

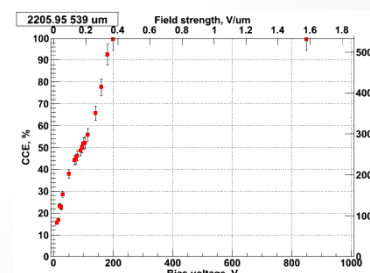
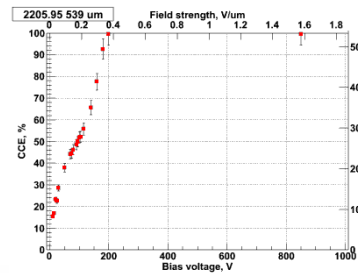
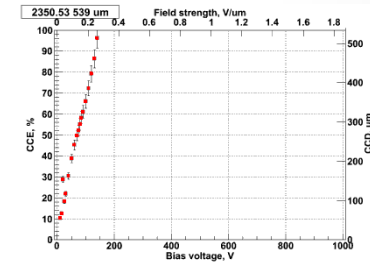
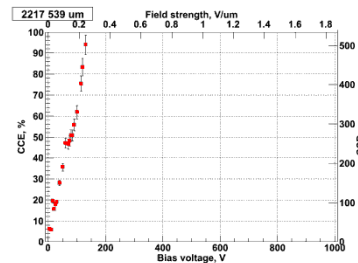
Marika Kuczynska

CCE measurement for diamond detector

5.08.2013

Previous Week

- calibration new setup
- CCE measurements for diamond (23851342)
- Problem with CCE results:



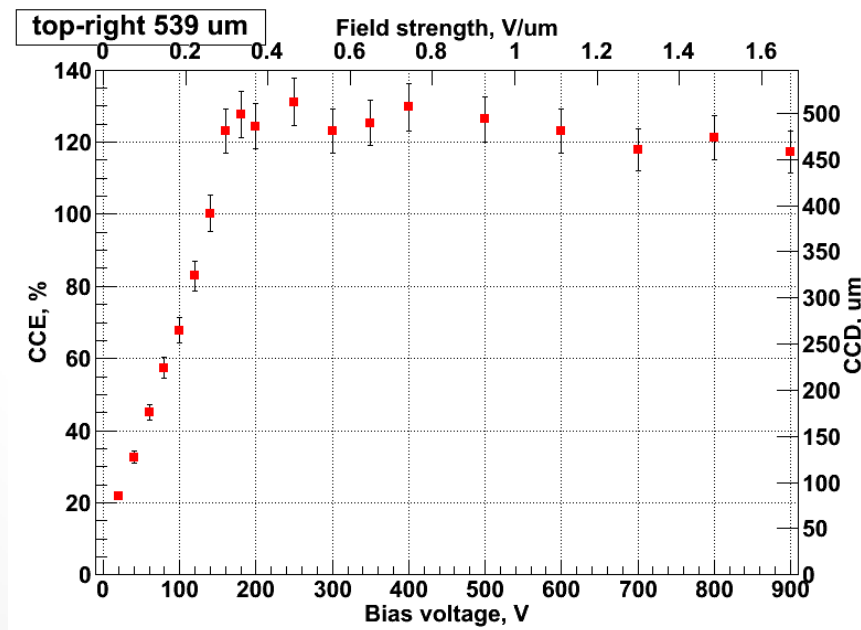
looking for solutions:

- checking the calibration factor:
 $k = 61.38$ after re-calibration $k = 61.07$
- Checking the connection.
- re-measurements
 - measurement of signal from diamond and pedestal
 - measurement of separated signal of diamond
 - measurement of separated signal of pedestal
- checking the distribution fitting
- calculate the CCE by my own and compare to program results.

calculate the CCE

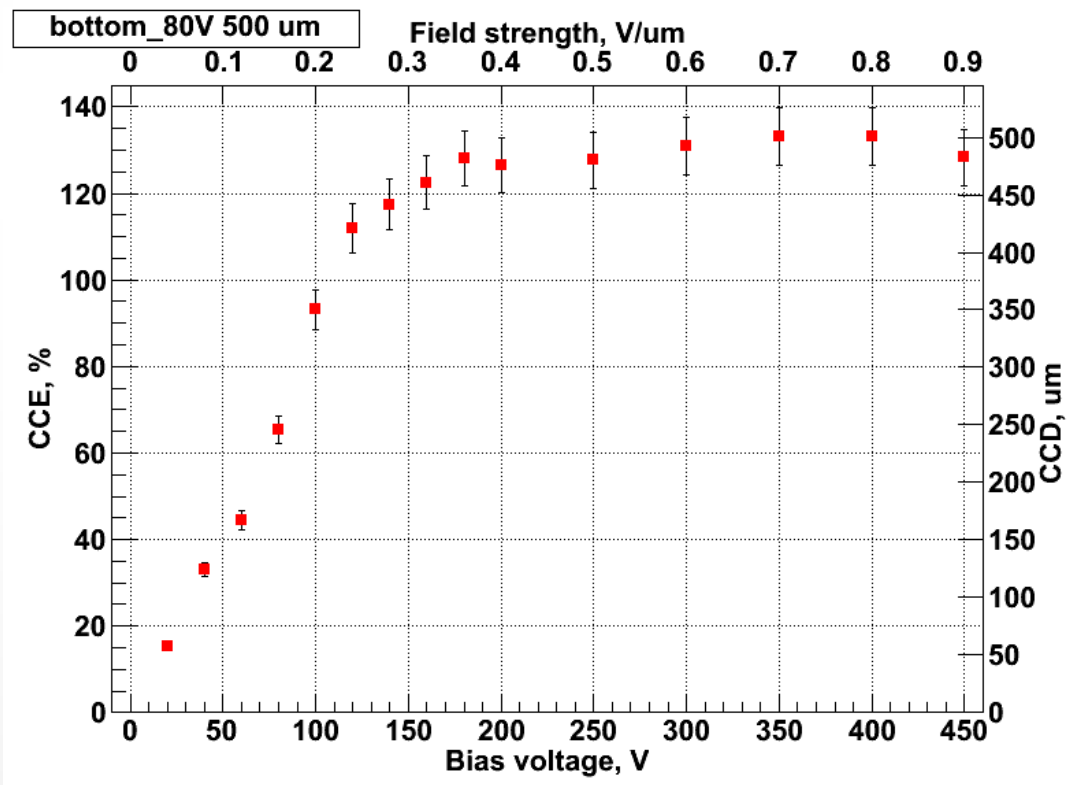
$$\text{CCE} = \frac{\text{CCD}}{L} = \frac{(\text{MPV} - \text{PEDmean}) \cdot \text{calibration}}{Q_g \cdot L} \cdot 100\%$$

- 100% level is exceeded around 130V.
- The maximum value is reached by 138%, while the average levels maintained at a level of 130%



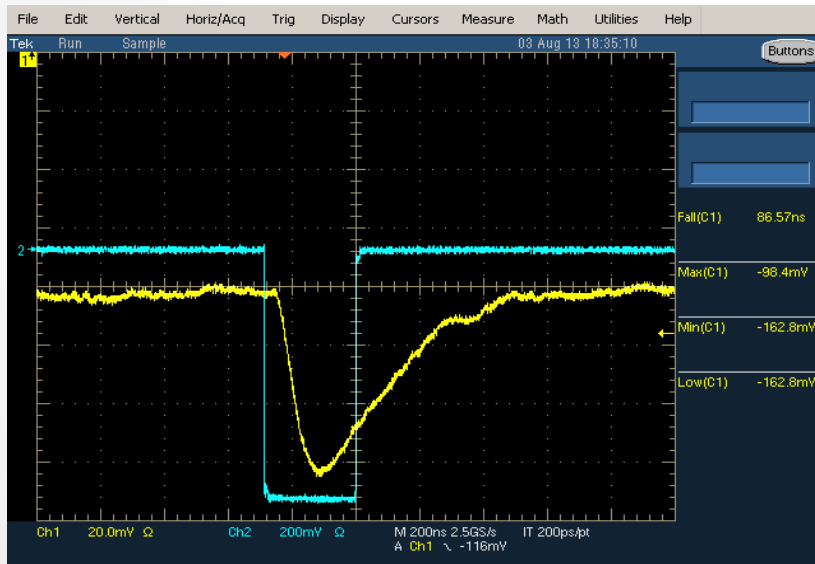
checking the setup

- CCE measurement for SCO1530 diamond which was already measured and had 100% CCE.



