Plastics have become a critical pollutant in the world’s oceans and landfills. It is estimated that more than 8 million tons of plastic enter into the ocean every year. Given the prevalence of plastic, there is a need and pressure to do research on the effect of its presence in the environment. A challenge that accompanies research on plastic pollution is that there are many different types of plastics that are hard to distinguish from one another. Current methods of detection use Fourier Transform Infrared Spectroscopy. This, however, is very costly and presents a significant barrier to entry for any group seeking to study plastics. Using a regular spectrophotometer, I have developed a promising approach for plastic identification. Using this new method, I was able to successfully distinguish Polystyrene (PETE) from Polyethylene Terephthalate (PETE). These two plastics are commonly used in water piping (PVC) and in disposable water bottles (PETE). These initial results are promising as they show that it may be possible to develop a and cost-effective system for identifying a broad variety of plastics.

**Methods and Materials**

Plastic sample

Plastics and scale

Spectrophotometer

**Results**

- **Figure 1.** Results from tests 1-6 for Wavelength absorption profile for PETE and PVC showing average values across the six trials as well as minimum and maximum values across the trials. 
- **Figure 2.** Results from tests 7-12 for Wavelength absorption profile for PETE and PVC showing average values across the six trials as well as minimum and maximum values across the trials.
- **Figure 3.** Results from tests for Wavelength absorption profile for PETE and PVC showing that they scan consistently.

**Acknowledgements**

I would like to thank everyone who helped me with my research and preparation. I would like to specifically thank Peter and Elena Feater as well as Dr. Salmon for helping me with my experimental design and helping me conduct my research. I would like to thank everyone who at the NHAS stem lab who assisted in the research or gave helpful second opinions.