

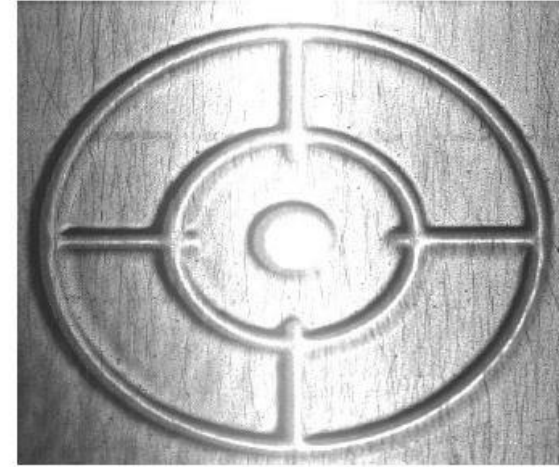
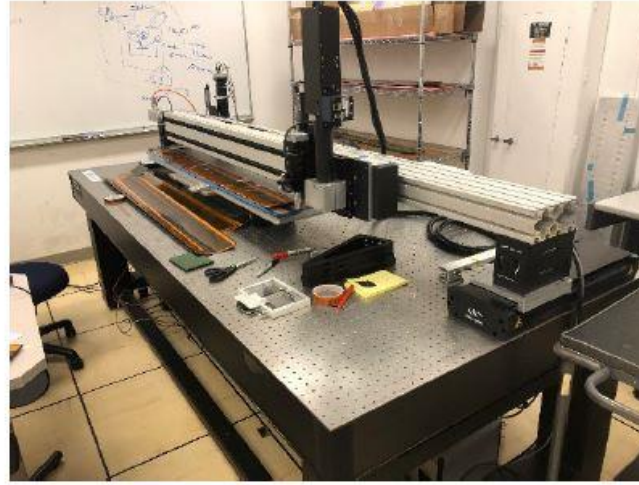
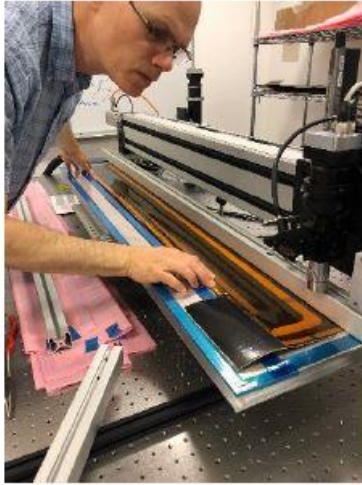
2 Barrel tapes integrated into carbon fibre cores



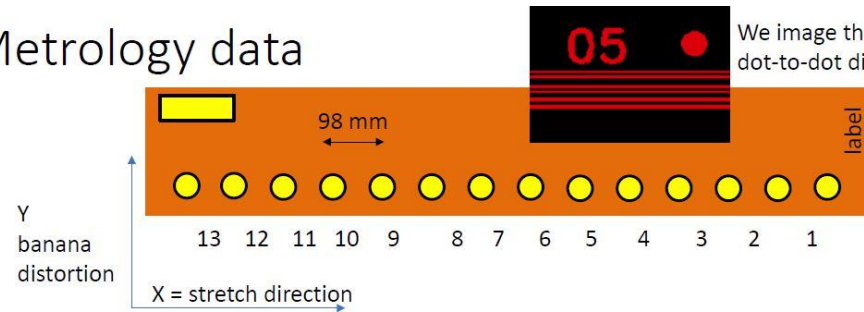
Petal tape



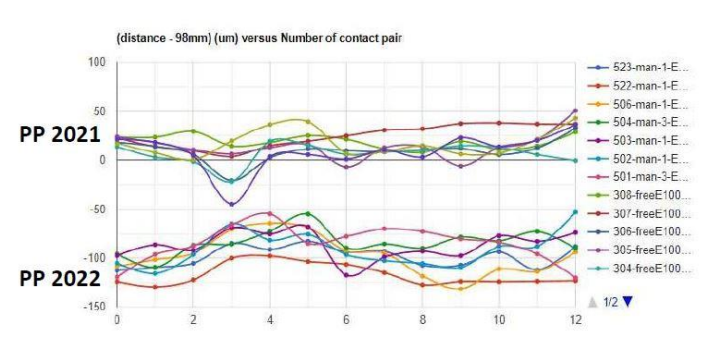
LBL Long Travel Optical Scanner



Metrology data



Example metrology data: stretch in x direction.



