



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG

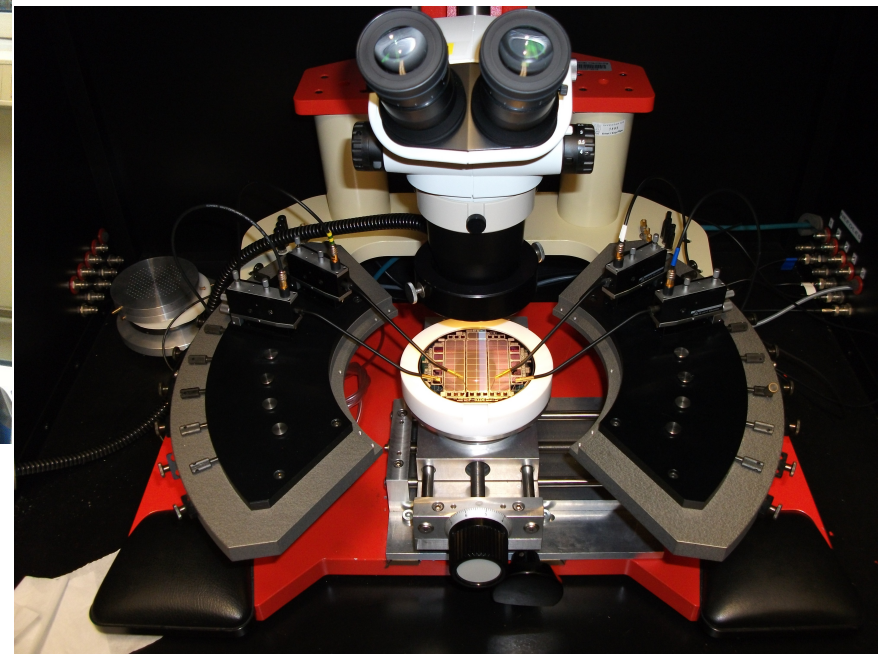
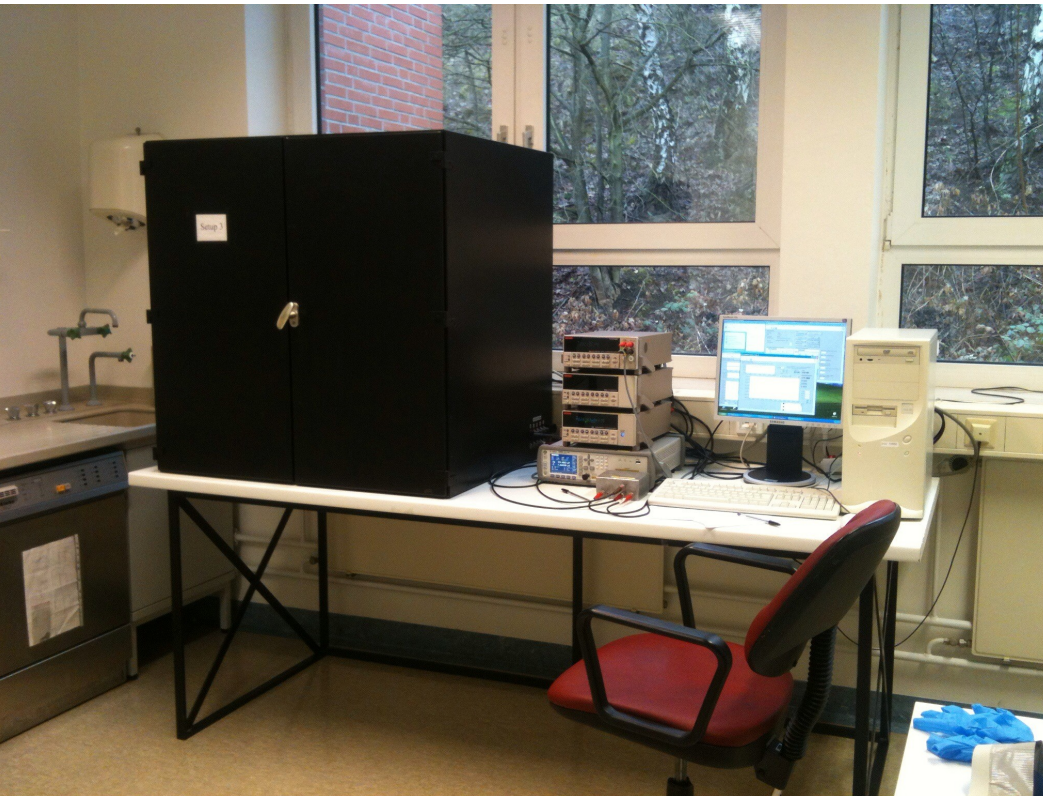


