



Pixel Meeting

Pixel Sensor MS

Paul Dervan

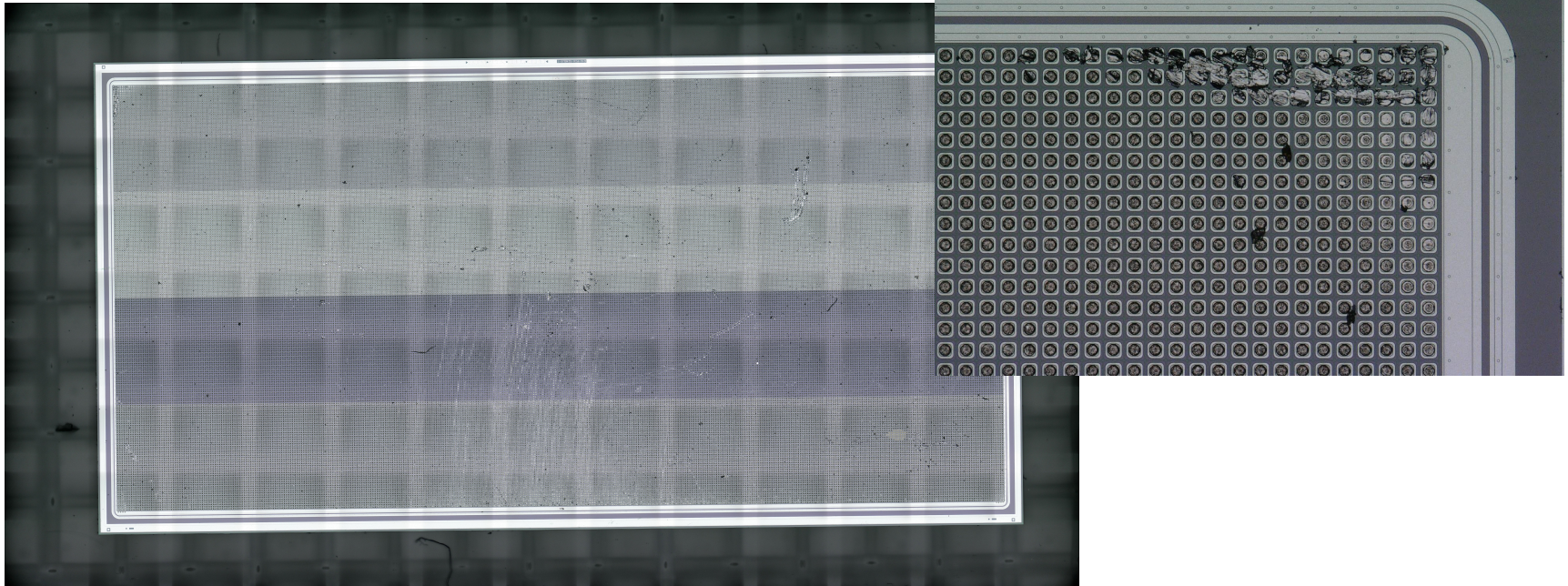


- Received 4 sensors from Lancaster
- 3 single and 1 double sensor
- Measurements:
 - Visual inspection
 - IV
 - I vs T
 - CV
 - Thickness/planarity



Using a Keyence VHX-5000 with 200x magnification (stitched photographs)