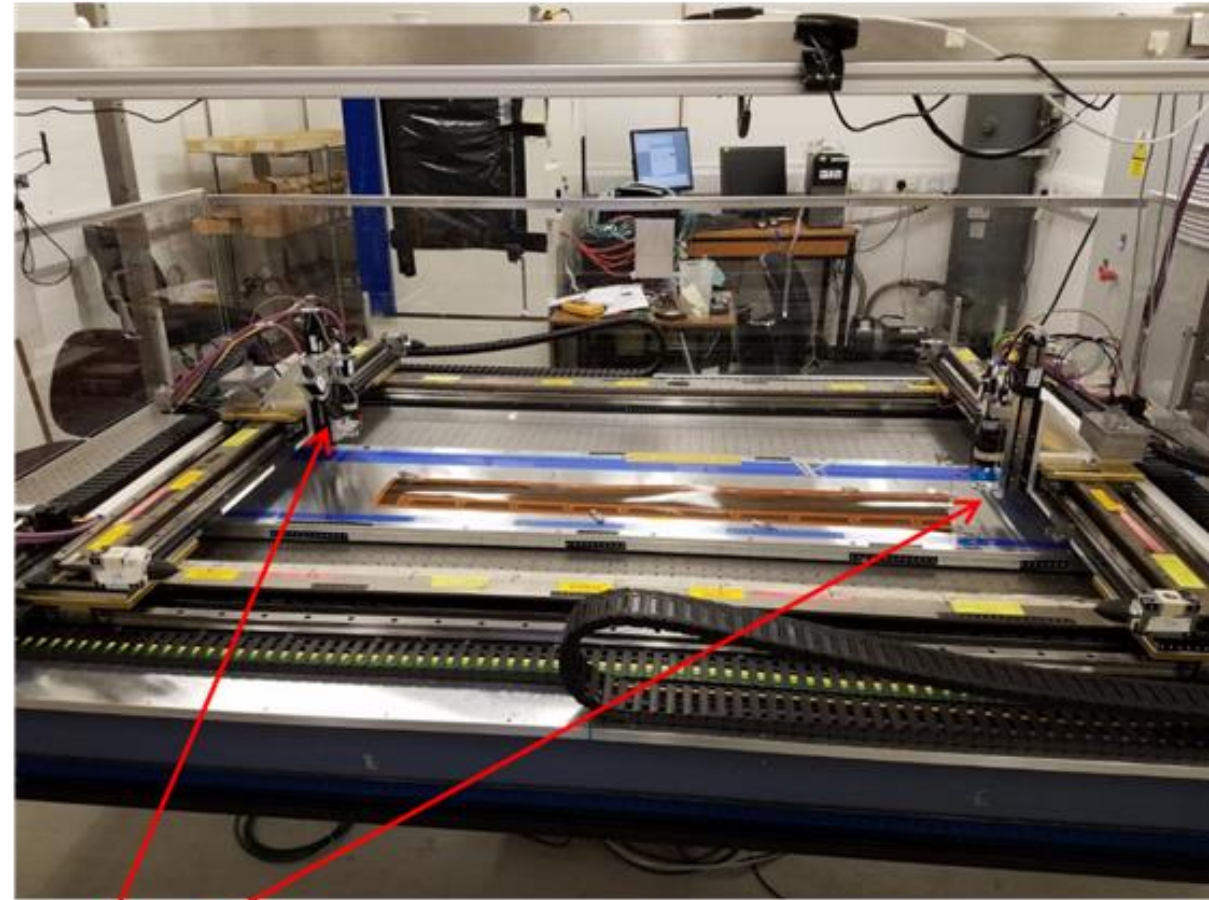
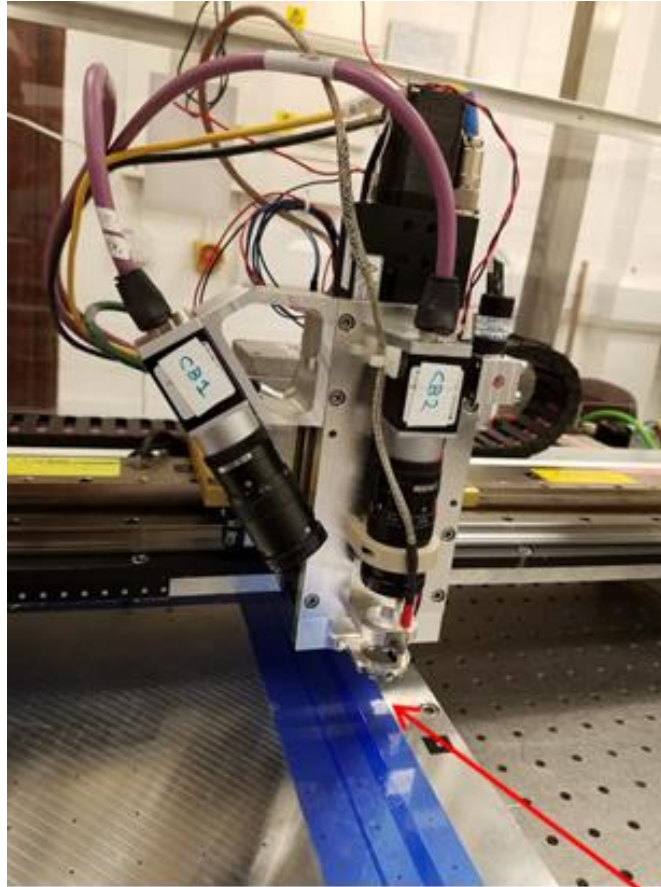
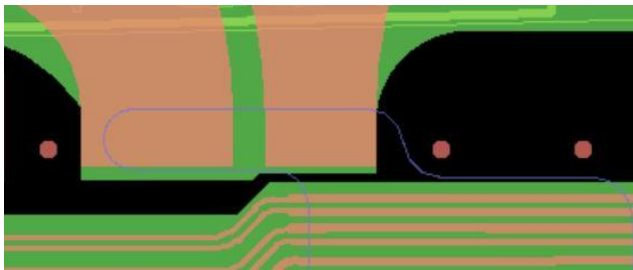
Plot shows the 13 distances between fiducial dots in deviation from 98 mm