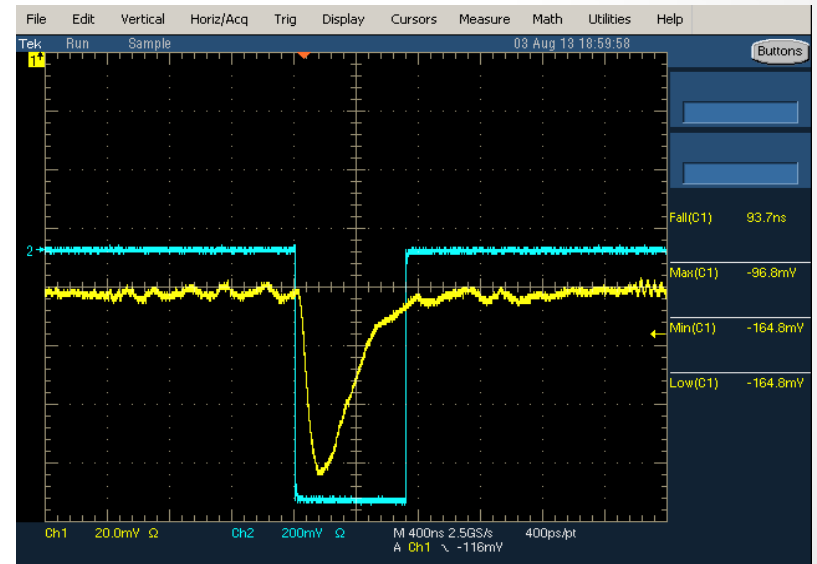
reason... ?

How it look like



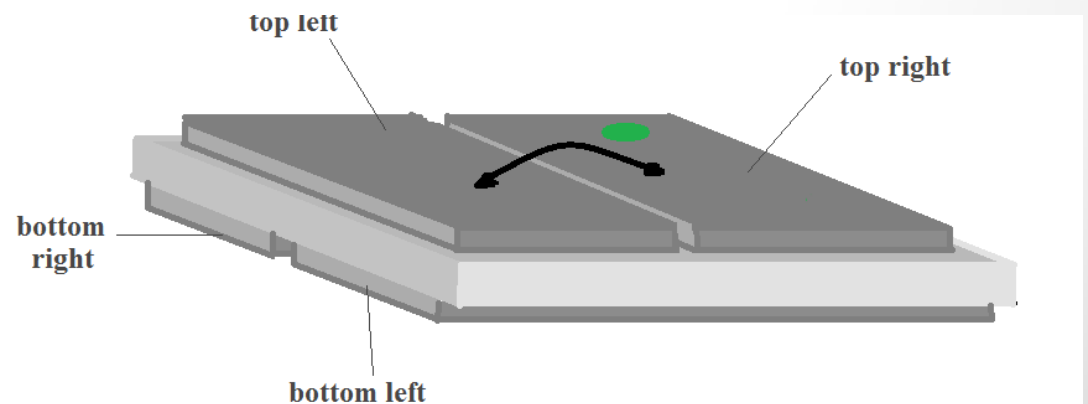
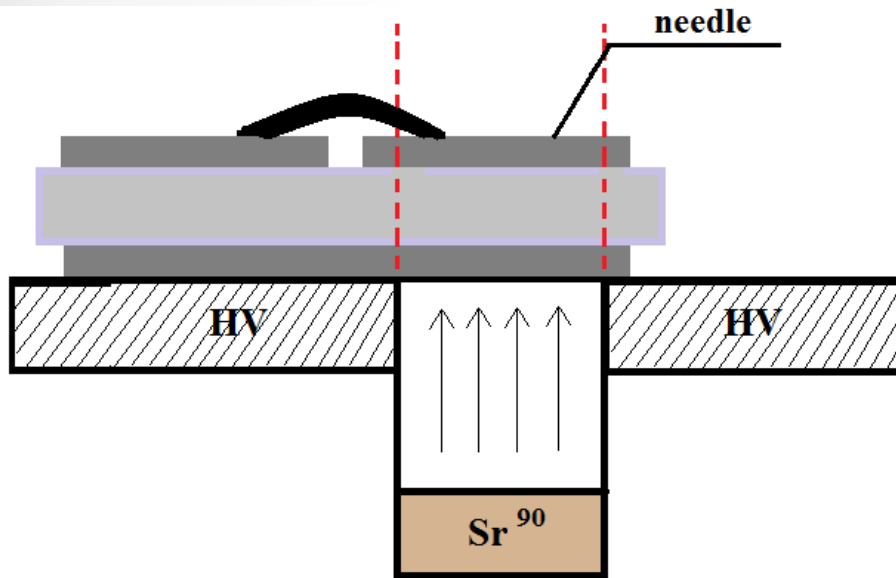
1.52um