# IVCV New Batch

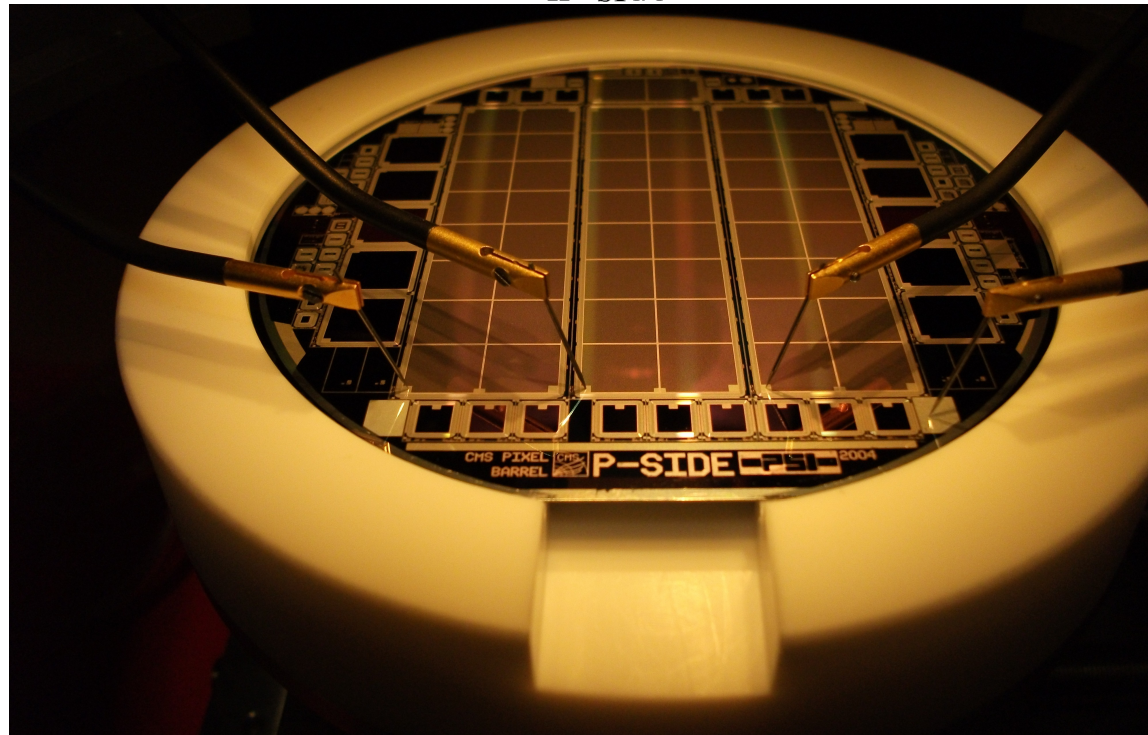
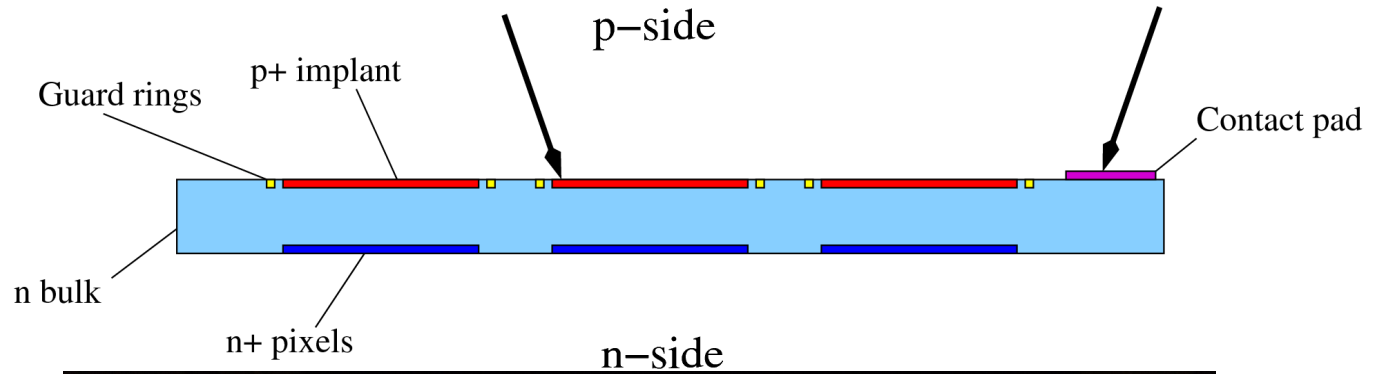
Matteo Centis Vignali for the UHH pixel group