For the 2022 tapes we have $13 \times -100 \text{ um} = -1.3 \text{ mm}$

One of 4 Bus Tape Testing Robots

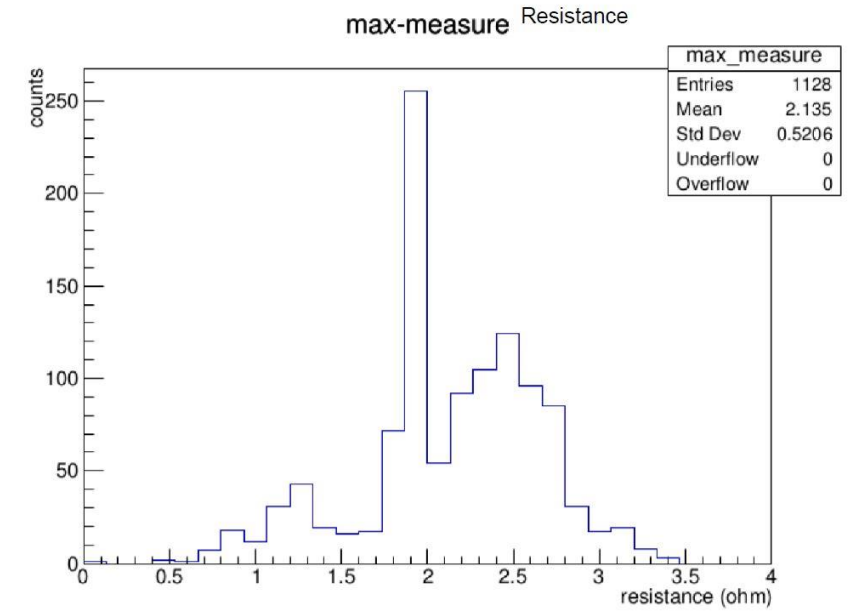
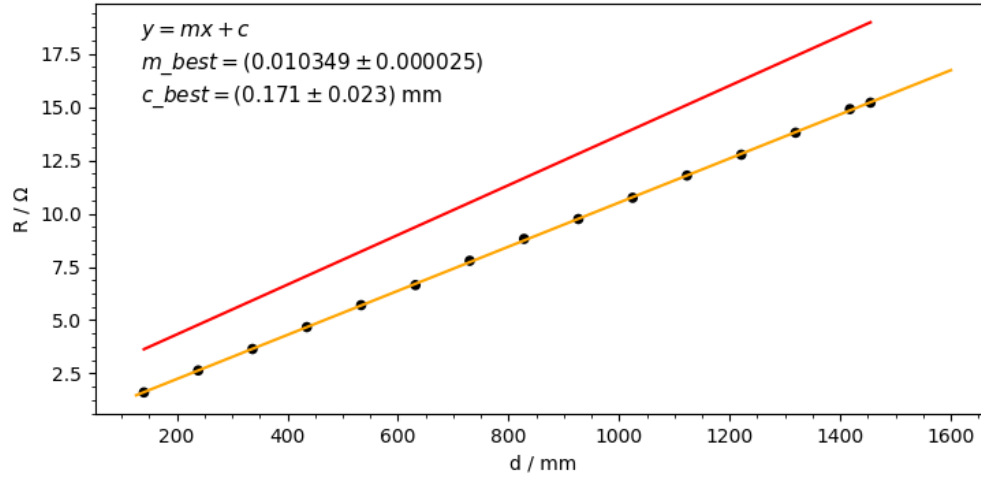
Finds pads from fiducials
Measures resistances,
short circuits and HV
leakage currents.