Single 1

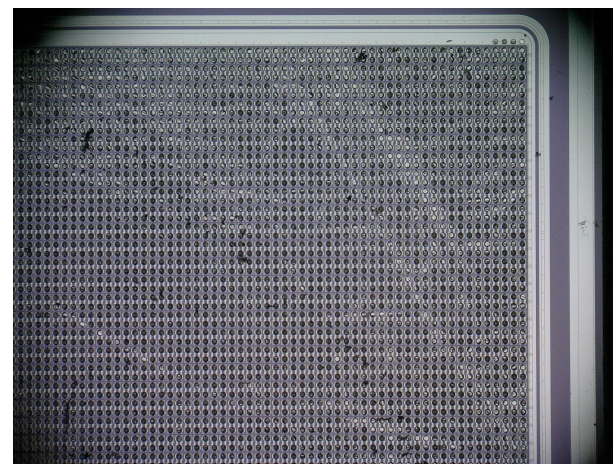
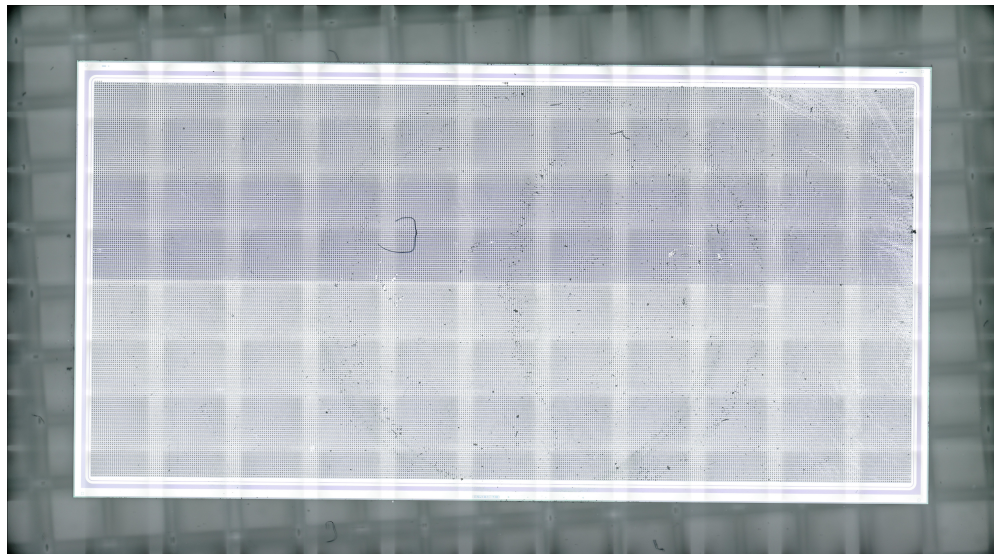


Lots of marks on the surface.

Scratch near the edge (seen in Lancaster)



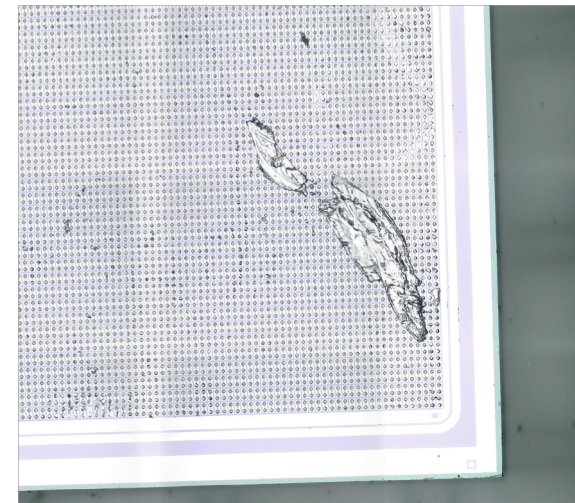
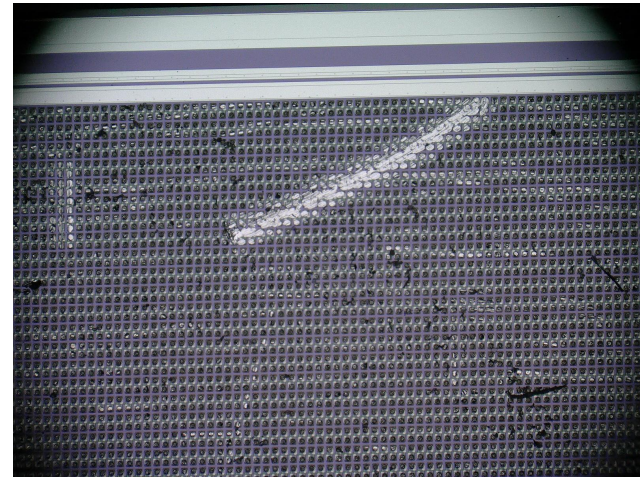
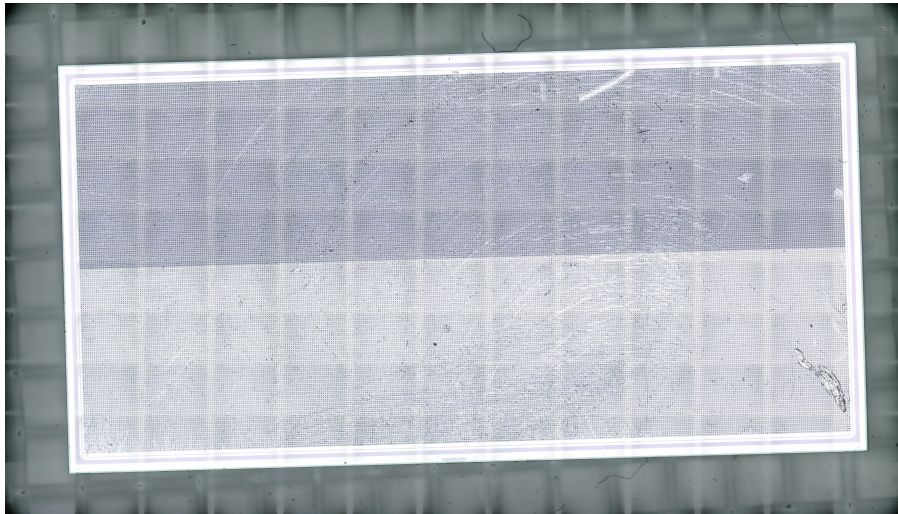
Single 3