how it supposed
look like



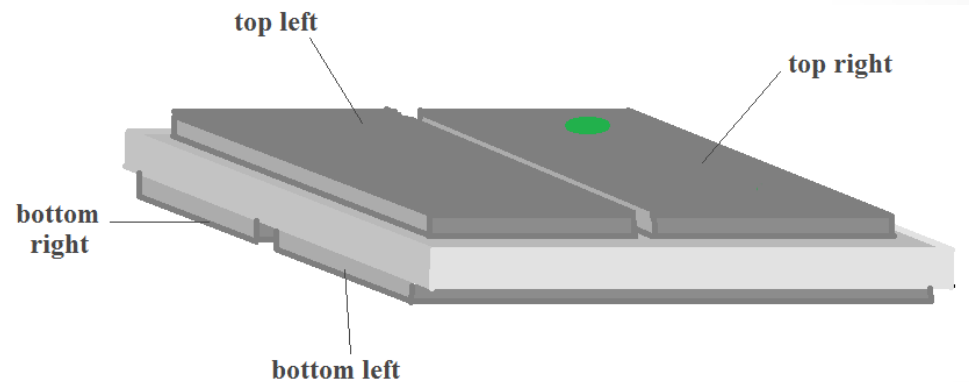
5.3um

Connection of two metalization

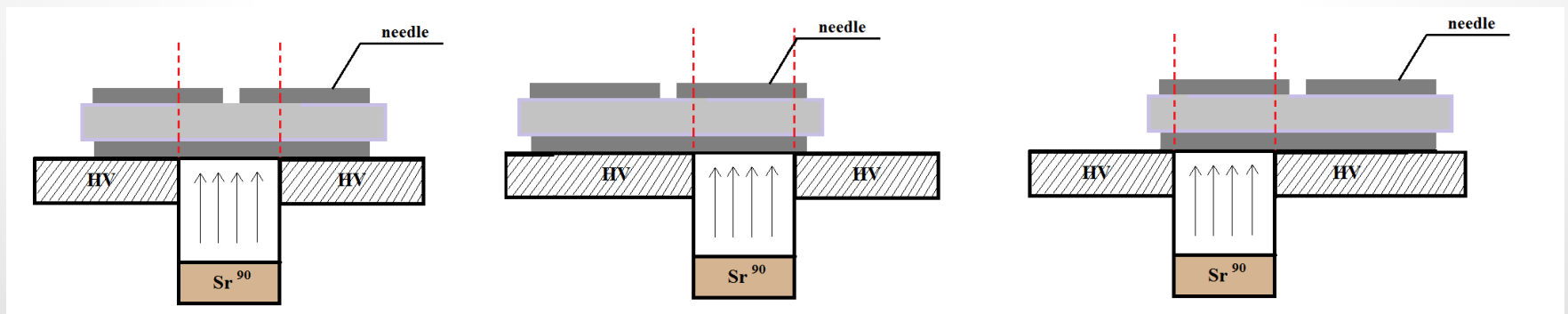


Measurements of diamond

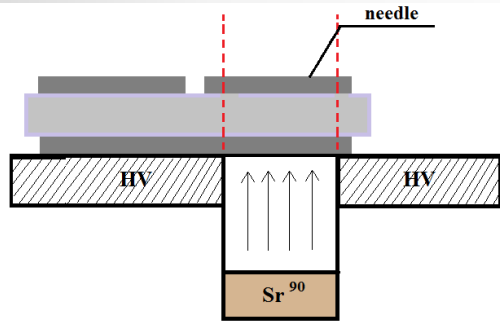
23851253



- dependence of the location of the diamond

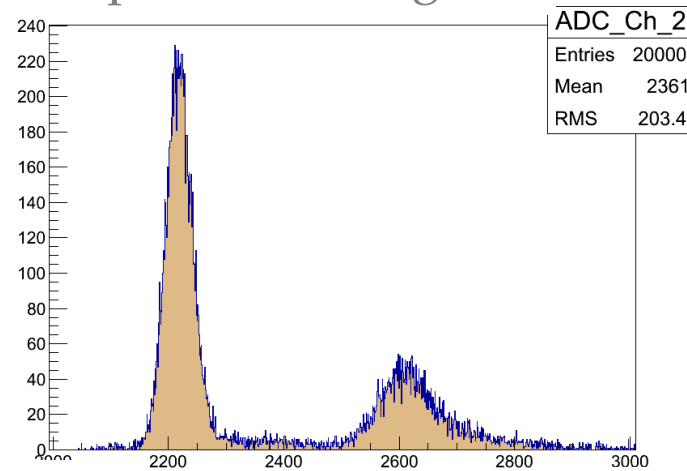


CCE – measurements

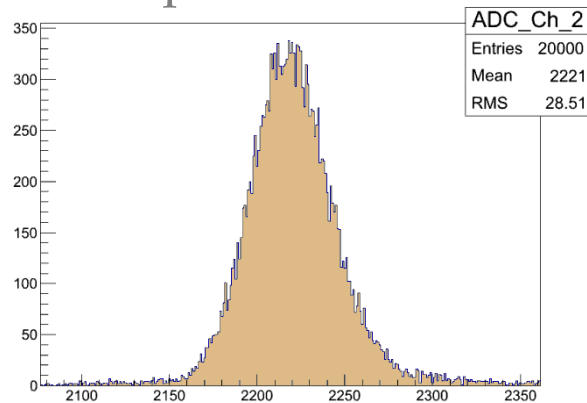


200V

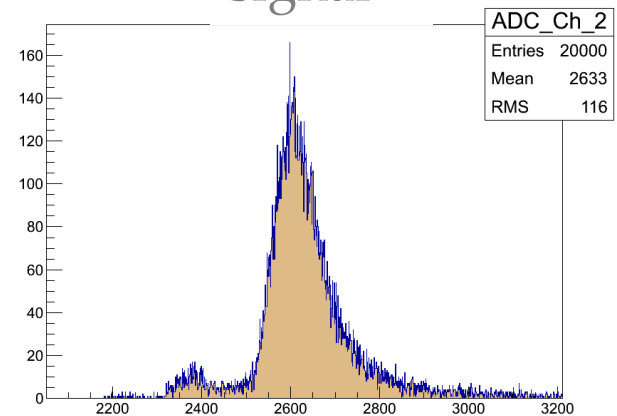
