Assignment Report

Zhengming Zhou

1002400724
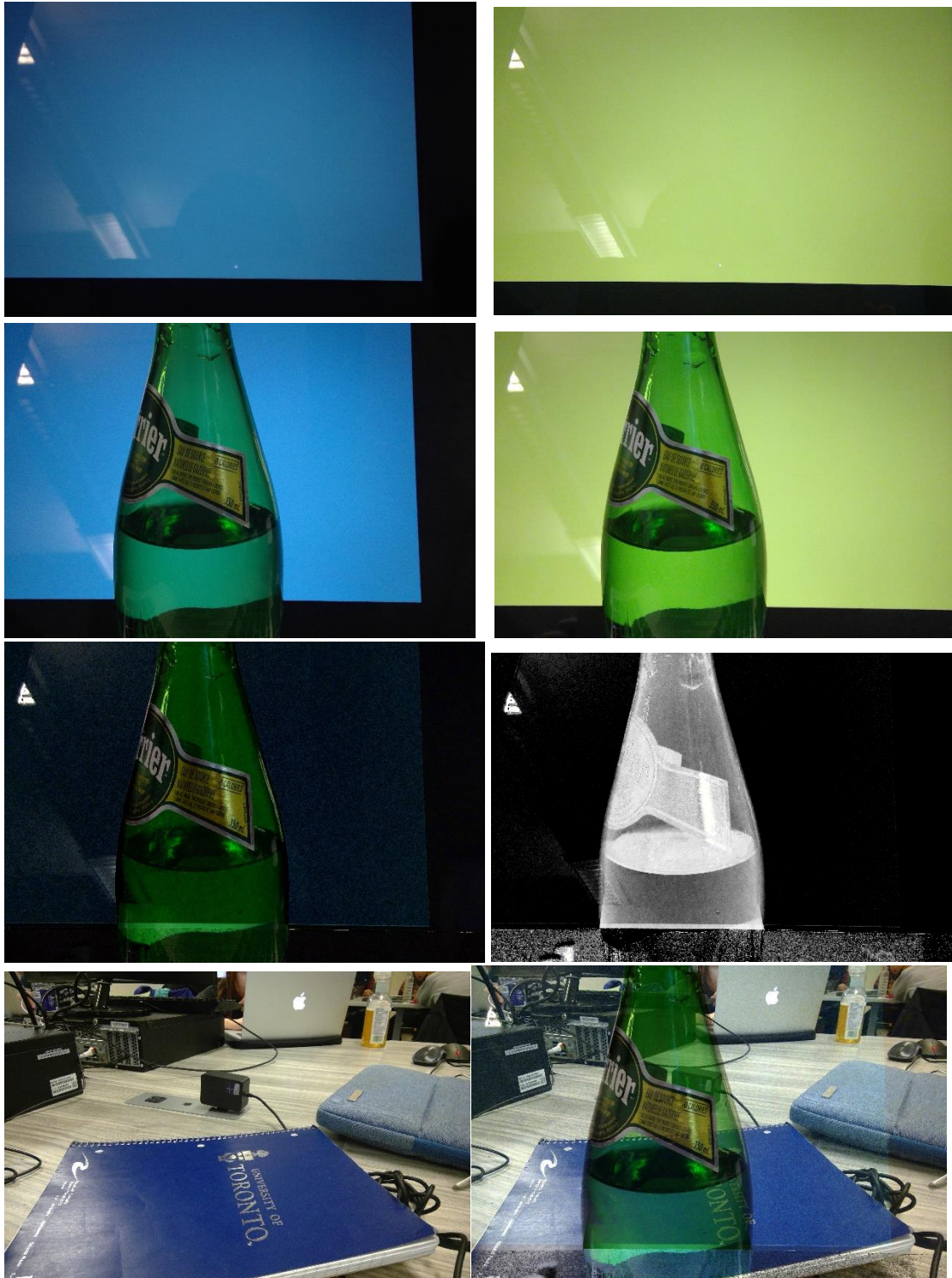
zhouzh39

Part 3

All experiment was conducted by the front camera of surface pro,

HDR off, 3:2, 3264*2176

Experiment1:

This picture is captured under the lamp of CDF lamp. One defect of this picture is that some black background was captured in backA and compA. This black background make the comp was not perfectly formed since only black was captured in this area. The white part of the object seems not very transparent.

