

GET WET REPORT

Yasmin Mazloom

**Prof. Hertzberg
MCEN 5151**

Flow Visualization University of Colorado Boulder 2015

For the first project, “Get Wet”, in the flow visualization class I intended to capture the visual aesthetic of fluid dynamic phenomenon from two different perspectives. In this experiment the interaction of ink with water and creation of vortex rings became visible to eyes when looking from the side. The purpose of this report is to describe details of the process and details of how I captured the flow phenomena.

For this experiment I used a cylinder shaped jar with the height of around 12 inches and a diameter of around 8 inches. I used natural sunlight as source in bright afternoon. I set the jar on a table in the balcony and used a white backdrop to diffuse the light while covering the background from distracting view. (Figure.1)



Figure 1- Jar placement using the natural light diffused by a white cardboard.

I set the GoPro HERO3 with wide angle lens (fish eye) in the bottom of the jar and set the Cannon 600 D camera with 18-135 focal lenses on tripod about half meter far on the side of the jar. The field of view for GoPro was around 127

degree. I filled the jar with tap water and used dropper to drop few drips of violet waterproof pigment-based drawing ink above the water. I dropped ink drops on surface of water with distance around 5 inches. I make estimation that drop sizes were each about $\frac{1}{4}$ of milliliter. The dimension of the both original videos was 2048×1536 .

My goal was to capture the motion from two different perspectives and get an idea of what it looks like from the angle that we don't used to see. Since I release few drops of ink the turbulence is less predictable. Looking at the jar from the side the vortex rings created is visible to eyes. There are moments that vortices are formed by dense column of ink sinking in the water. (Figure. 3)

In postproduction I used Final Cut Pro X. I improved the white balance and also cropped footages from both GoPro and the camera to draw the attention on the ink and remove extra negative space. I fasten the speed 8 times so we could see ink dissolving in water faster than normal.

Overall I enjoyed the process and all the processes. Every attempt was a new experiment and it was visually aesthetic. What will improve in next project is get to know camera that I am working with better. In this case GoPro was new device for me and I could not change the fish eye angle so in order to achieve what I intended I cropped the footage in postproduction. I also like the view side way better but the fact that same phenomenon looks very different form different perspectives was very interesting to me that I wanted to show both perspectives. (Figure.2 vs. Figure.3) To improve the project I need to get way familiar with my device which in case was Gopro and it was my first time using it.



Figure 2. Perspective from side

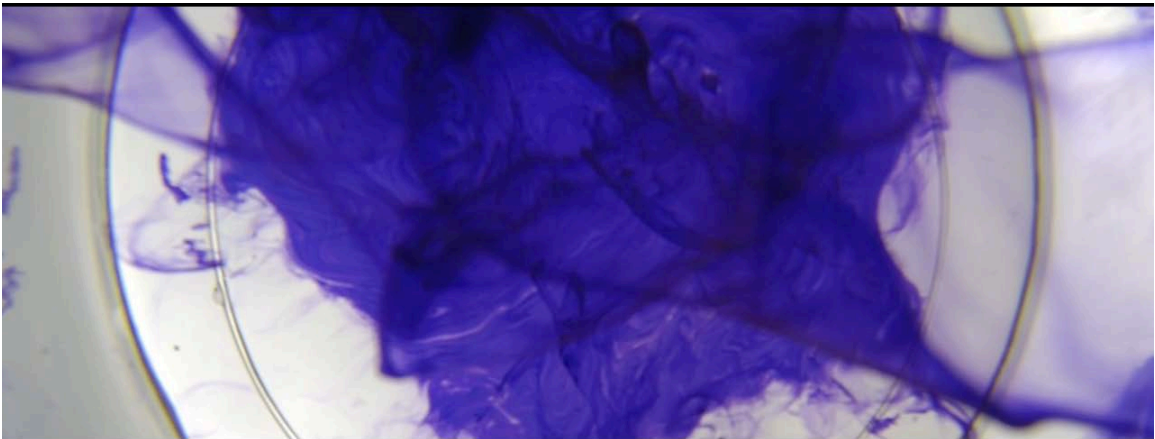


Figure.2 Perspective from bottom of the jar