pedestal & signal



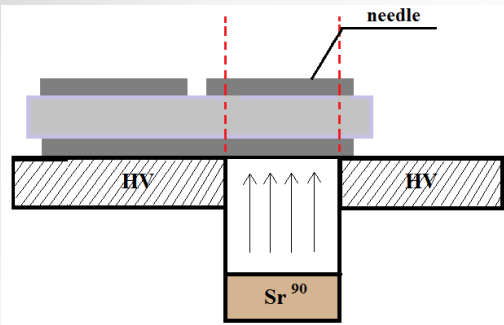
pedestal



signal

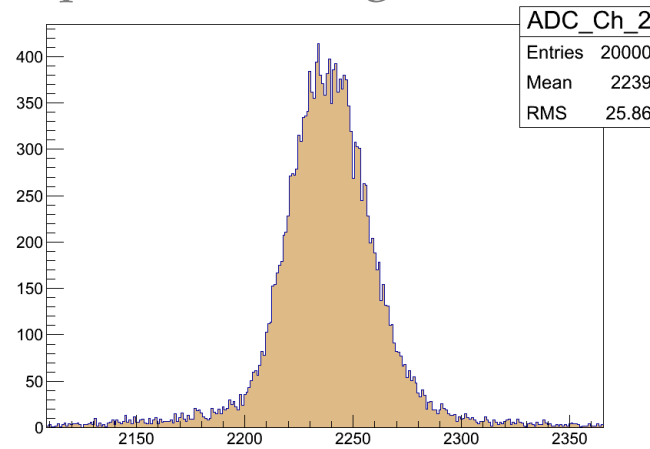


CCE – measurements

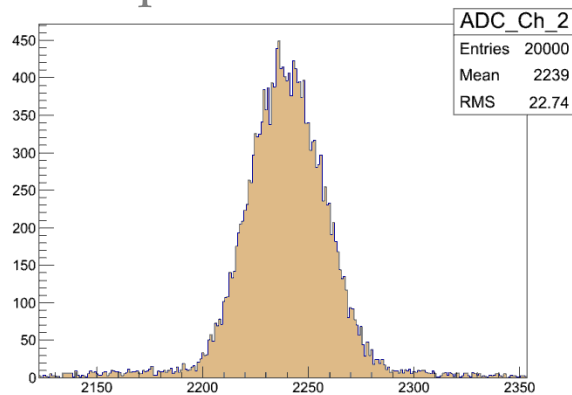


800V

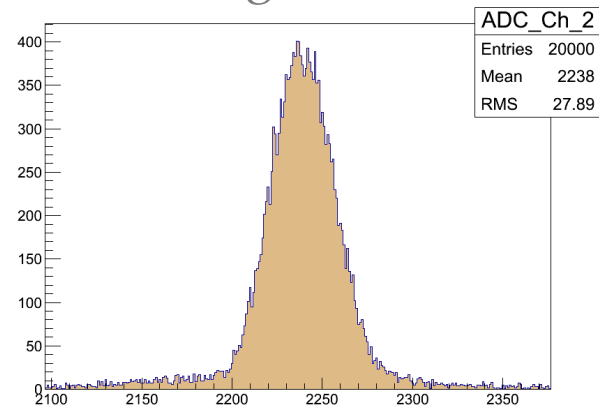
pedestal & signal

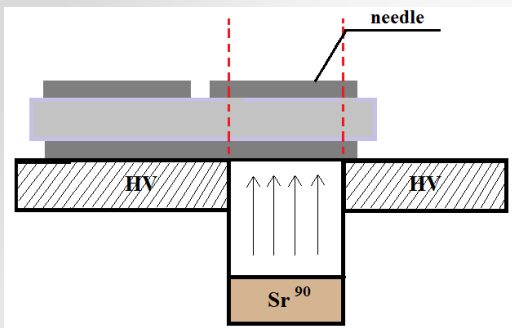


pedestal



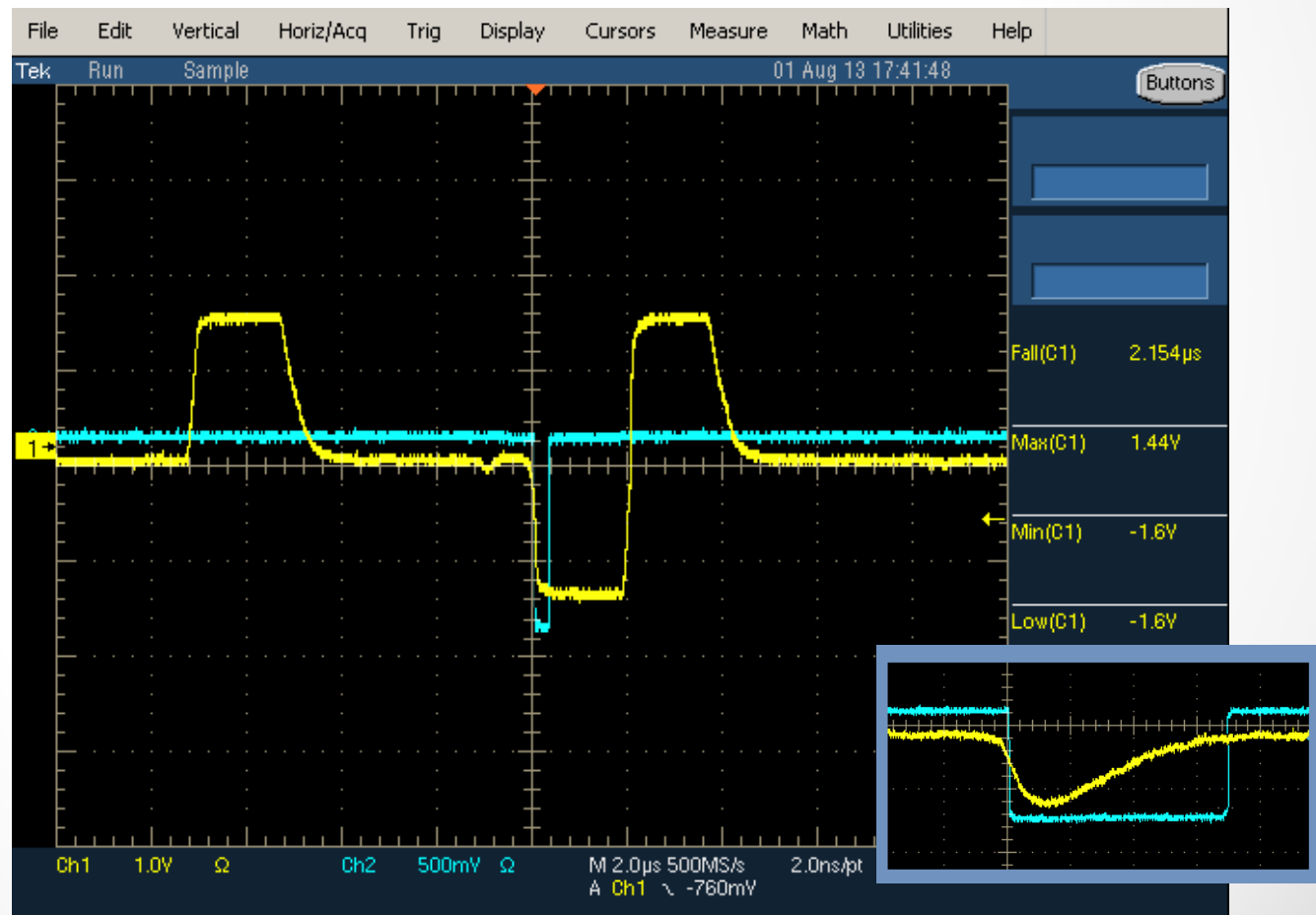
signal



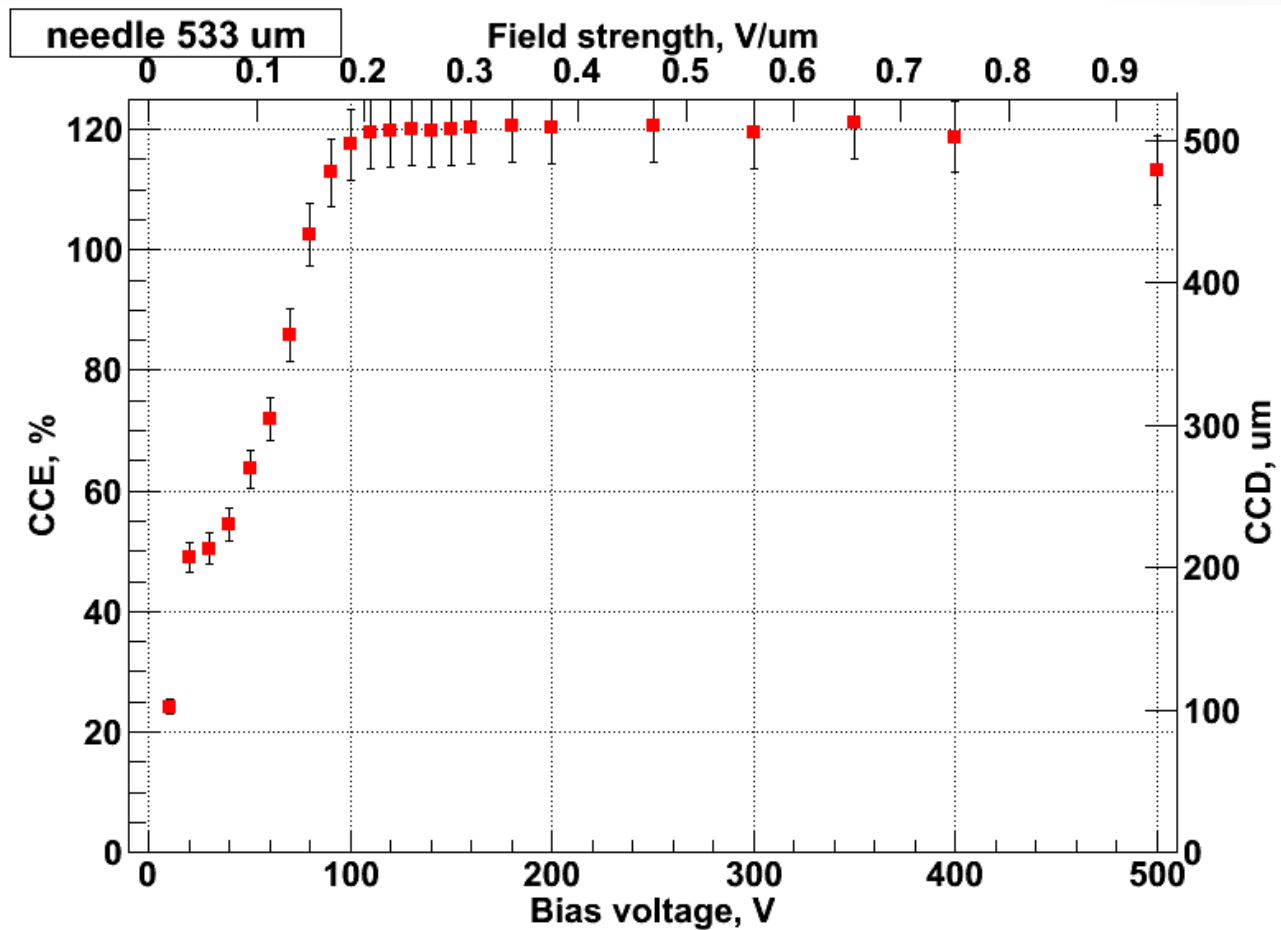
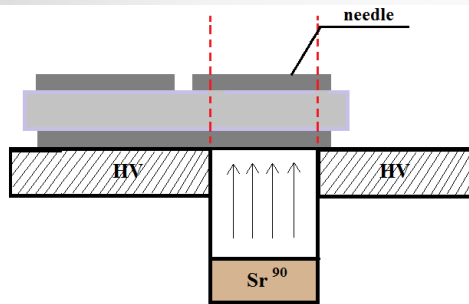