Measures locations of
fiducials for metrology
Example bond pad
field with 3 fiducials

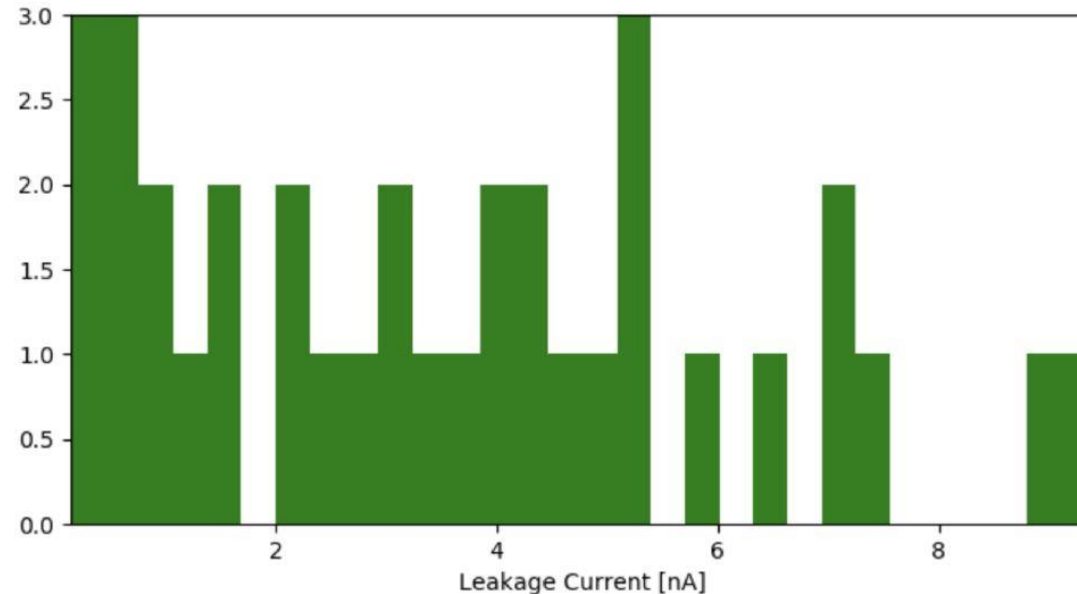


2 independent probe heads with cameras for alignment with
XYZ control

Example of measurement of resistance versus length for 100 μm tracks.