Lots of marks from vacuum pen on the surface.
Bias pad badly damaged
Scratch near the edge (seen in Lancaster)



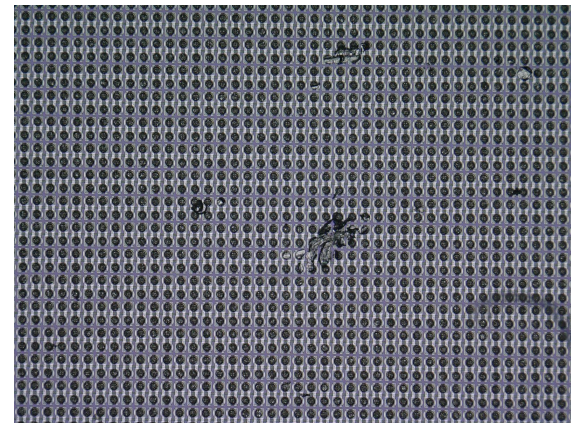
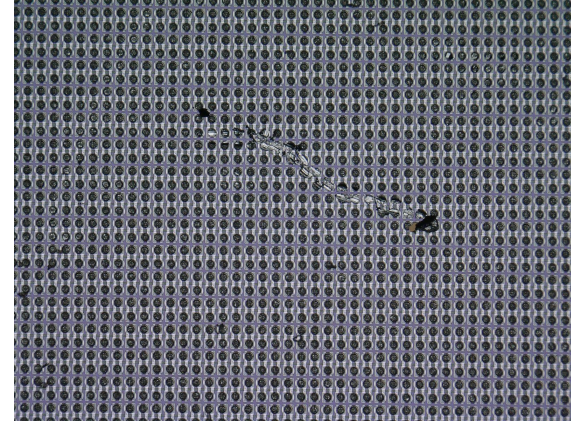
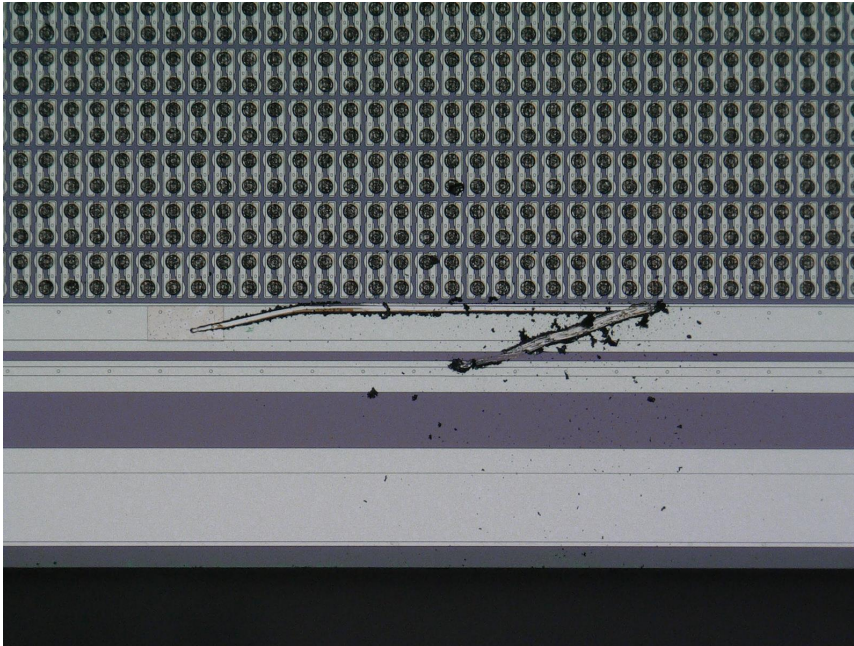
Single 4