Conclusion: we had better get rid of the black side in the background, and select back color which are very different.
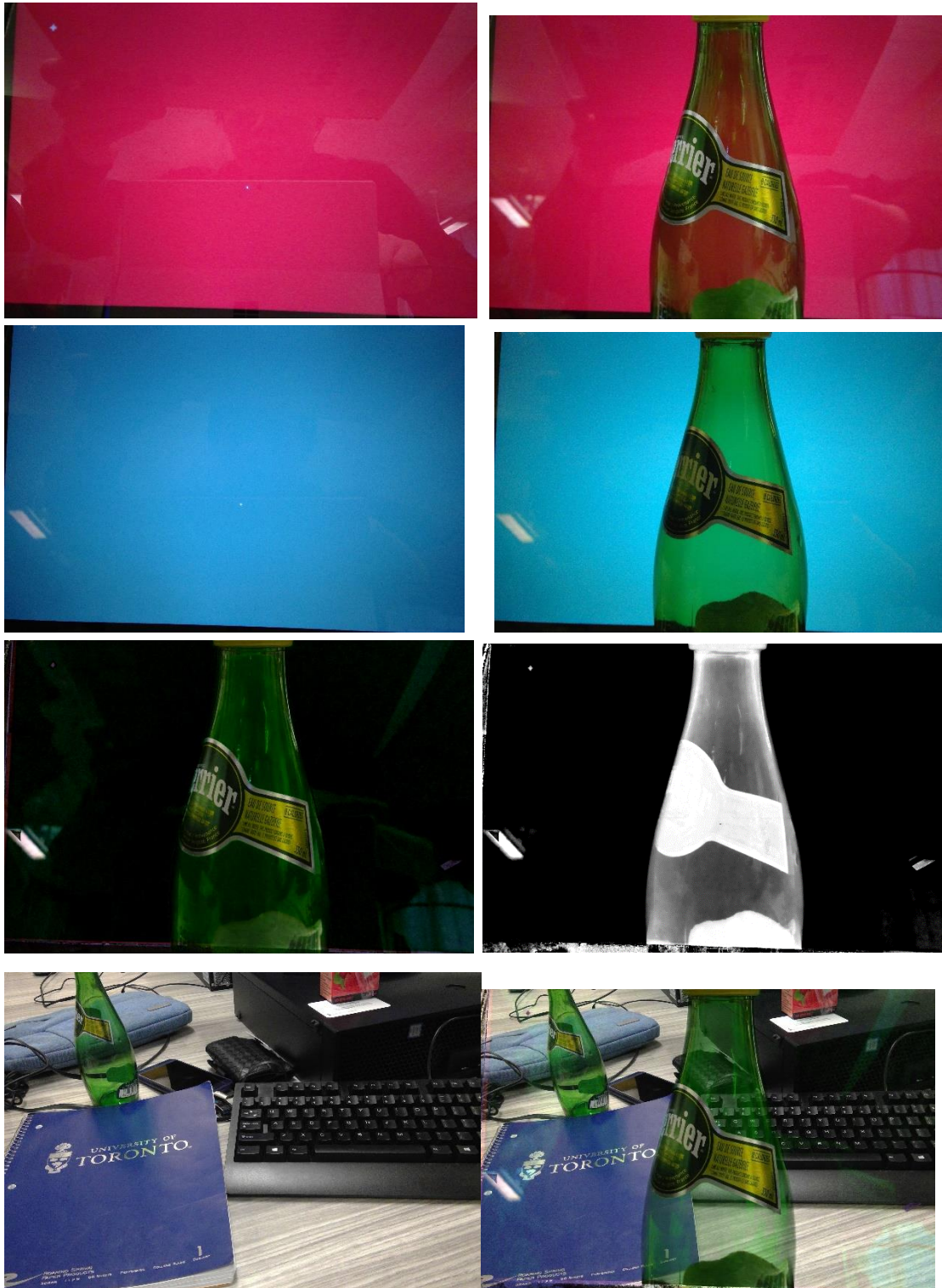
Experiment2:
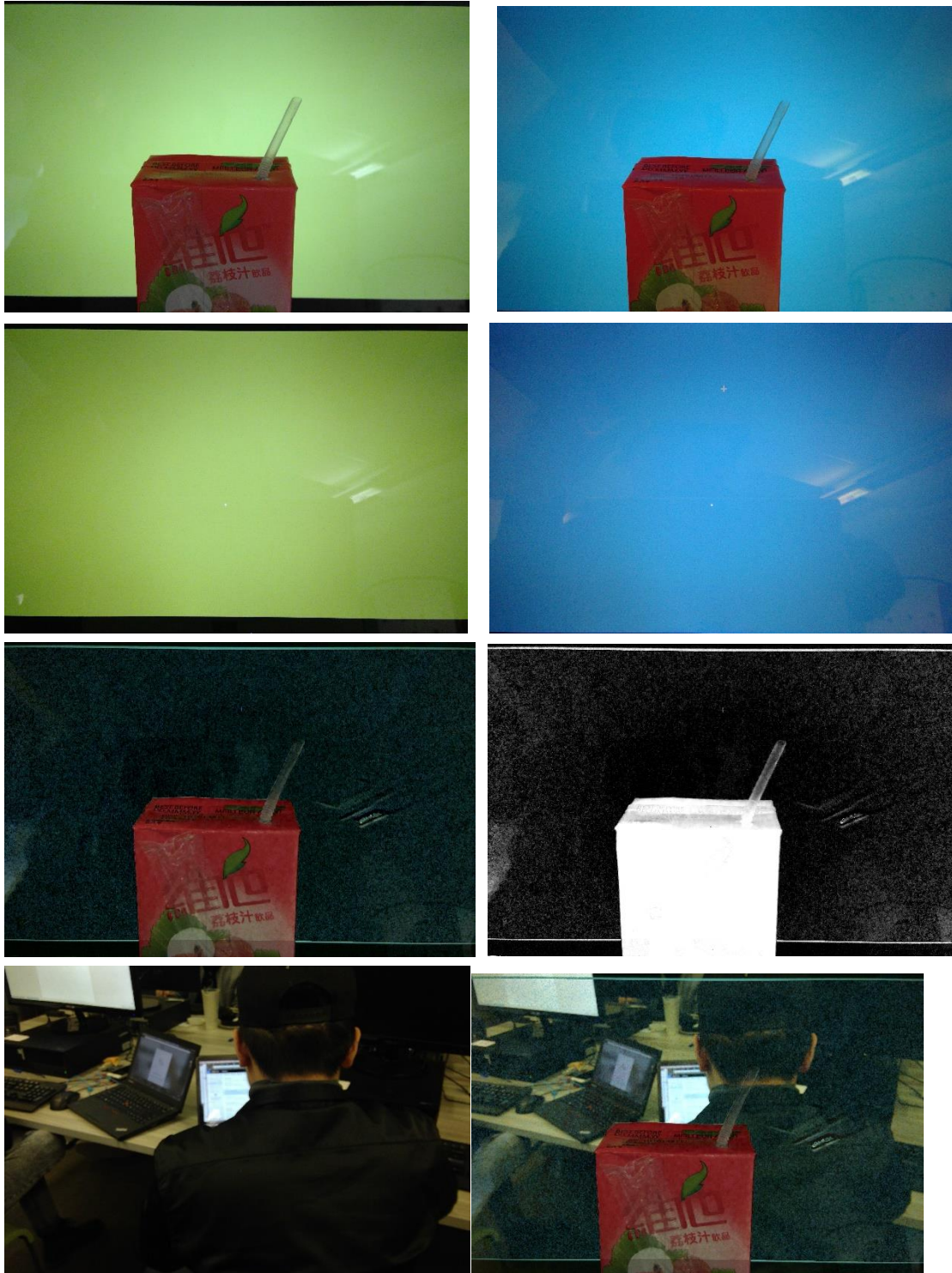
The background of blue and yellow is not very obvious. The color yellow was captured and seems like green, which make the two contrast ratio very low. It turns out that the composite picture turns

