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Experimental Investigation of Light Induced Atomic Desorption TIMOTHY UHER, PAUL VOYTAS, ELIZABETH GEORGE, Wittenberg University — We are investigating the phenomenon of light induced atomic desorption (LIAD). In this effect, alkali atoms which are adsorbed onto nanoporous coatings can be ejected, or desorbed, by the shining of non-coherent light. In our setup, we use a glass cell that is coated with polydimethylsiloxane (PDMS) and filled with Rubidium vapor. As atoms get desorbed from the coating, the vapor density will increase. We can quantify the magnitude of the effect by monitoring the vapor density. This is done by measuring the transmission through the cell of a diode laser beam on resonance with a Rb spectral line. We are able to determine ratios of the vapor density with the desorbing lamp on and off and measure time scales to reach equilibria. The laser is able to be locked onto resonance of a spectral line of either the ^{87}Rb or ^{85}Rb isotopes. From this, we can mathematically model the effect and find how the effect depends on desorbing light intensity, temperature, and vapor densities of the different isotopes. Current results will be presented.

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