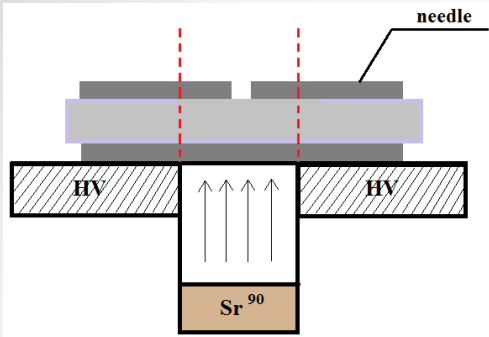
Oscilloscope display

800V



CCE plot

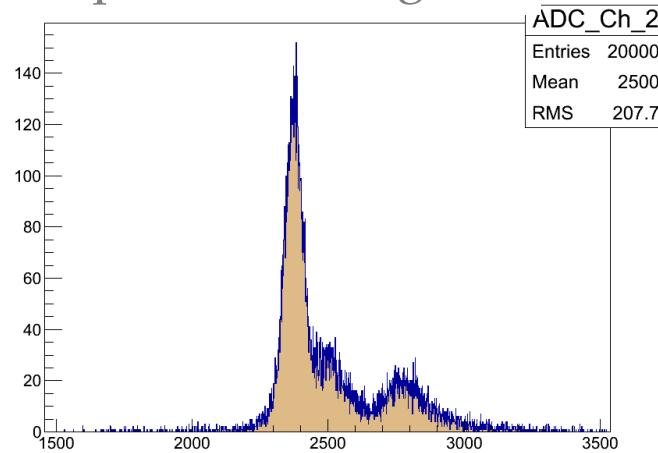




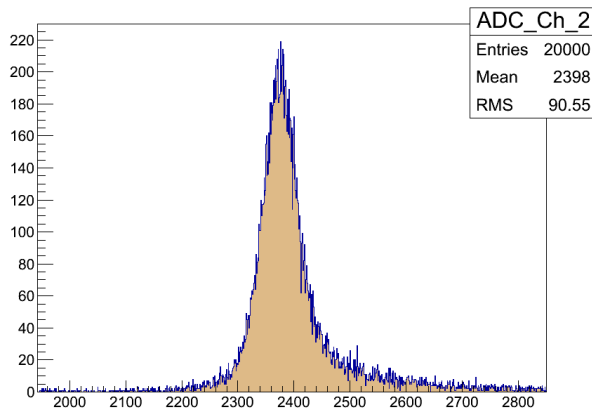
CCE – measurements

350V

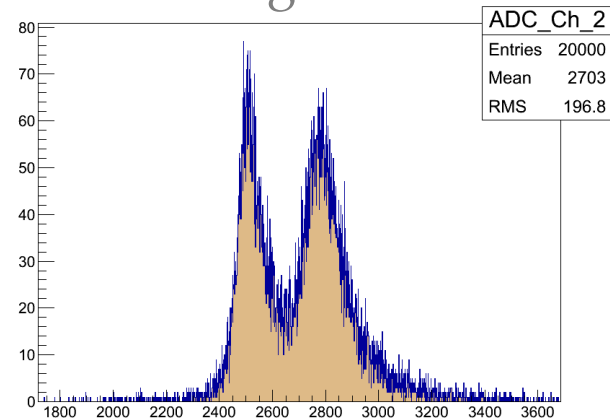
pedestal & signal

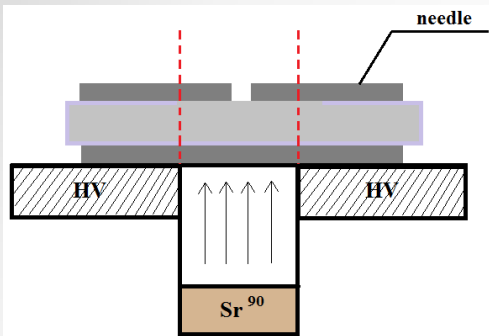


pedestal



signal

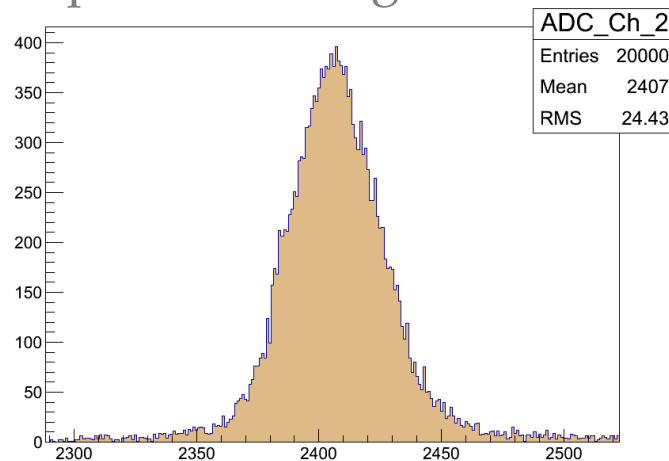