green after composite.

Conclusion: we had better get rid of the black side in the background, and select back color which are very different.
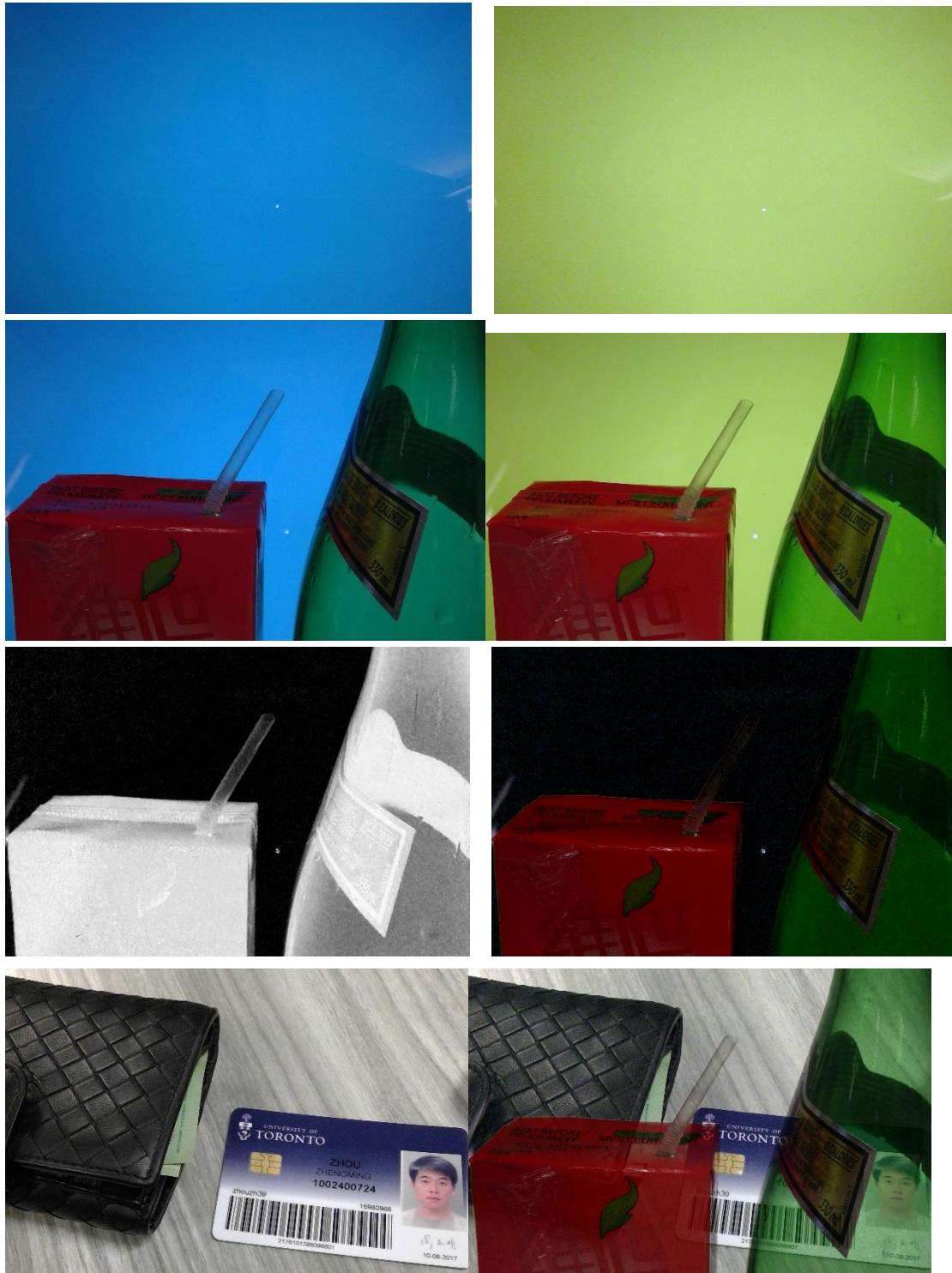
Experiment3:

In this experiment, blue and red are used as background. Red and

blue has very high contrast ratio, the background are very different.

Consequently, the composite picture is not so green like the one in

the experiment3.

