

```
clc  
close all  
clear all
```

```
imaqhwinfo info = imaqhwinfo('winvideo',1) celldisp(info.SupportedFormats) vid =  
videoinput('winvideo',1,'YUY2_640x480'); set(vid,'ReturnedColorSpace','rgb'); preview(vid); pause  
input = getsnapshot(vid); figure('name','Input Image'); imshow(input); closepreview
```

## Get the Input Image

```
[file path] = imgetfile;  
if file == 0  
    warndlg('Please select input file');  
else  
    input = imread(file);  
    figure('name','Input Image');  
    imshow(input);  
end
```

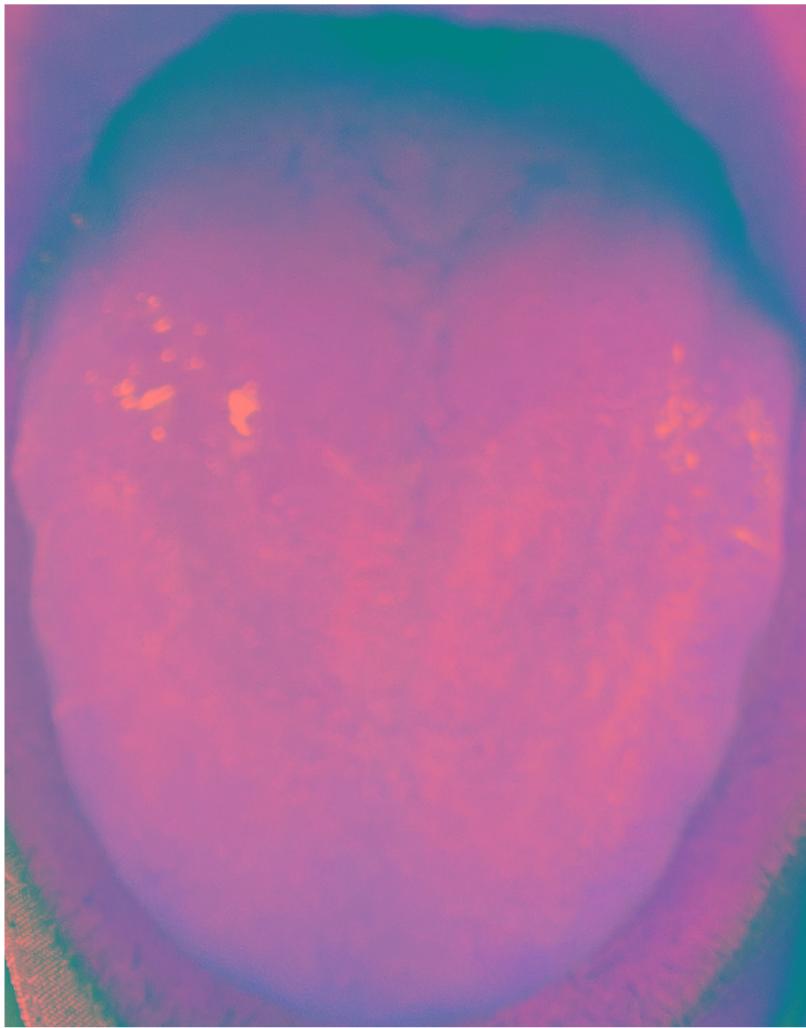


## color Conversion

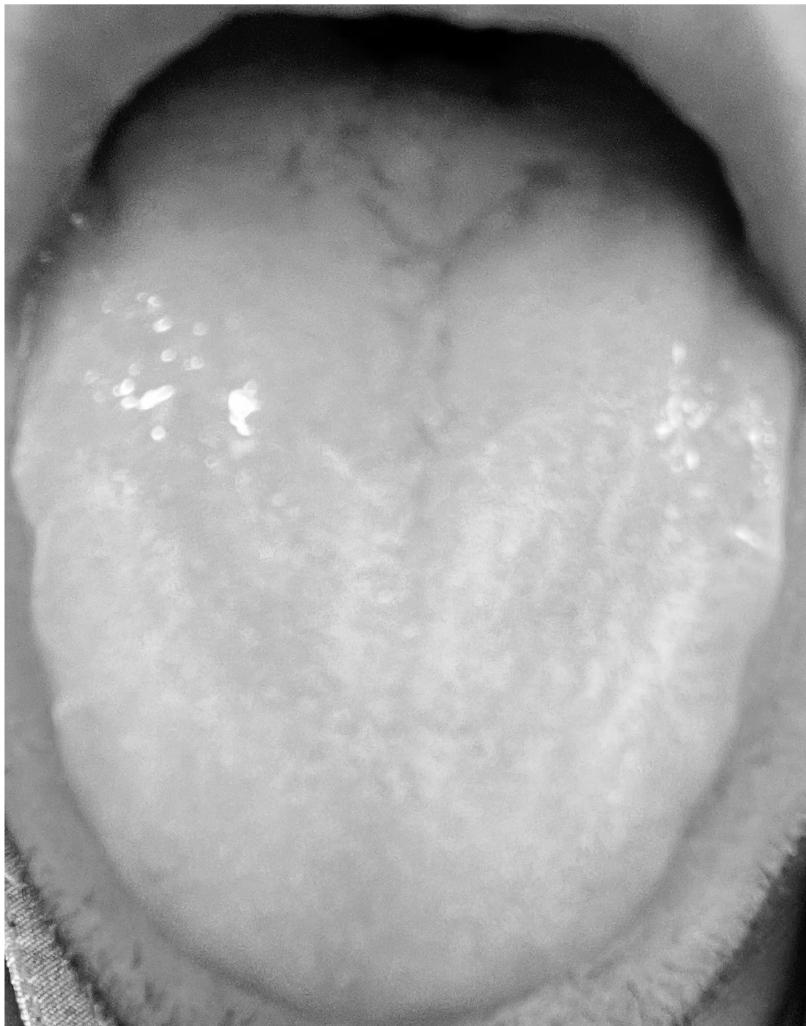
```
RGB = (input);
R = RGB(:,:,1);
G = RGB(:,:,2);
B = RGB(:,:,3);
```

## Conversion Formula

```
Y = 0.299 * R + 0.587 * G + 0.114 * B;
U = 128 - 0.168736 * R - 0.331264 * G + 0.5 * B;
V = 128 + 0.5 * R - 0.418688 * G - 0.081312 * B;
YUV=cat(3,Y,U,V);
figure('name','YUV Color Coversion');
imshow(YUV);
```



```