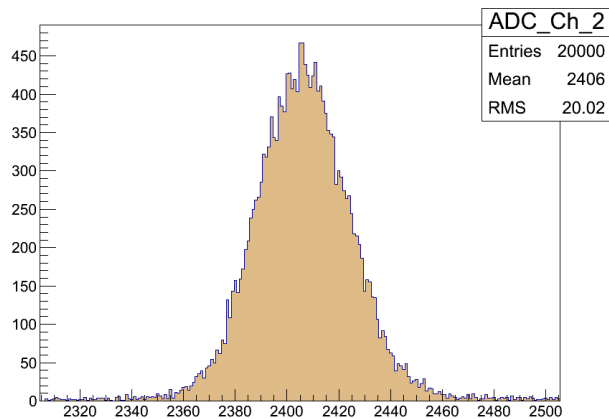
CCE – measurements

800V

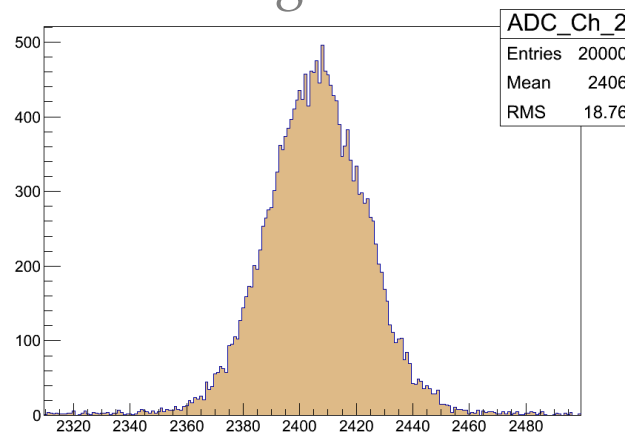
pedestal & signal



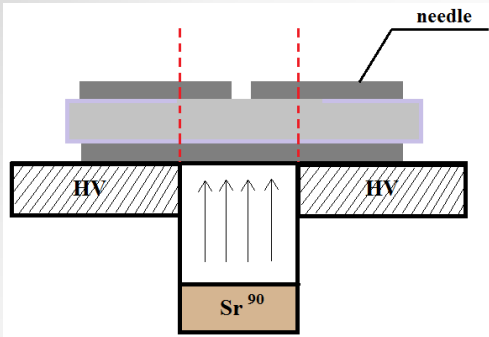
pedestal



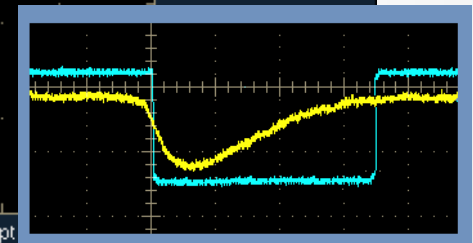
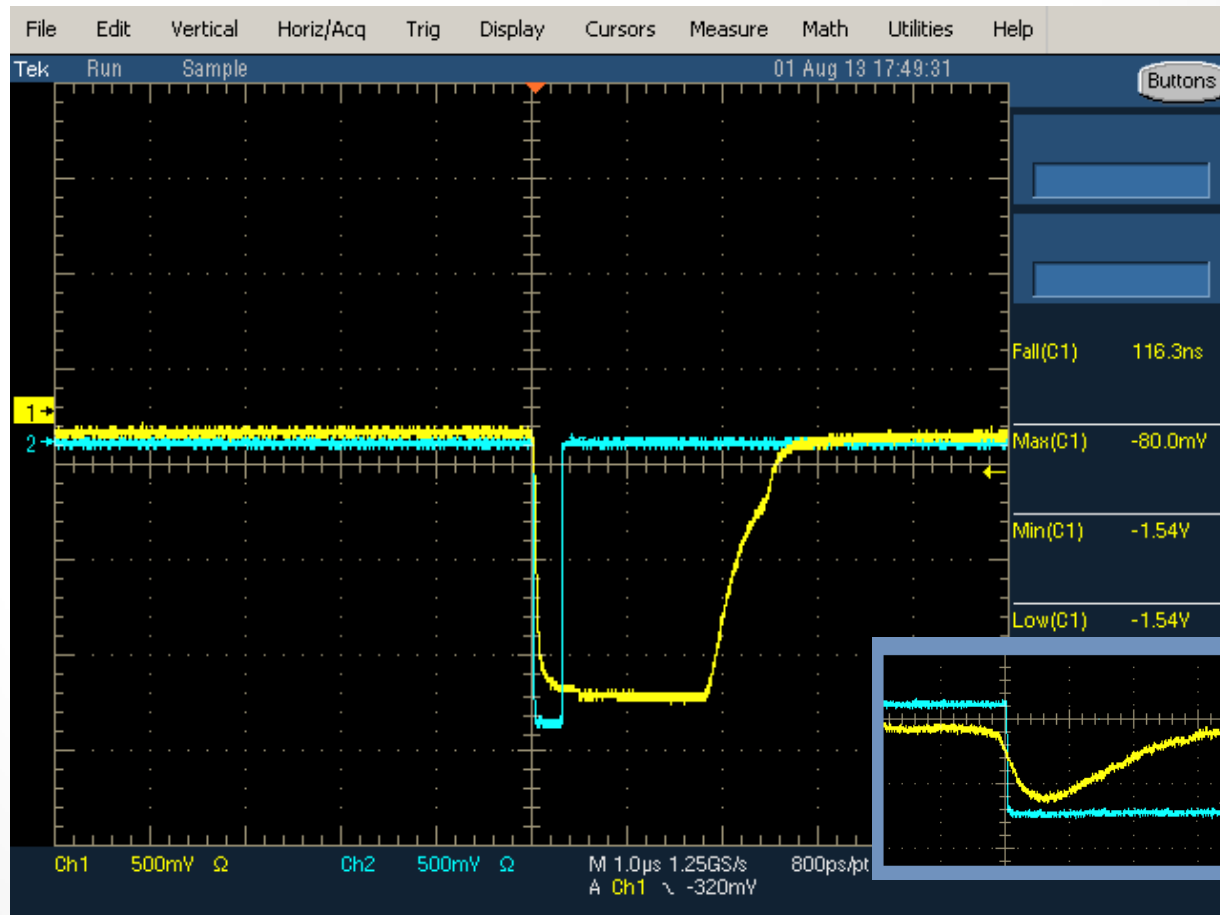
signal



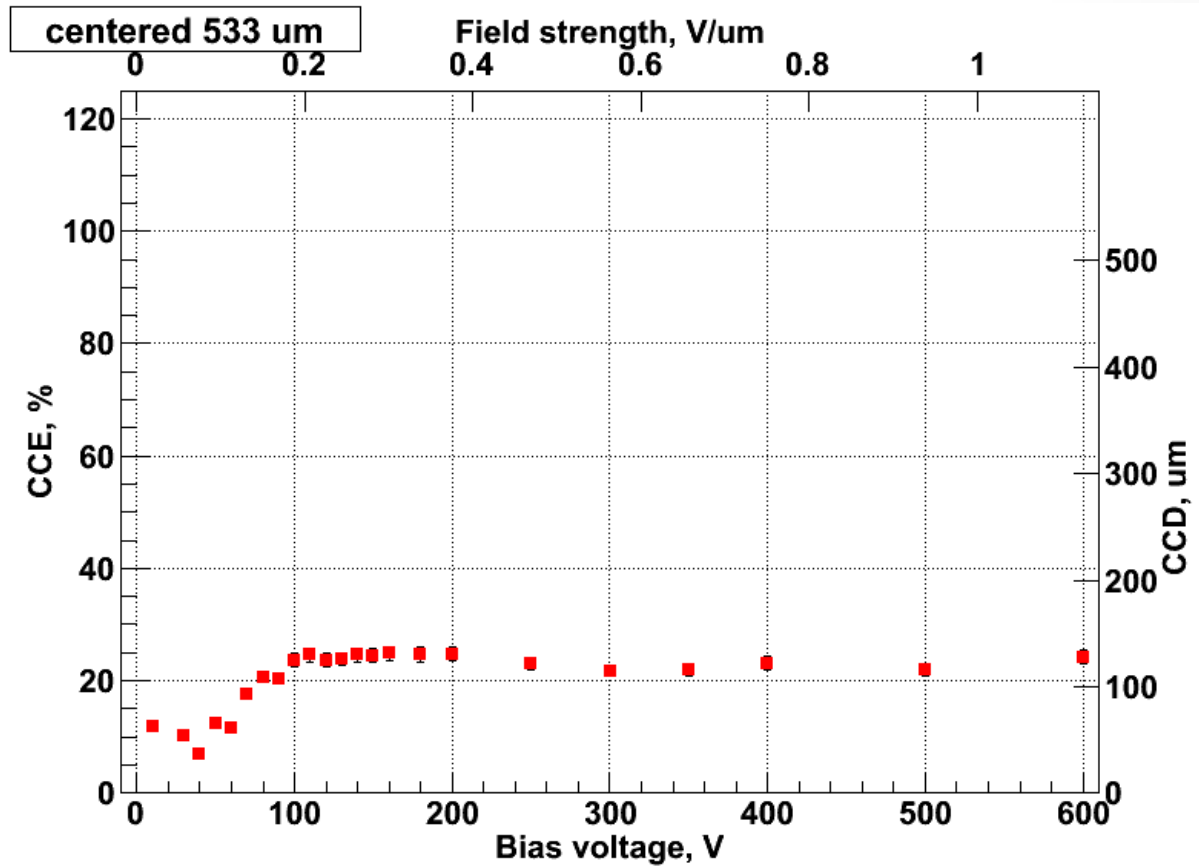
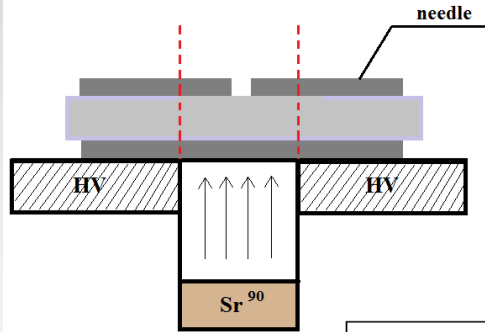
Oscilloscope display

