

MCEN 4151: Flow Visualization  
September 29, 2015  
Kelsea Anderson



Flow Visualization 4<sup>th</sup> Assignment: Team 2<sup>nd</sup>

**Purpose:**

The purpose of this photograph was to set-up and capture a fluid flow with an assigned group of students. Working together allows us to pool our recourses and use extra hands to help with fluid set-ups. Valuable life skills are also learned when working as a team.

**Materials:**

For this project our team decided to play with viscosity textures. In this photograph we poured molasses over different sized plastic pieces suspended in water. For this set-up Haleigh bought in seven different shaped plastic scraps from her work. I brought the molasses to pour over the plastic pieces, Scott provided the glass container and water, and Sam bought the white backdrop. A list of all the materials used for this set-up are listed below.

**Materials:**

- 1 Large Glass Jar
- 7 Pieces of Plastic of Different Shapes and Properties
- 1 Jar of Grandma's Molasses
- 1 White Curtain for Backdrop

**Set-Up:**

For my image we filled up the glass jar that Scott provided with lukewarm tap water and placed it on the white background. Then we stacked two cylindrical pices of plastic on top of each other. The piece on the top was opaque and had a larger diameter then the translucent piece on the bottom. The plastic piece on the top also had machine threads drilled into the top. Once the water had settled molasses was spooned over the top of the upper piece of plastic lying below the surface of the water. The molasses then coated the entire top surface of the cylinder and then dripped over the edge and ran along the sides until it drained off the cylinder in long legs. The molasses eventually began to pool at the base of the glass. A diagram depicting the set-up for this photograph can be seen in Figure 1.

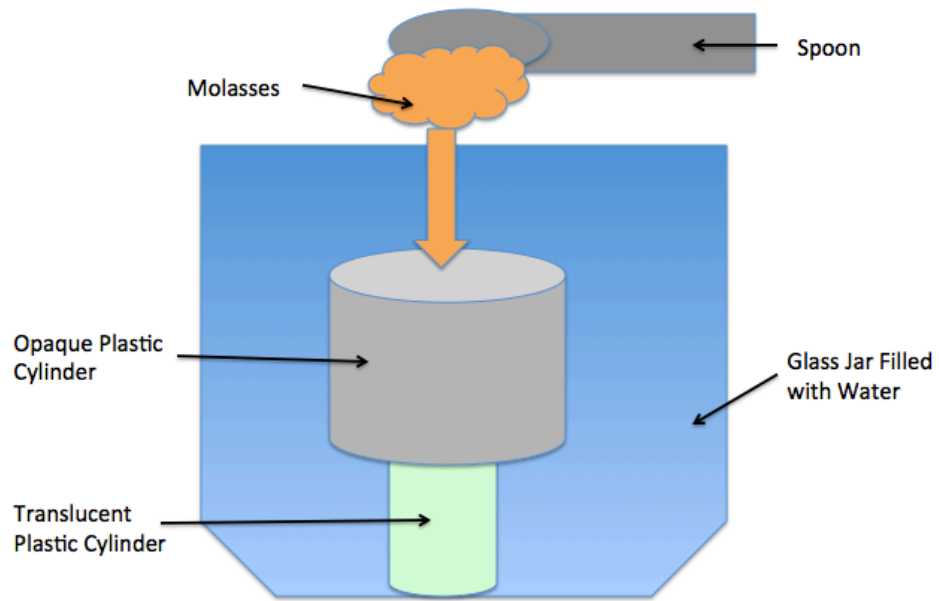


Figure 1: Experiment Set-Up

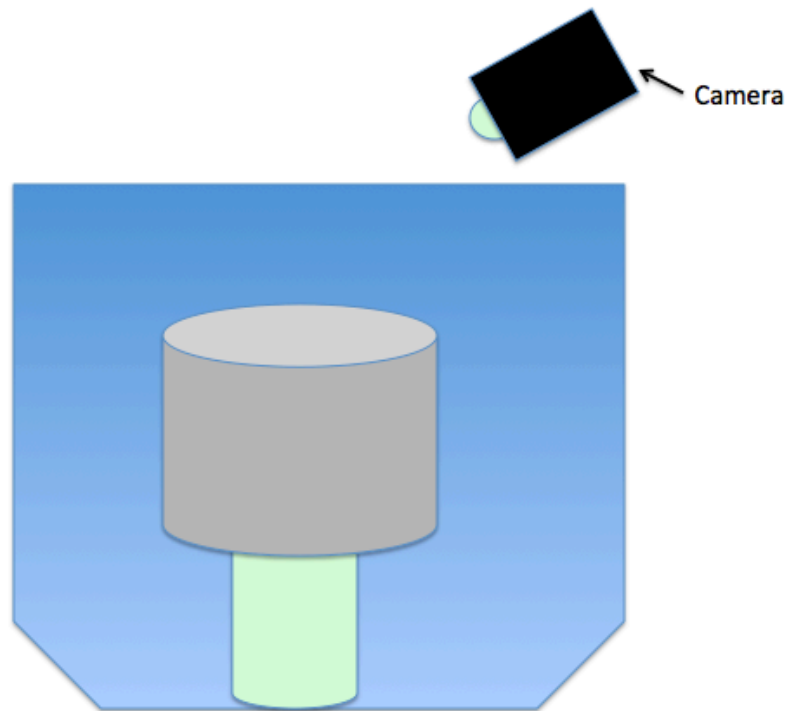


Figure 2: Camera Angle for Photograph

My image was taken looking straight down at the top of the glass as seen in Figure 2. The molasses had started to pool in the machine threads at the center of the

cylinder creating the dark spot in the center of the golden cylinder. I took my image about 20 seconds after the last of the molasses had been poured onto the plastic.

**Image Specifications:**

This image was taken at around 11am and natural sunlight was used as our lighting. The camera settings used to take this photograph are shown in Table 1.

**Table 1: Camera Settings**

Focal Length	Exposure	f/	ISO
100.0 mm	1/800 sec	2.8	125

Camera Model: Canon EOS REBEL SL1

Image Size: 5184 x 3456

Resolution: 240 Pixel Per Inch

**Post Processing:**

Some manipulations of the color curves were used to bring out the honey tone of the molasses. No other changes were made to the image.

**Reflection:**

Looking at this image it is very hard to try and decipher what is going on in the image. I like that it takes you a moment to realize that you are not looking at some strange egg shape, but a manmade phenomenon. While I like this aspect, I also understand that it distracts from the original purpose of the image. If I were to repeat this experiment I would probably look for a better angle for me to take my image from. I picked this image because of the clarity and the fact that it had an unusual perspective.