# Gray room setup

- Temperature sensor
- Picoammeter
- Bias source
- LCR meter
- Teflon chuck
- Microscope



# Contacts





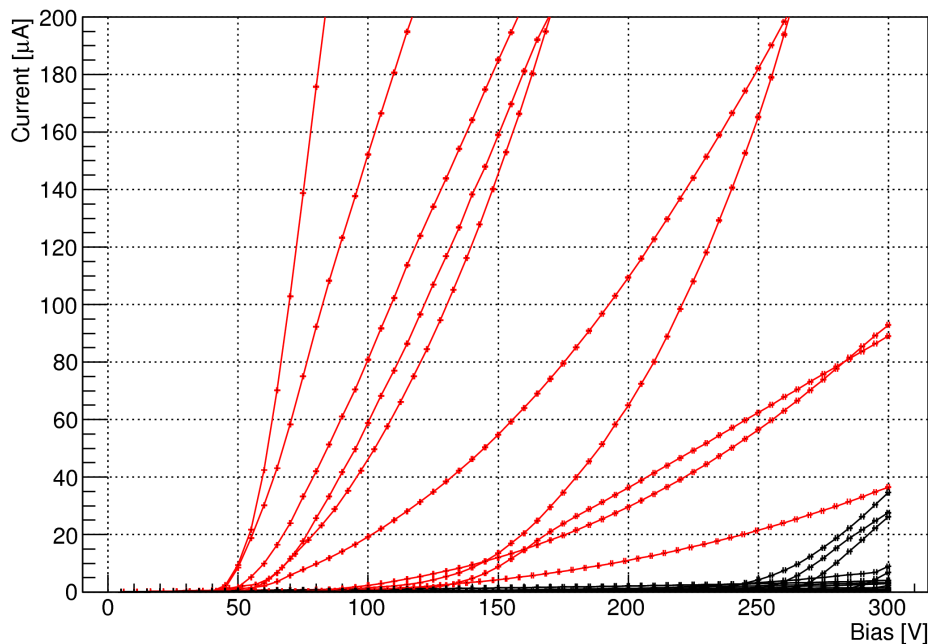
# IV curves

- 36 sensors measured so far
- IV characteristic determines if a sensor is good

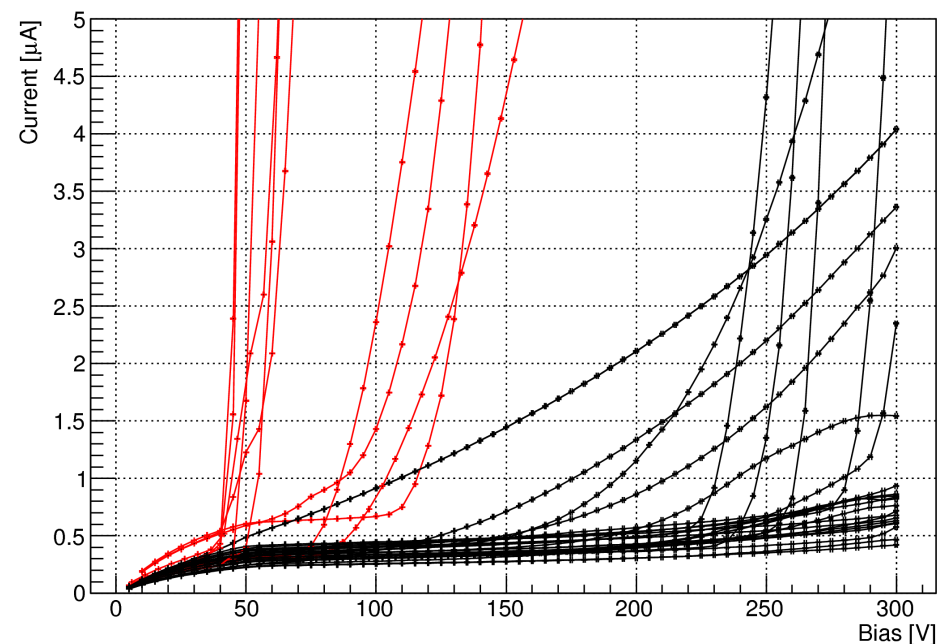
Bad sensor:

- $I(150V) > 2 \mu A$
- $I(150V) / I(100V) > 2$

IV characteristic



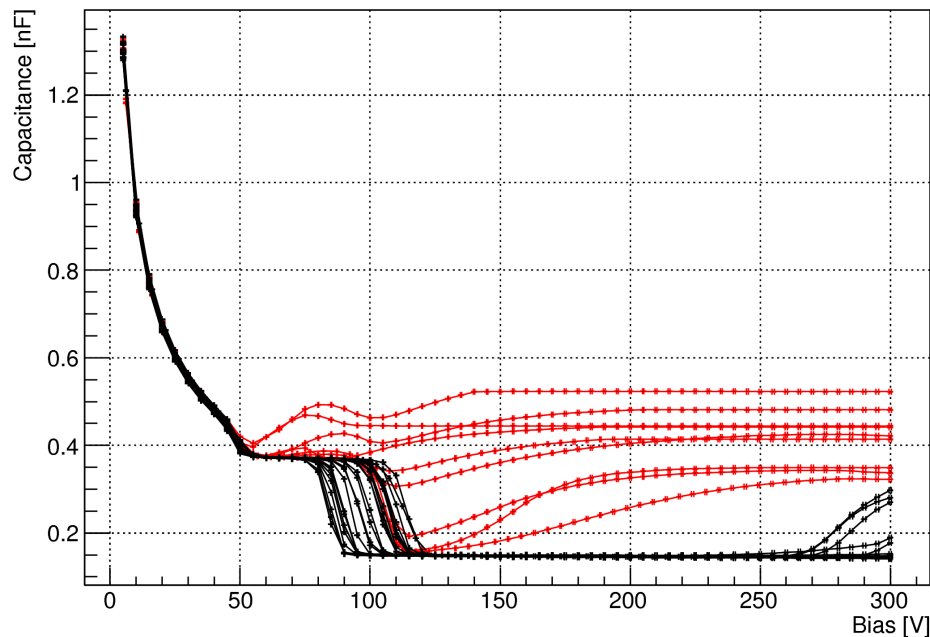
IV characteristic



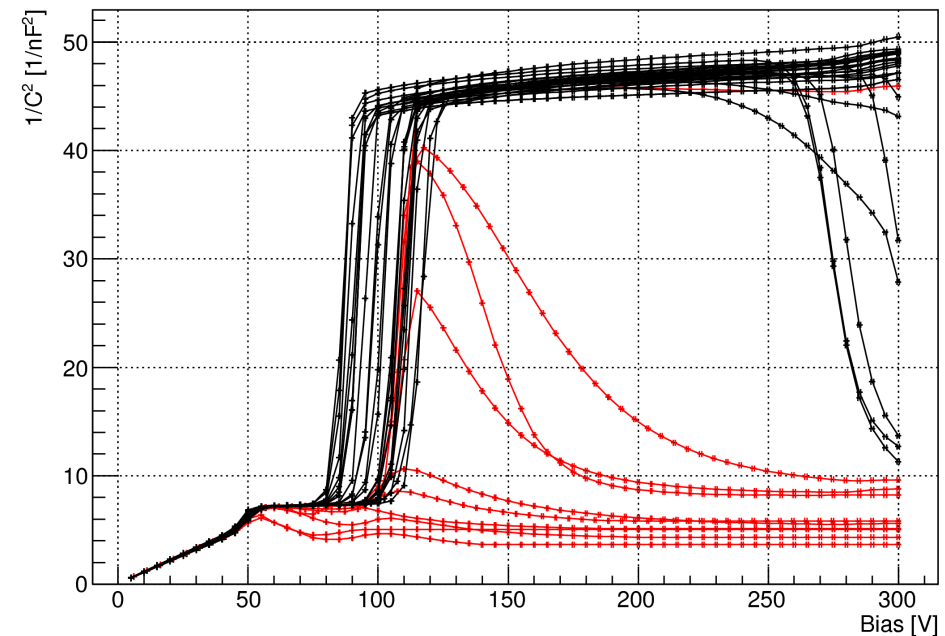
# CV curves

- CV characteristic is used to measure the depletion voltage
- $V_{dep}$  is around 50 V

