1. Run PH\_identifier.m on matlab.
2. Click on ‘Load Image’ button and select the strip image.
3. Click on ‘Zoom’ button if the image is too small. Click on image to zoom in or scroll mouse wheel to zoom in and out.
4. Click on ‘Select Color’ button and choose the Color to be identified. The pH value will be displayed.

Program flows:

1. Acquire image location and then open and display it.
2. Acquire mouse input position on image and frame it by size of ±10 pixel.
3. Convert the frame from RGB to YCBCR space and calculate the mean value.
4. Take the YCBCR values as feature and input to the trained network.
5. Convert network output into pH value and display.

Classifier: feed-forward backpropagation network (trainlm)

Activation function : logsig

3 input neuron (Y, CB, CR)

10 hidden neuron

6 output neuron (pH 5, pH 6, pH 7, pH 8, pH 9, invalid color)

Tolerance=0.3

Accuracy 88%