Group I Report

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For the first group project, the team expressed interest in exploring the complexities of flames. The team consisted of Kyle Thatcher, Danielle Metzner, and Nicole Lubinski. We first attempted to use packages of specific salts that create blue and green colored flames, but this idea did not reveal the definition in the fire as well as isopropyl alcohol (IPA). For the shot that I selected, we created a layer of water on concrete on the foreground with the IPA in the background. The IPA burns for a surprisingly long period of time and creates a cool, sustained, clear flame.

The highest flame captured in the photo is approximately 8-10 inches tall. Some of the individual flames create a mushroom at the top, and others form a sharp point typical of flame paintjobs. From previous knowledge, I know that the flame temperature of IPA is 360 degrees Celsius. Although this is still high enough to quickly burn, most of the heat is being radiated outward and not transferred to the water. For this reason, the boundary between the IPA and the water remained fairly consistent with time. The polarity of water causes it to form a thicker layer on the concrete surface than the IPA, and the boundary is clear in the photo.

The only light source used in the photo is the fire. It was taken outside on a concrete pad at night next to a concrete retaining wall that blocked most ambient light. In this method, the reflection is captured very well and is not obstructed by other light reflections. The details of the camera settings are as follows: f-stop of f/5.6, exposure time of 1/500 sec, ISO 3200, and a focal length of 46. Although many attempts using manual focus and parameters were made, the camera knew how to adjust best for the rapidly changing fire conditions and thus the “auto” setting resulted in the highest quality photos.

I believe this photo is very visually appealing because of the contrast and symmetry. The flames are captured well, but the external boundary of each flame could be slightly more defined. The interaction between IPA and water is clear, and reveals some information about their polarities and how they adhere to themselves or the surface that they sit on.

Appendix:

Unedited image: