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Flow Visualization

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Get Wet Project: Glowing Bubbles

Introduction

The purpose for the creation of my image was to demonstrate fluid flow phenomena for the assignment, "Get Wet". My goal was to create an environment where bubbles were created in a thick liquid and observe the effects. I knew that I wanted to create an image from a creative standpoint and therefore chose to work with black light sensitive laundry detergent. I wanted to photograph flow phenomena that didn't have a quick rate of change. For example, I did not want to photograph rapidly moving water because I would not be able to control my image. Instead, I chose to work with bubbles because they last for a few seconds giving me ample time to take a picture.

Image Purpose

The purpose of the image is to observe bubbles in thick detergent. The intent of the image is to show bubbles minimizing surface area by sharing a common wall. This phenomenon should produce an image that shows in detail the interaction of bubbles while serving to produce a visually pleasing image.

Flow Apparatus

"All" laundry detergent was used to fill one inch by three inch plastic, cylinder shaped shot glasses half way. One shot glass was placed on top of a stand in front of a black

background and then carefully filled with detergent so that no streaks of detergent were left on any other areas of the container. Detergent has fluorescent qualities so a controlled light source was necessary for the project. A black light was turned on in a dark room and placed next to the detergent filled container. Bubbles were then blown in the detergent using a straw.

Visualization Technique

The detergent was not diluted from its original state. Basic black matte paper served as the background while a 16W 12-inch backlight was used to illuminate the substance. I did not use the camera flash while taking the picture because I did not wish to add more light to the environment.

Photographic Technique

The distance from the camera lens to the glass was about 12 inches. I used a six mega pixel Nikon Coolpix 5600 digital camera without the flash. I used the auto setting on my camera because I was happy with the quality of the images it produced and therefore, the aperture and shutter speed is related to the automatic setting. More specifically, the aperture was set at 4.9 and the shutter speed was taken at 1/125s. The focal length was 25.9mm. I did not change the picture in Photoshop at all after it was taken.

Conclusion

The image shows a group of bubbles, differing in size interacting with each other along the wall of the plastic container. I like the image because it shows many layers of bubbles forming a shape similar to a beehive. I also think the image serves as a good example of dispersion as bubbles are 95% gas and 5% liquid. I could develop the idea

further by perhaps making different colored liquids to show just exactly how bubbles are formed from the liquid around it.