- Lots of marks from vacuum pen on the surface.
- Large scratch
- Large contamination in the corner (seen in Lancaster)



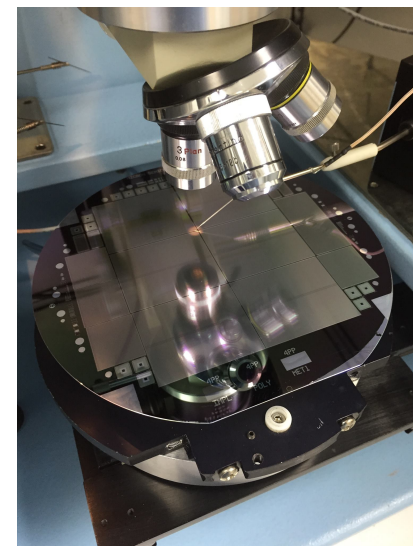
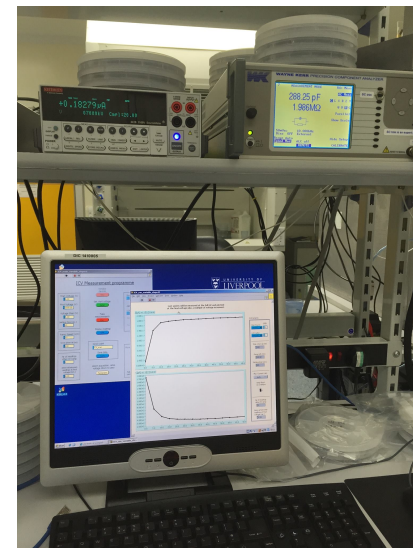
Double 2



Bias pad badly scratched

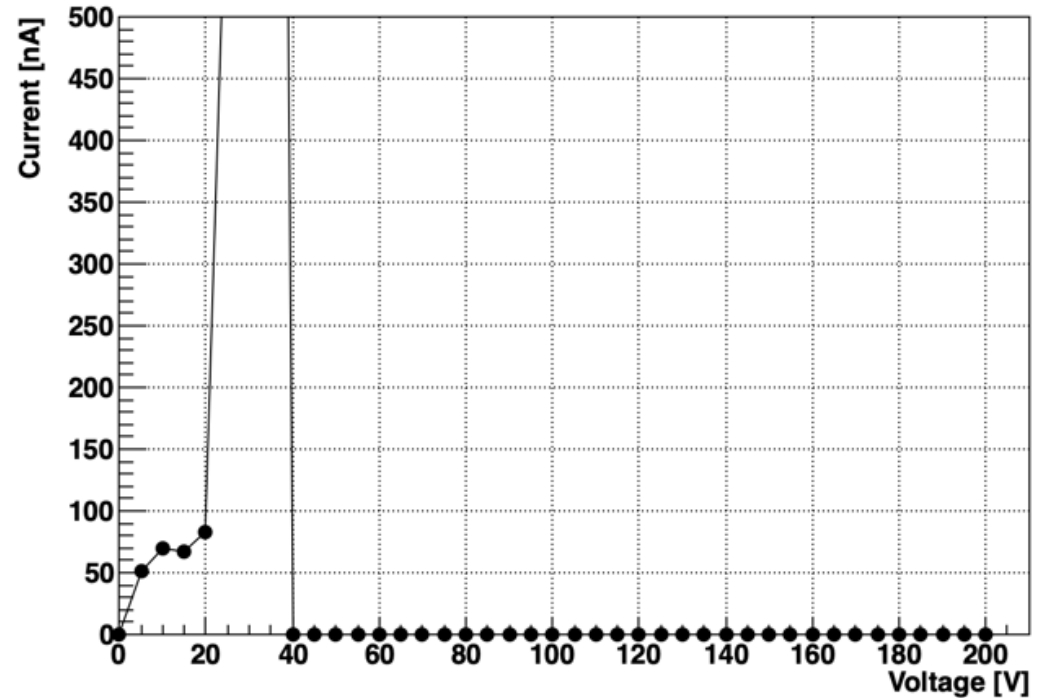
Various scratches on the surface (seen in Lancaster)

- Probe station
- Keithley 2410 as source meter
- Wayne Kerr 6430B LCR Meter (also have a 4300)
- Clean room
 - Humidity 40%
 - Temperature $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$
 - Confirmed by probe measurements
 - A CLPD system is being built to monitor this live (same as the ring 0 interlock system)
- Measurements taken by a LabView Program



