Team Third

Jessica Vo

ATLS 4151

11/06/2024
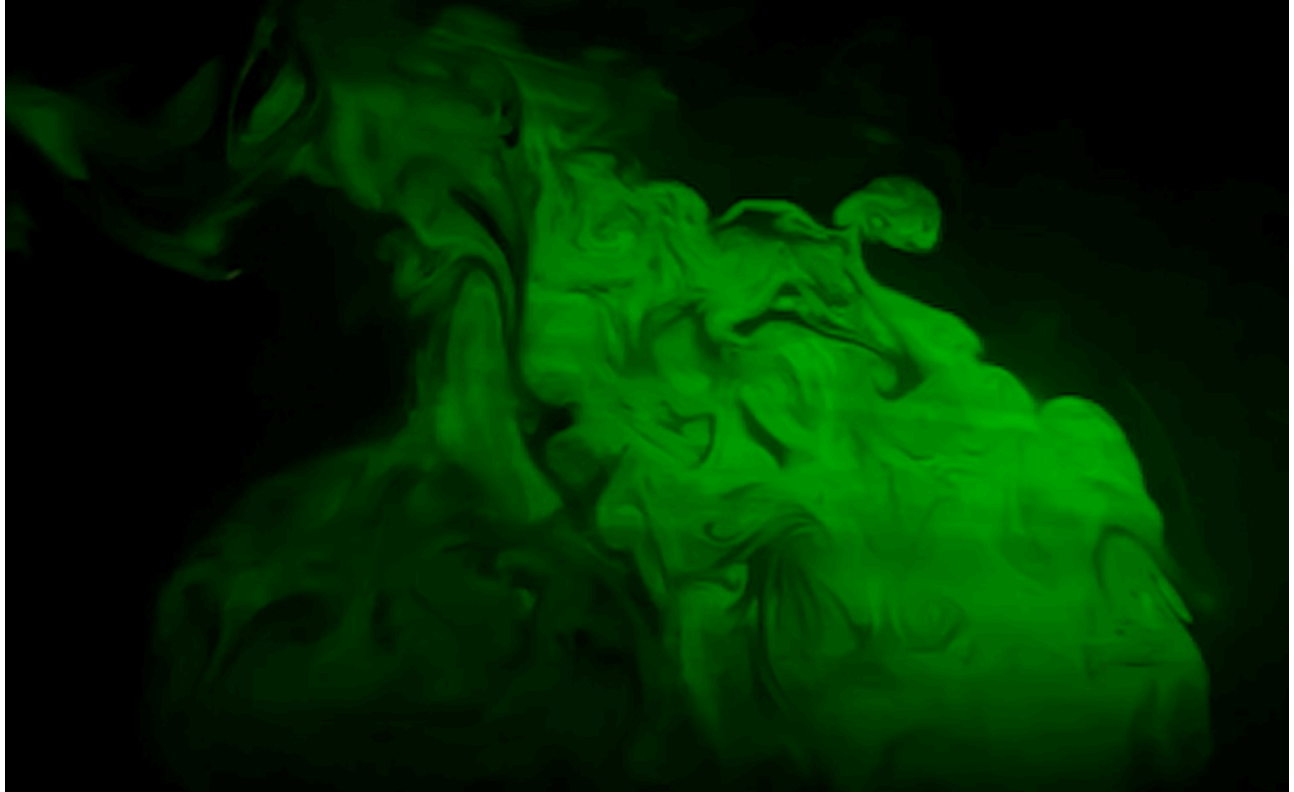
Image 1: Laser Fog Image

Full video link: [Green Laser Fog](#)

<u>**Introduction:**</u>

For the "Team Third" assignment, I worked with my team to create a distinct visual through more of a basic fluid flow using: a green laser and a fog machine. While the extent of the materials and setup process were simple, it was a lot harder to achieve based on the space we needed, the lighting to provide, and the overall setup for the experiment. Because green lasers are brighter and more visible, there are some safety precautions that need to be taken. We all used pieces of black cardboard and eyeglasses to protect our vision and the strain that comes with the brightness. With a horizontal light projection, we were able to capture the visual swirls of the fog flow from the fog machine.
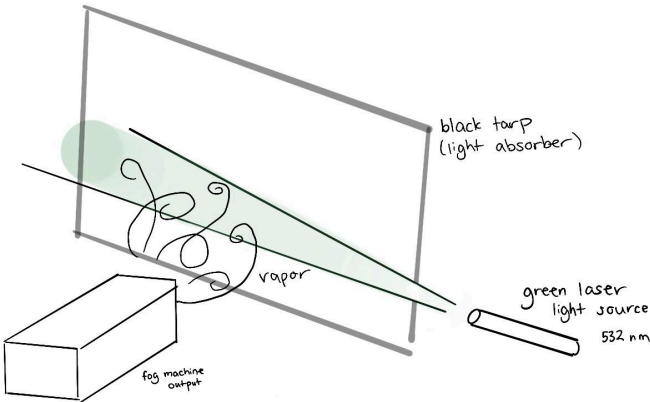
Image 2: Set up and Materials

Image 3: Fluid Diagram

Experimental Setup/ Flow Visualization:

Through the first trials of the experiment, we had trouble figuring out where to set up our experiment. We started by finding a space in the ITLL, but there were no rooms that were dark enough for us to test the visualization of the experiment. We were able to find a space in the basement of the ITLL where we were able to turn off the lights, but the overall setup was really

difficult because there was not enough room for us to maneuver while having the capacity to test everything. After hours of trial and error, we decided to meet at Abida's place where we had enough room and flexibility to set up the black tarp, outlets for the fog machine, and length for the laser to extend. When we turned on the fog machine, it rapidly emitted a dense stream of fog.

Looking at Image 3, the fluid diagram presents how the release of fog spread and created amazing visuals with the laser emitting light horizontally. Typically, green lasers are generally brighter and more visible. They emit a wavelength of around 532 nm which generates a concentrated beam of light. With the addition of the fog, diffraction is caused and produces patterns of visual swirling patterns. The fog dynamic forms through the release of the fog machine's nozzle, revealing fluid dynamics in vortexes and turbulence. As the density of the fog changes, this causes intensity in flow in different areas of intensity due to the distribution. Using a black tarp effectively helps us condense the light source and reduces any reflection. We were able to gauge more intention with visual flow because we had control over the light predictability.

Photographic Techniques:

Using my Iphone 15 camera, I wanted to be able to capture the details of the flow through slow motion. I held the camera about 1 ft above the fluid flow.

Details of the video:

- 1828 x 930

- 26mm

- f 1.6

- 168.63 FPS

Conclusion:

After doing this experiment, I realized how much the environment can play into how the experiment will turn out. We were more focused on the fluid flow when it hit us that the overall setup is what's creating the right visual effects. Getting to mess with the angles and movement of the flow was fun. I enjoyed being able to experiment with the different ways I could capture the fluid flow. I enjoyed doing a video format this time because it was fun to capture the fog flow in slow motion.

Reference

SHOE0007, & Instructables. (2021, September 22). Fog machine and laser combined show. Instructables. https://www.instructables.com/Fog-Machine-and-Laser-Combined-Show/