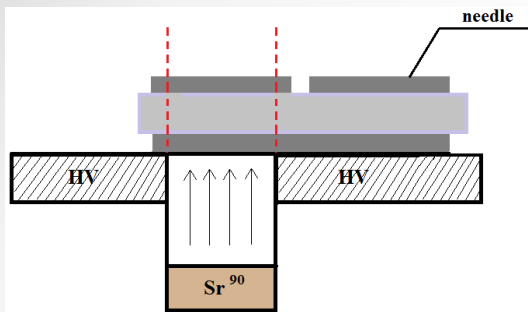


800V



CCE – plot

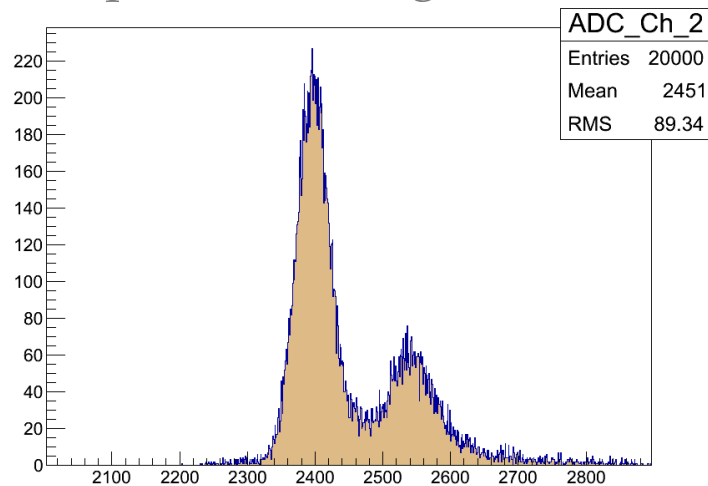




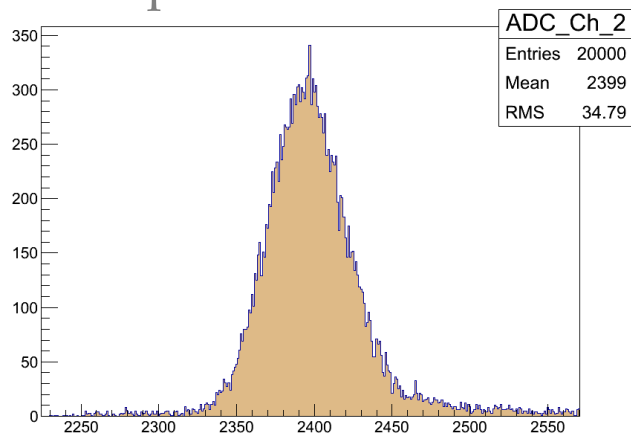
CCE – measurements

pedestal & signal

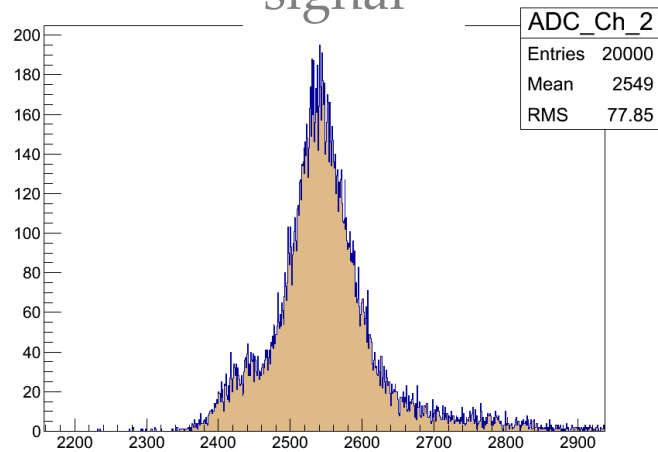
150V

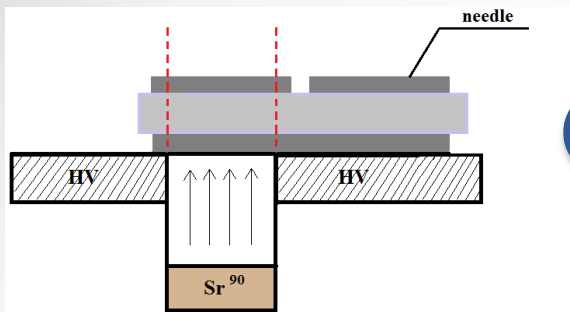


pedestal



signal

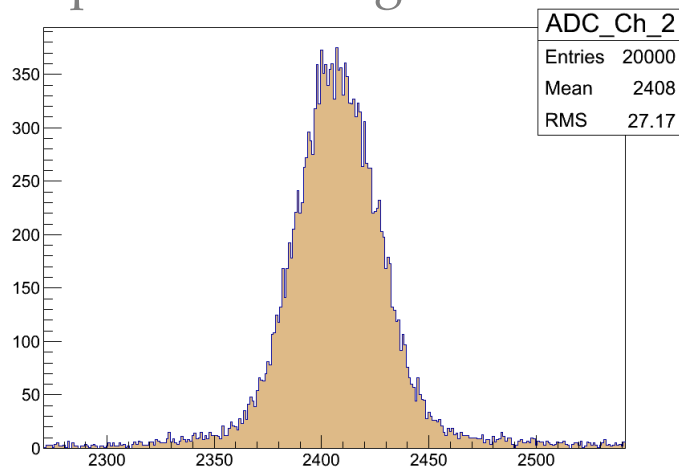




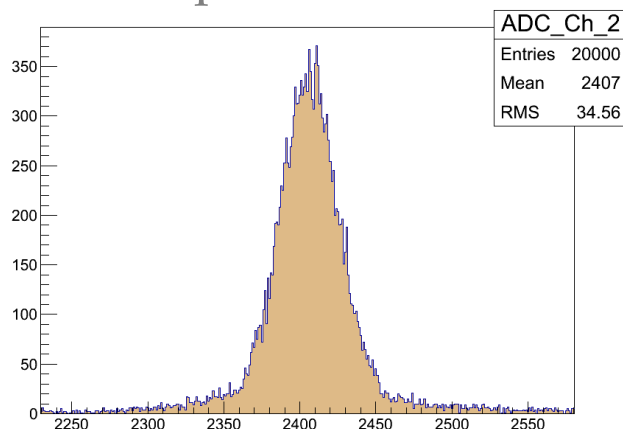
CCE – measurements

800V

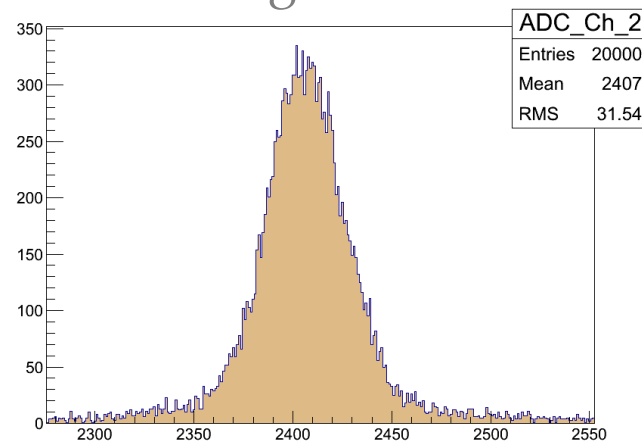
pedestal & signal