- 0V to 200V
- 5V steps
- 10s delay
- 10 μ A compliance

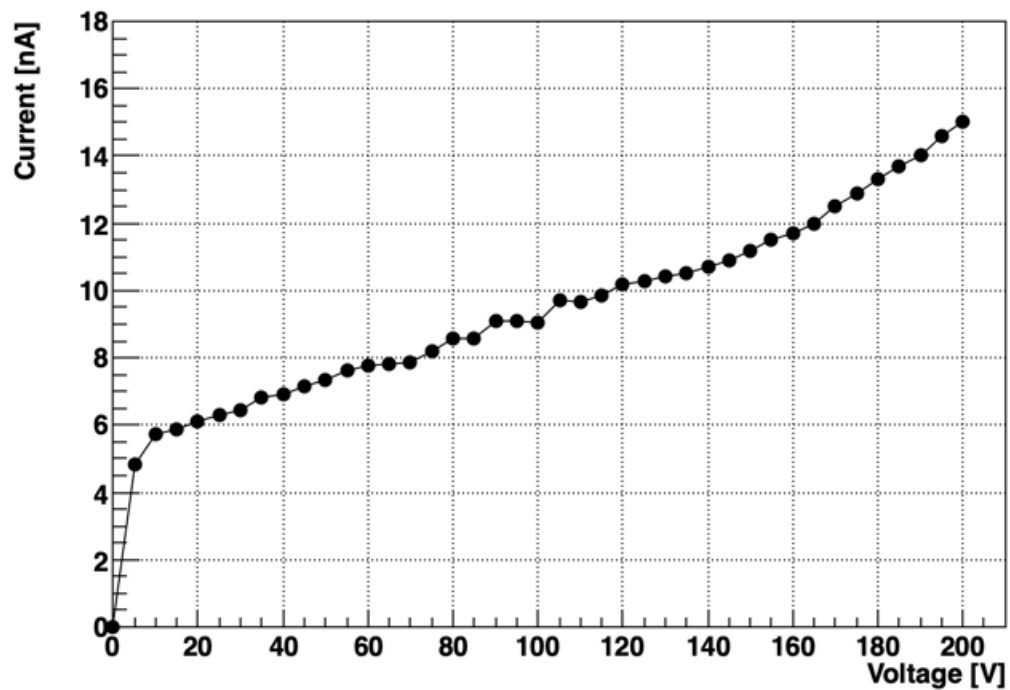
Single 1



Breaks down at 20V
Not seen in Lancaster

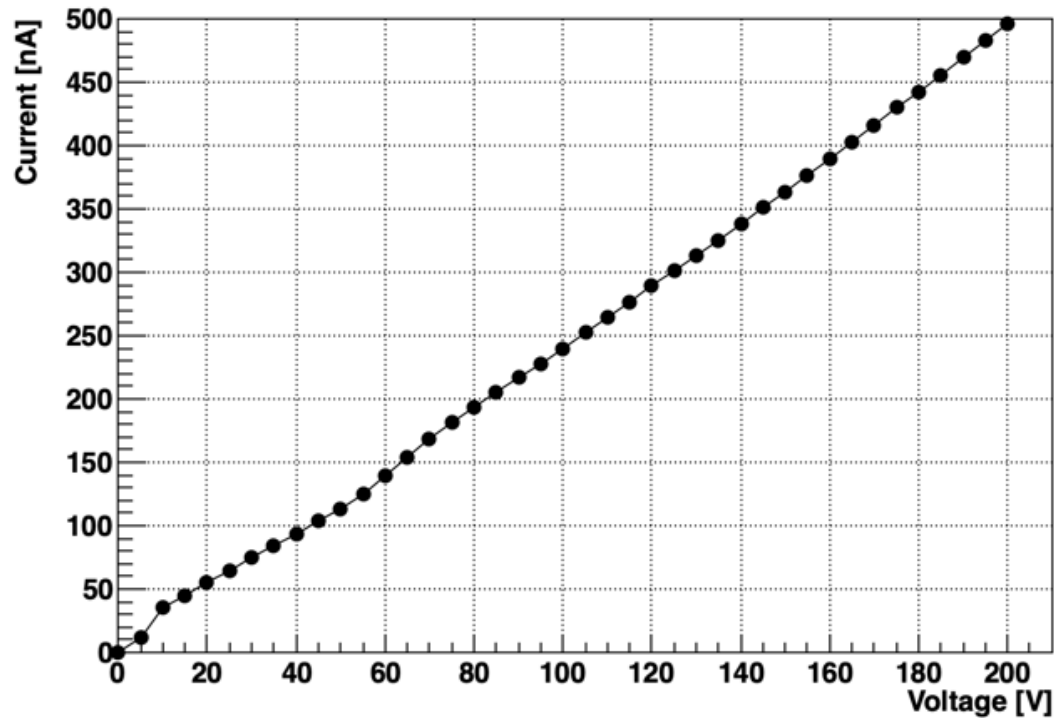


Single 3



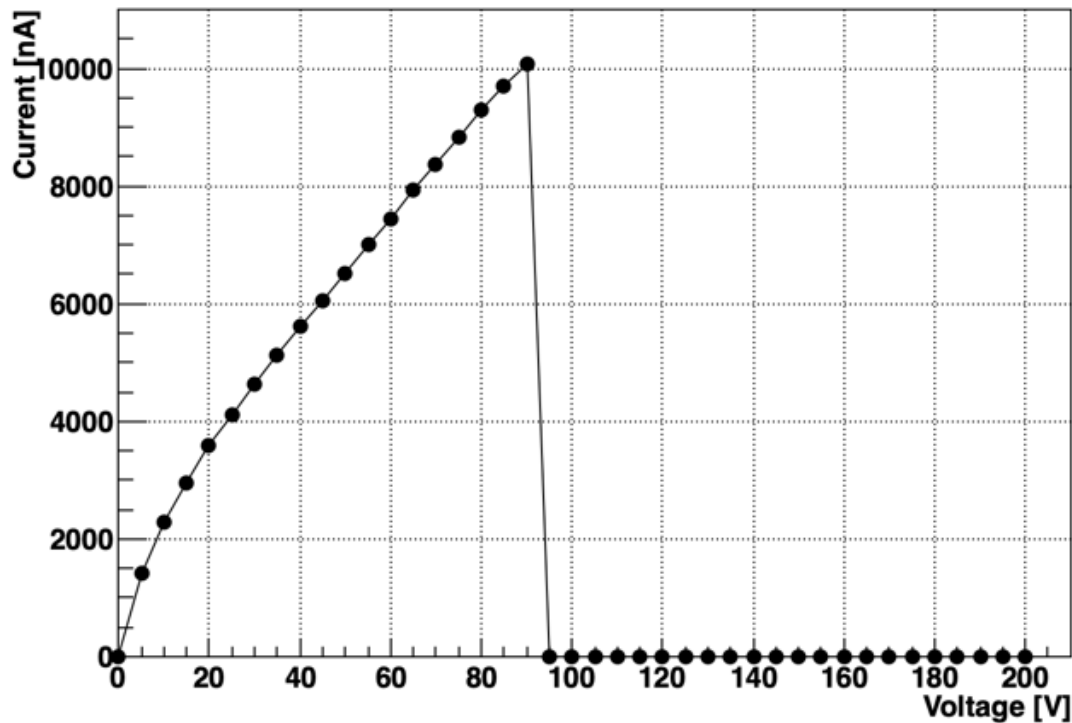
Looks OK
Similar to Lancaster

Single 4



Similar to Lancaster

Double 2

