

IoT

Su Mon Tun and Ramsha Quyyam

Smart Glass

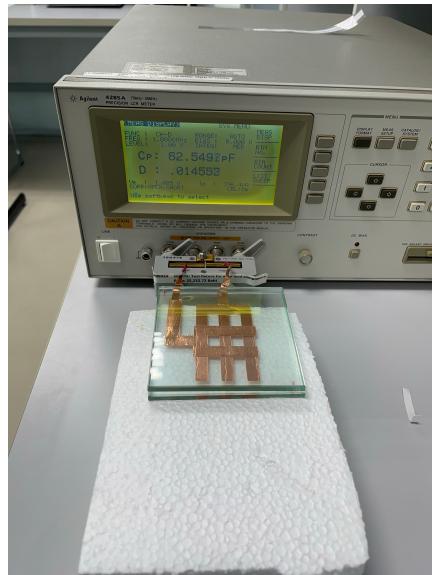
22 April 2022

Week 6

1. Design



a. 0.5cm of finger widths



b. 1cm of finger widths



c. a. 1.5 cm of finger widths



Three sensors are designed using a three-vertical-and-two-horizontal design with the dimension of 0.5 cm finger width and 0.5 cm gap for the first design. The second design has the dimension of 1cm finger width and 1cm finger gap. For the third design, the dimensions are 1.5cm finger width and 1.5cm finger gap. We used the copper tape as a bus for connecting the sensor with the LCR meter to reduce the gap between the two glasses because the gap between the glasses may give some interference in the capacitance values.

2. Results

The results for the electrode designs are as follows.

Table 1. Results for 0.5cm width electrodes

Capacitance (No touch)	14.97 pF
Capacitance (Touch between electrodes)	14.14 pF

Table 2. Results for 1cm width electrodes

Capacitance (No touch)	62.16 pF
Capacitance (Touch between electrodes)	61.6 pF

Table 3. Results for 1.5cm width electrodes

Capacitance (No touch)	82.2 pF
Capacitance (Touch between electrodes)	80.3 pF