Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Optical absorption of magnesium nanoblades GEORGE MARSHALL, KEN PODOLAK, SUNY Plattsburgh — Hydrogen cars are not widely distributed due primarily because there are no viable options for long term storage. Magnesium nanoblades may solve this problem, which are smaller than the width of a human hair. These formations can potentially store more than double the amount of hydrogen than current standards. Nanoblades are unique due to their rechargeable nature, which allows it to store and release hydrogen over wide temperature ranges. Also, there is a large surface area which allows a maximum amount of hydrogen to store. In advancement of this field, I examined how visible light interacted with the nanoblades over the entire angular spectrum. This experiment successfully developed a relationship between the angle of light's approach and the nanoblade's absorption of the light, indicating the deposited angle of the nanoblade influences the nanoblade's optical properties. This experiment proves light can be used as a mechanism to store/release hydrogen from the nanoblades, providing a possible energy efficient method to make hydrogen storage more cost effective.

George Marshall
SUNY Plattsburgh

Date submitted: 27 Nov 2012 Electronic form version 1.4