y_img = YUV(:,:,1);
figure('name','Luminance Image');
imshow(y_img,[]);
```



```
u_img = YUV(:,:,2);
figure('name','chrominance of U Image');
imshow(u_img,[]);
```



```
v_img = YUV(:,:,3);
figure('name','chrominance of V Image');
imshow(v_img,[]);
```



## Enhancement

```
y_int = adapthisteq(y_img);
figure('name','Enhanced Intensity Image');
imshow(y_int,[]);
```



```
v_int = adapthisteq(v_img);
figure('name','Enhanced Image')
imshow(v_int,[]);
```



```
Y = single(y_int(:,:,1));
U = single(u_img(:,:,1));
V = single(v_int(:,:,1));

C = Y - 16;
D = U - 128;
E = V - 128;
```

## seprate RGb

```
R = uint8((298 * C + 409 * E + 128) / 256);
G = uint8((298 * C - 100 * D - 208 * E + 128) / 256);
B = uint8((298 * C + 516 * D + 128) / 256);
```

## Return Color RGB

```
color_rgb(:,:,1) = R;  
color_rgb(:,:,2) = G;  
color_rgb(:,:,3) = B;  
  
figure('name','Enhaced Color Image');  
imshow(color_rgb,[ ]);
```



```
helpdlg('Process Completed');
```