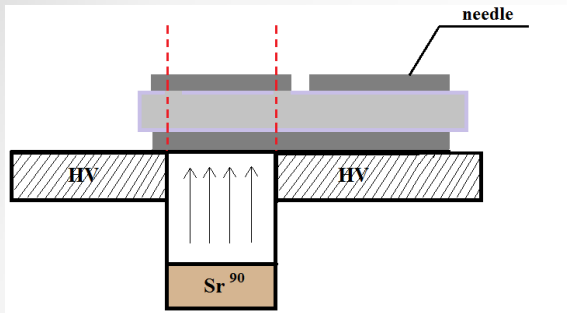
pedestal



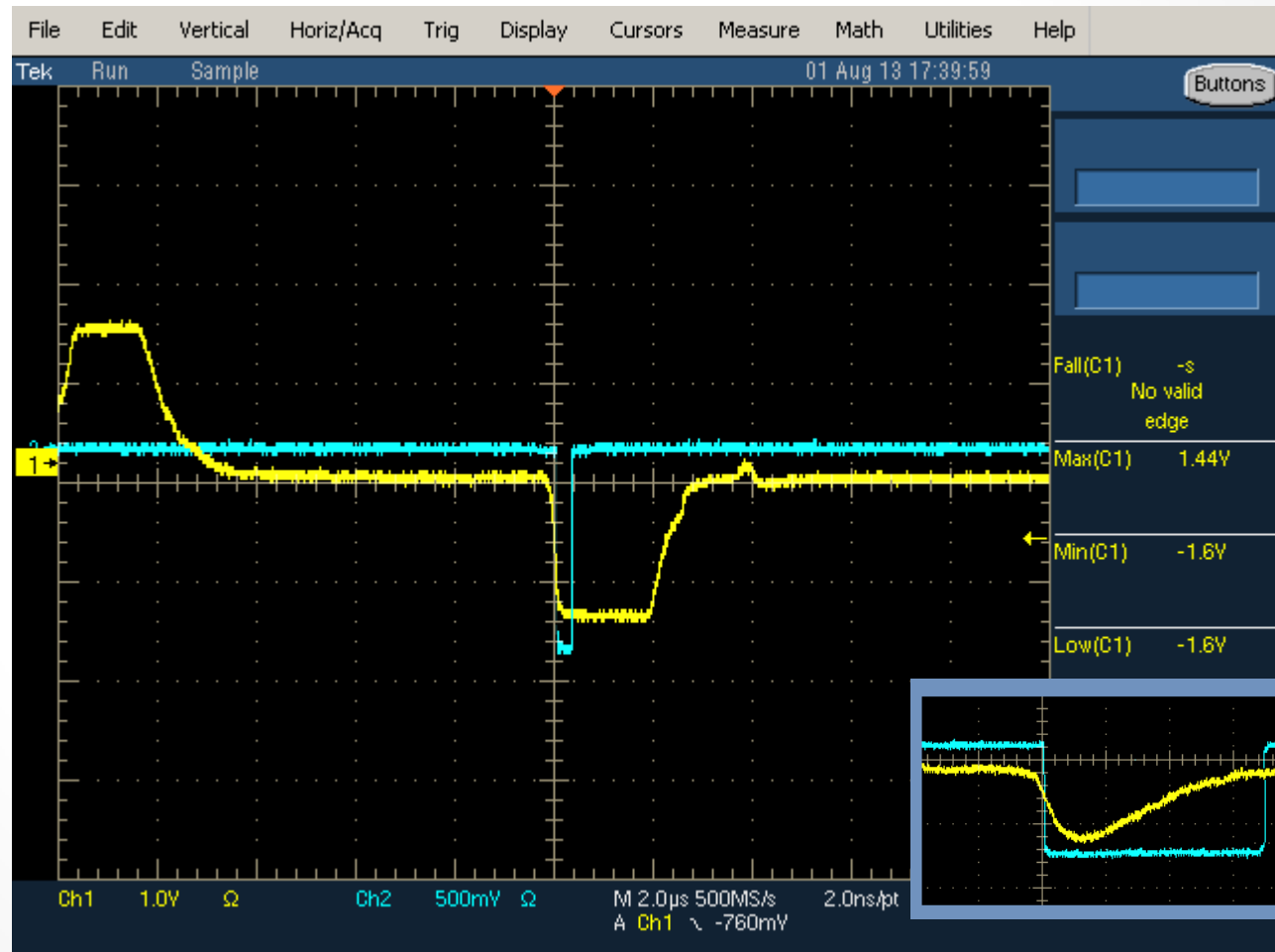
signal



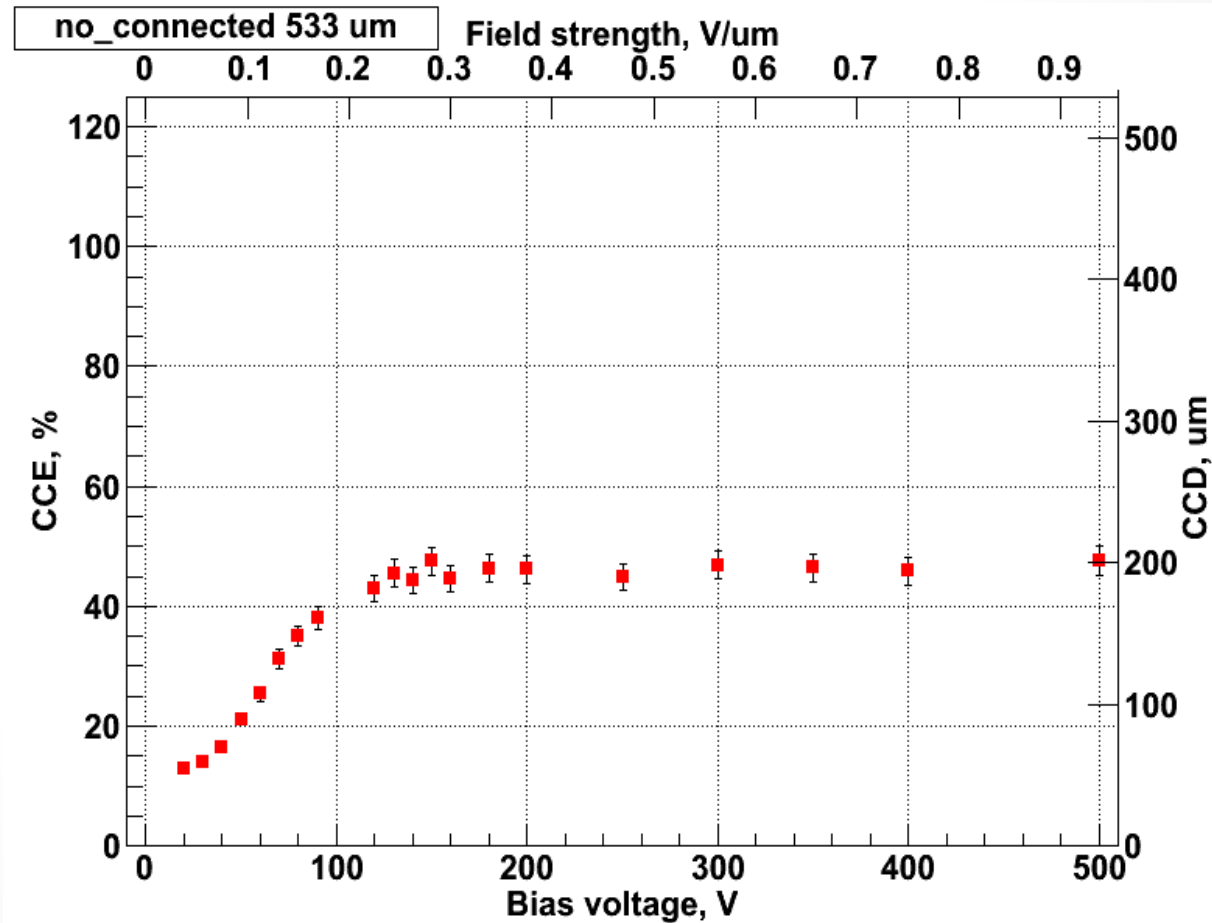
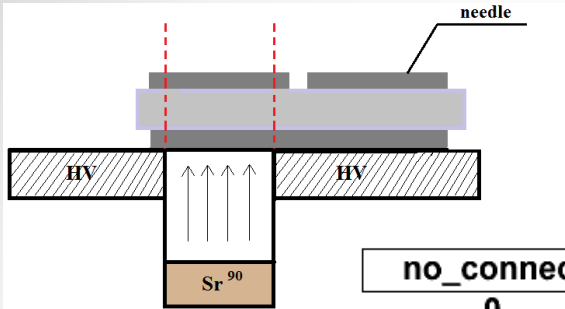
Oscilloscope display



800V



CCE – plot



The plan for this week:

- Measurement of diamond with connected metalizations.
- CCE measurements for six BCM1F diamonds
 - new setup
 - old setup
- CCE measurements for SCVD:
 - 238513**42**
 - 238513**43**
 - 238513**53**