.3, and 3.1.4) all discuss the different displays, labels, and graphics throughout the system. In order to display the amount of hydrogen gas produced, we will have a VENTURI TUBE (???). The design also includes a scale to mass the material storage before and after hydrogen storage. This will allow the audience to see the difference in the mass from when the graphitic carbon nitride is storing hydrogen to when it is empty. To satisfy requirement 3.1.4 which requires English units for demonstration purposes, all values will have unit labels that are in standard English units.

Requirement 3.1.3 requires that the design also includes a learning feature about the hydrogen economy and where hydrogen can be used. To accomplish this, our design includes a hydrogen economy infographic, displaying hydrogen production methods, storages, uses, and the end effect the hydrogen can have on the environment.