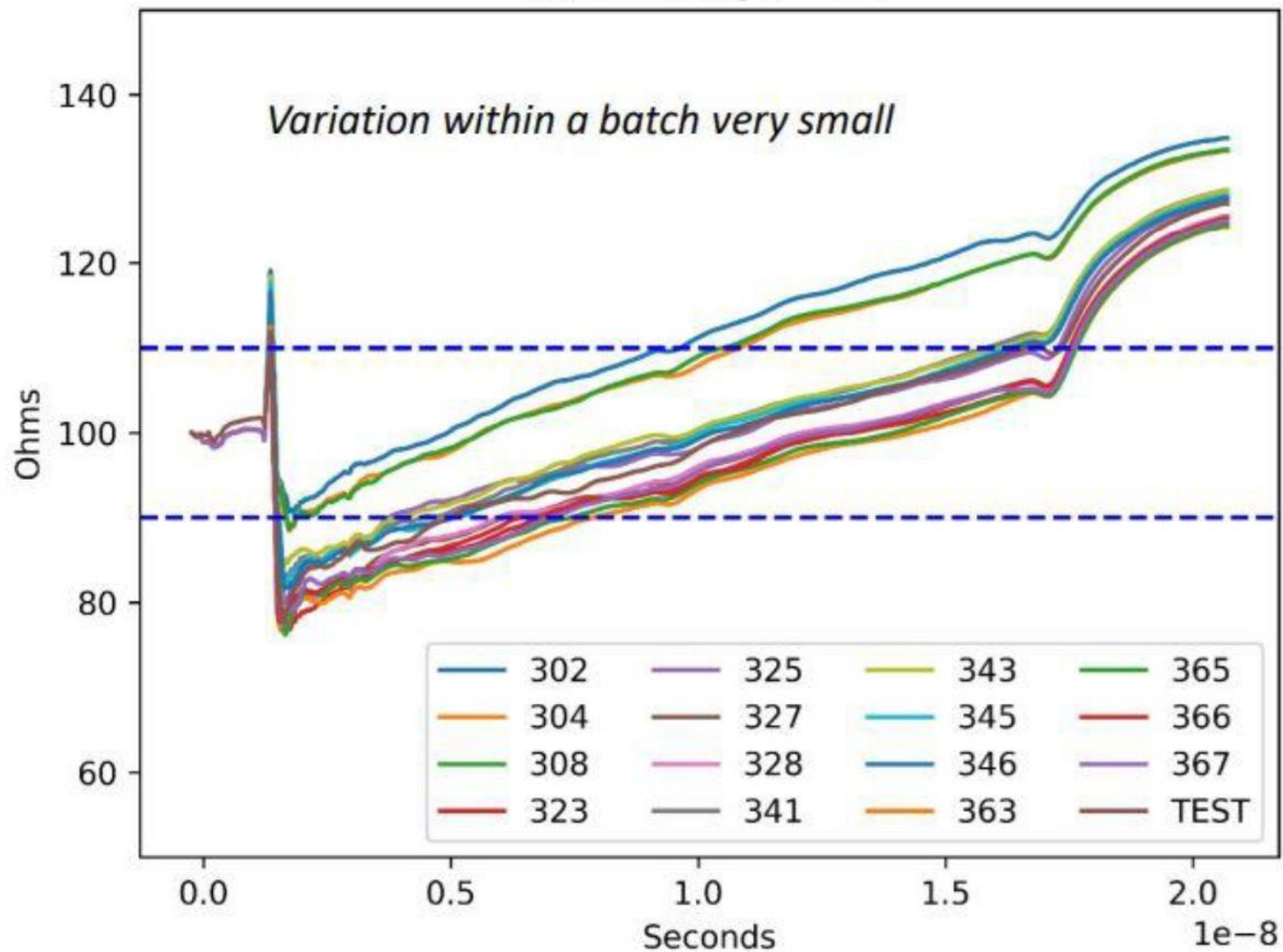
Histogram of HV Leakage Current Measurements



Example tape.
HV leakage current safely below limit of 20 nA

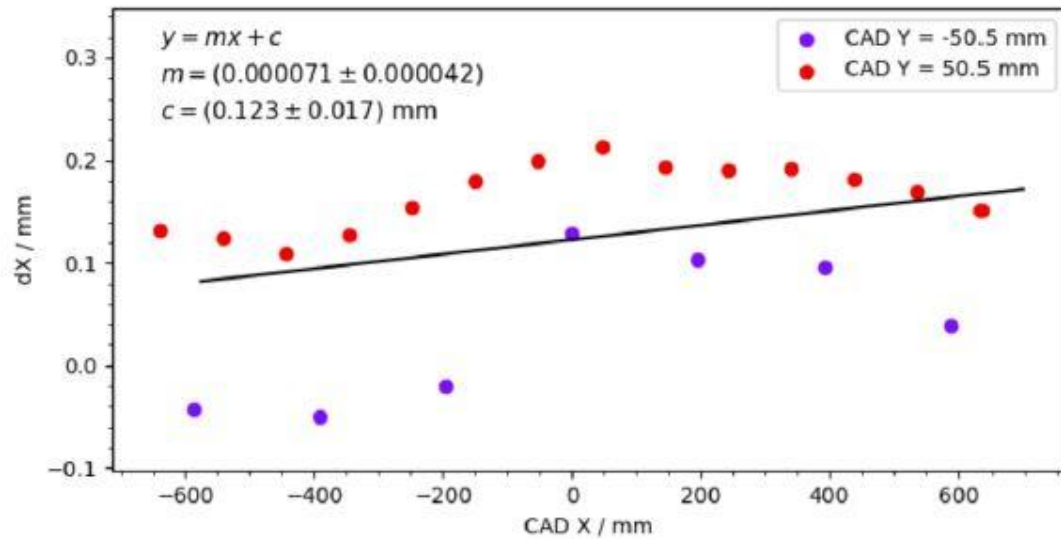
Measured resistances lower than maximum allowed value for sample of tapes

Example of TDR traces for batch of prototype tapes
Determine Impedance and attenuation.



Example metrology plots for one barrel bus tape using BTTR

Stretch: slope dx vs x < 0.001



Distortion in y vs x
Maximum allowed: 0.6 mm