Conclusion: back color which are very different would make the picture more clear.
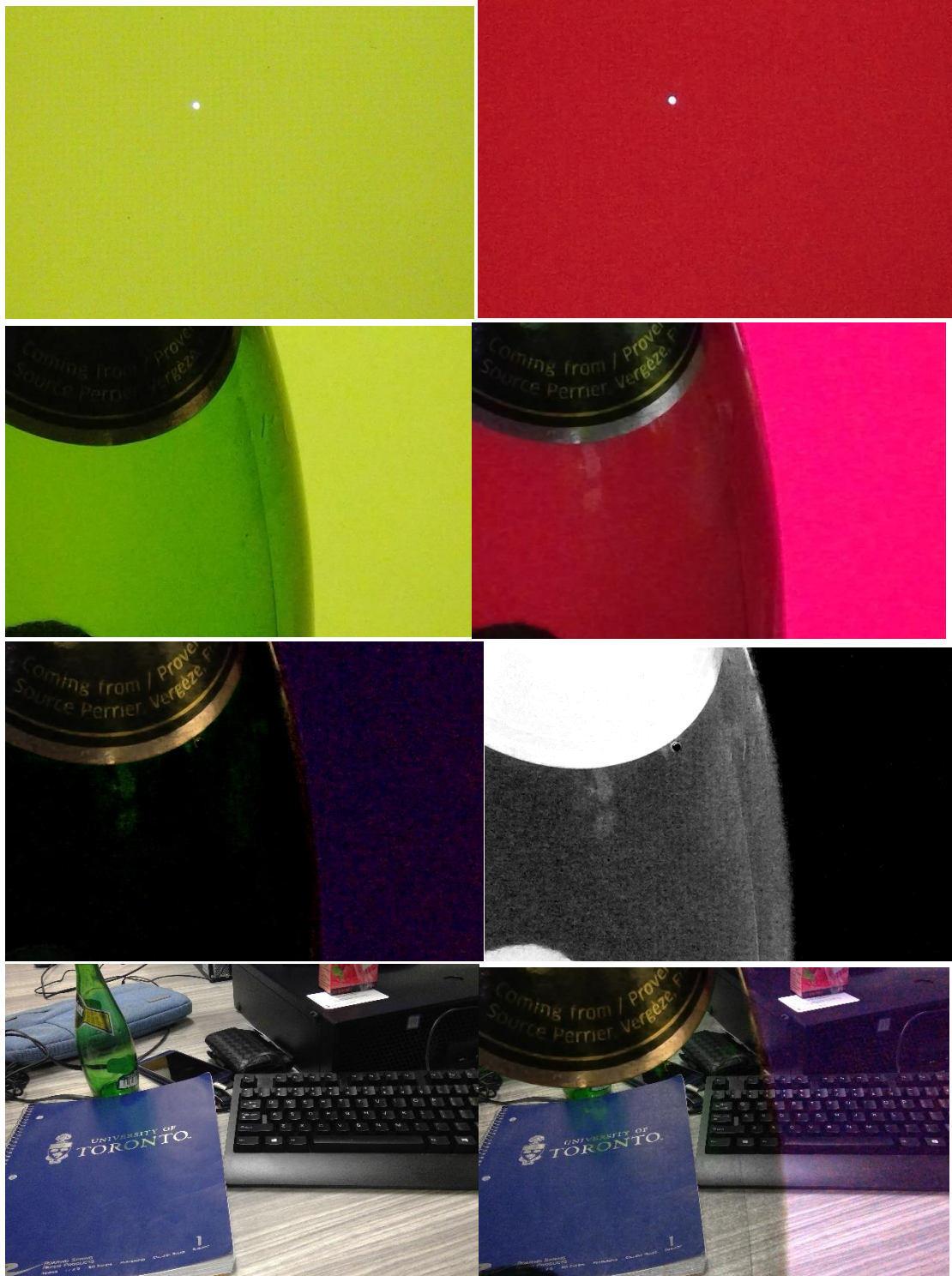
Experiment4:

In this experiment, I used one transparent and another container that is not transparent. One defect of this experiment is that the container should not be transparent is somewhat transparent. It

seems that the transparent part of the red container looks lighter than the other area of the container. Which turns out to be a little bit transparent.

Experiment5:

This experiment is done under a very dark area. Since the bottle is taken in front of a monitor, there are too much light come across this bottle. The alpha picture illustrates that the transparent part of the

bottle is very dark compared with previous experiment, darker color always means that this area is very transparent. Consequently, this bottle is too transparent is the composite picture.

Conclusion: we had better use some brighter environment.

Appendix:

(1) Procedure: put the bottle at the front of a computer monitor, then switch the background picture when needed. After having 2 composite pictures, get the background.

(2) I tried to take the photo under the light of the lamp. Also, I tried to take the photo under some dark environment. The container that is transparent and the container that is totally not transparent. Different background with high contrast ratio and different background with low contrast ratio.

(3)Limitations: We can't give a very good natural light. The black part of the background would affect the result. Like experiment 3, the black area make the composite picture a little bit mass. Under the artificial light, it is very hard to control the reflection of the light. In experiment 4, the reflection part of the picture is somewhat a little bit transparent. Under some dark places, it is very hard to catch the light, in experiment 5, the light is somewhere very dark, somewhere

very light, the composite picture becomes very similar to the background of the picture. Also, the misplacement of the object, the camera would all cause the experiment fail. Also, the removal of the object would cause the light change to some extent, which would also cause the experiment fail.

(4) the figure is in each part of experiment and limitations.

Part4

Our picture should give a black background, where alpha value should be 0.

Maybe when there is only background, the background has only the black color. After the bottle was put there, the bottle is made of glass, the glass could reflect some light on the back, then the back is different with the one we took before.

Also, maybe the camera setting was not the same, HDR maybe was turned on during taking the one with bottle. Then the back has no so much light as the one with HDR. Theoretically, if the background are the same, alpha is very close to 0, which is black. If they are not the same, maybe alpha would not be 0 at that area.

The background of compA and backA, compB and backB are not the same, consequently, the background difference make the alpha not equal to 0. So that part of the alpha is not black.