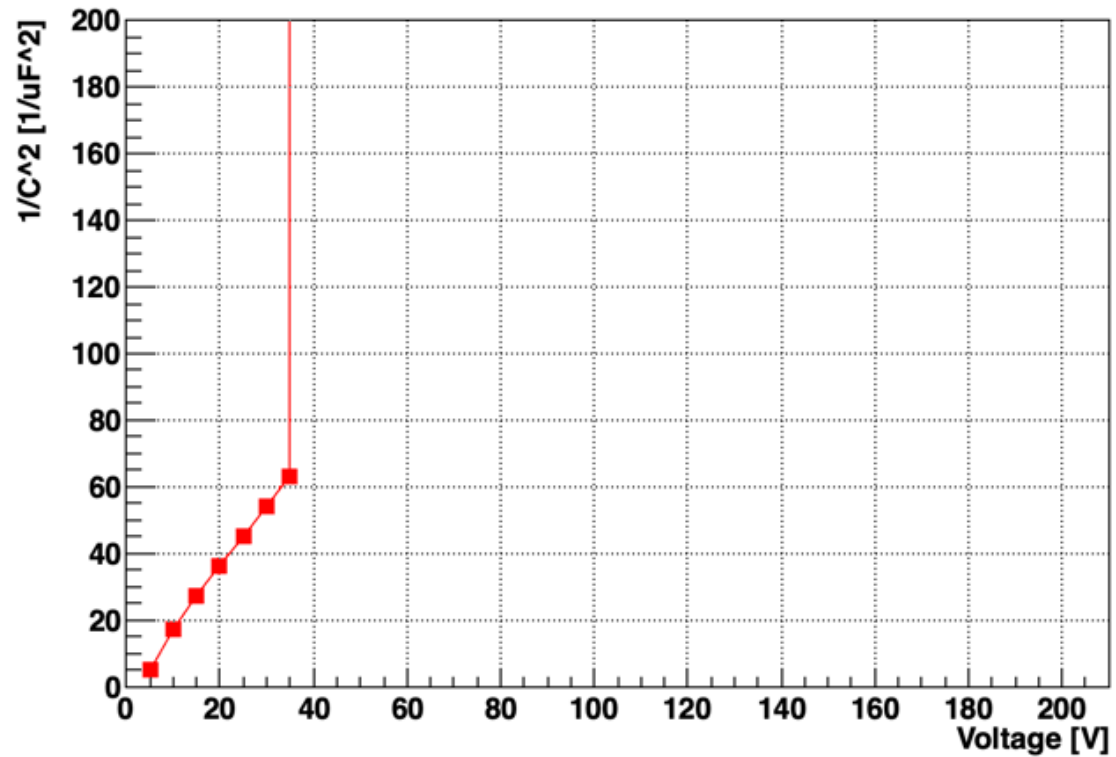


Very high current
Hits HV compliance
Not seen in Lancaster



- 0V to 200V
- 5V steps
- 10s delay
- 10kHz
- 10 μ A compliance

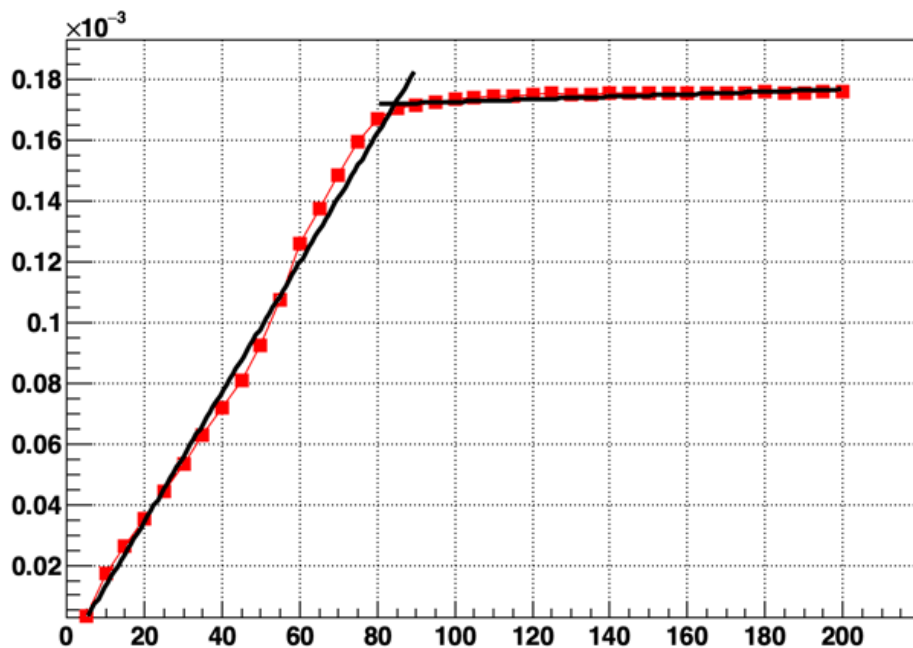
Single 1



Break Down



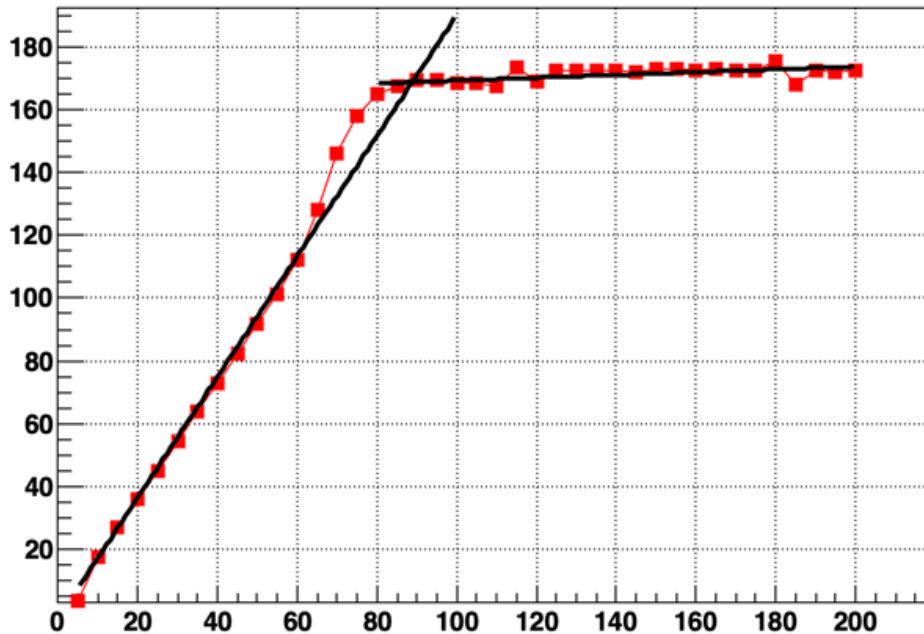
Single 3



Looks OK
Similar to Lancaster



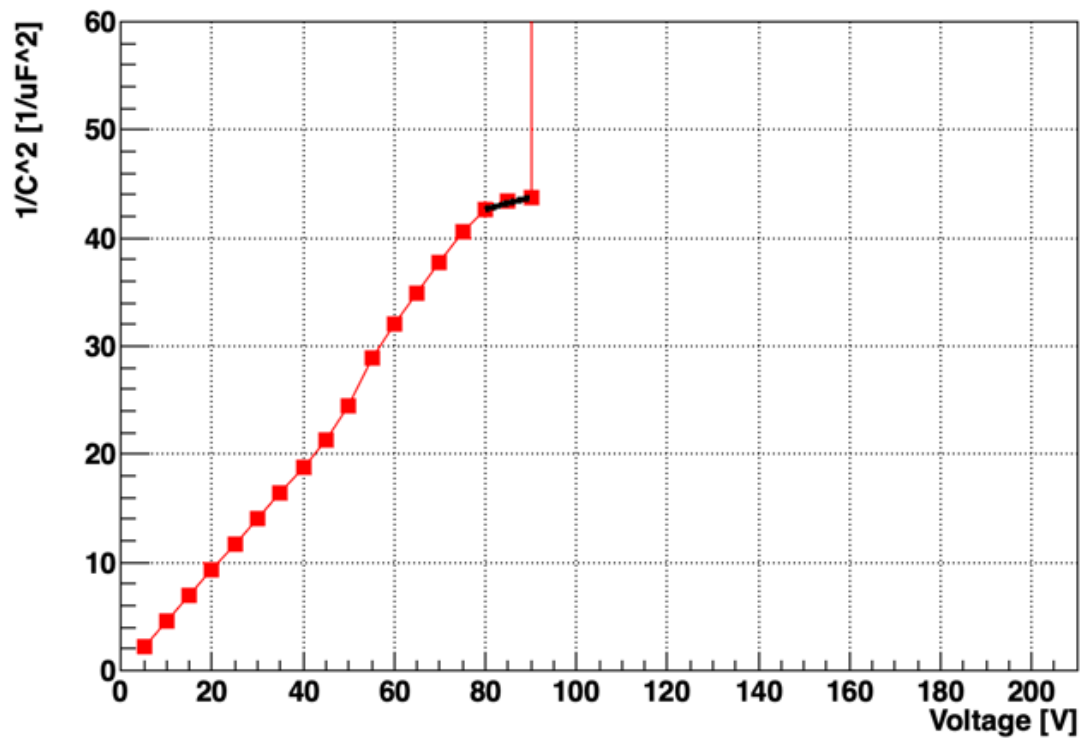
Single 4



Looks OK
Similar to Lancaster



Double 2



Not a great fit
Hits HV compliance



Sensor	Liverpool V_{dep} (V)	Lancaster V_{dep} (V)	Oxford V_{dep} (V)
Single 1	-	87.0	88.4
Single 3	84.6	83.1	88.3
Single 4	88.9	87.7	89.8
Double 2	82.9?	81.4	80.3

Fairly good agreement



- Received 4 sensors from Lancaster
- 3 single and 1 double sensor:
 - Single 1 now breaks down
 - Double 2 has high current
 - Single 4 IV is Ohmic
- To do:
 - Re-do the IV/CV measurements (cross check)
 - Comparison with Oxford and Lancaster Measurements
 - I vs T
 - Thickness/planarity
 - CLPD monitoring