CV characteristic

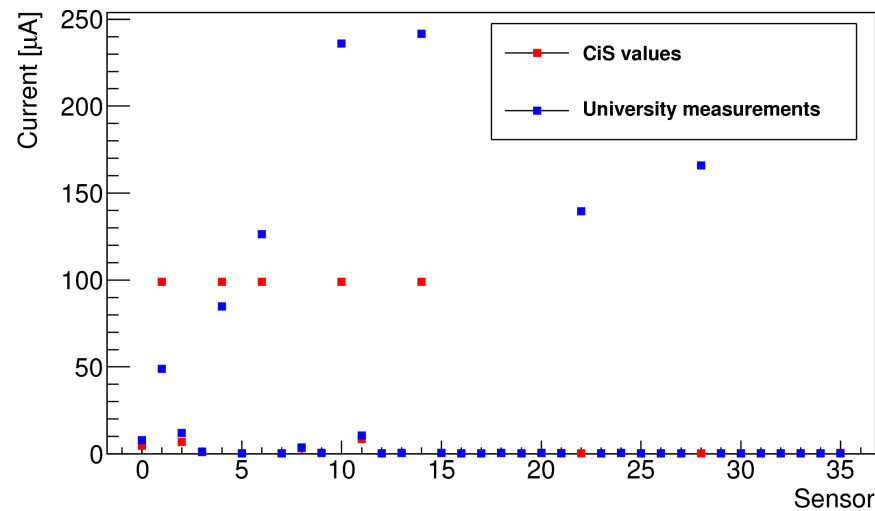


$1/C^2$  characteristic

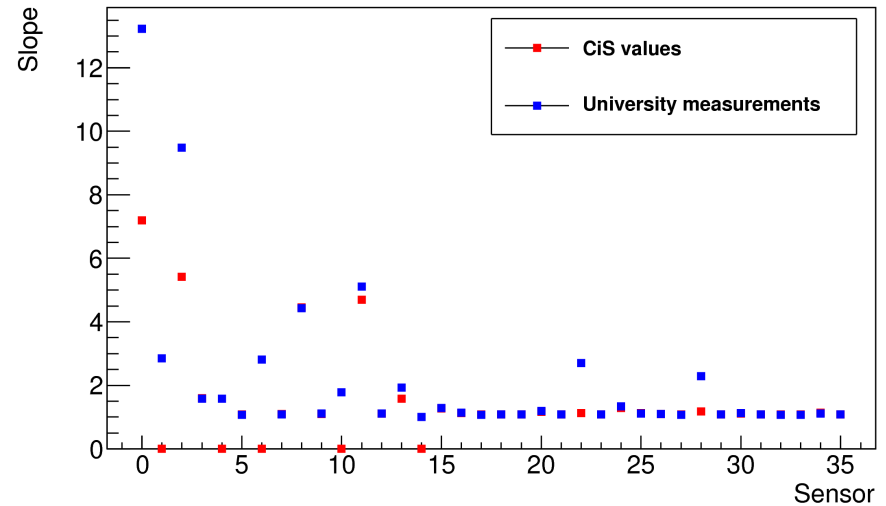


# Comparison with the vendor

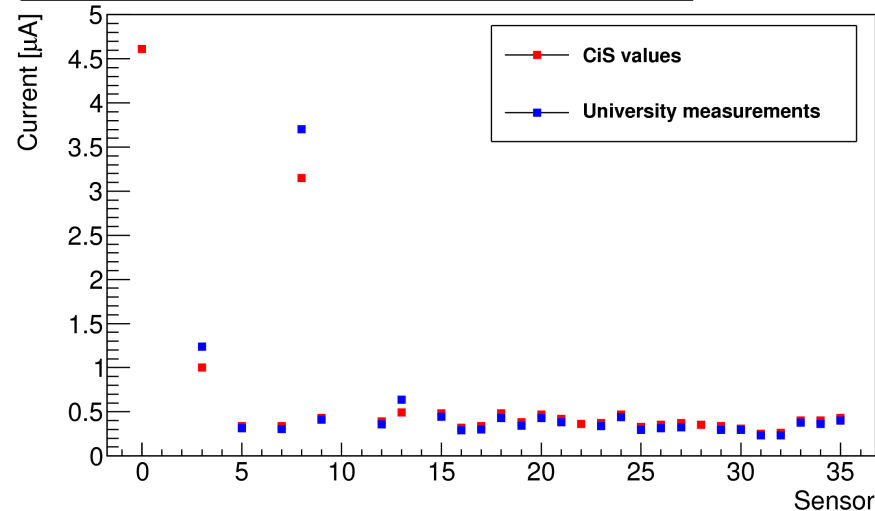
Current at 150V reverse bias, corrected to 20°C



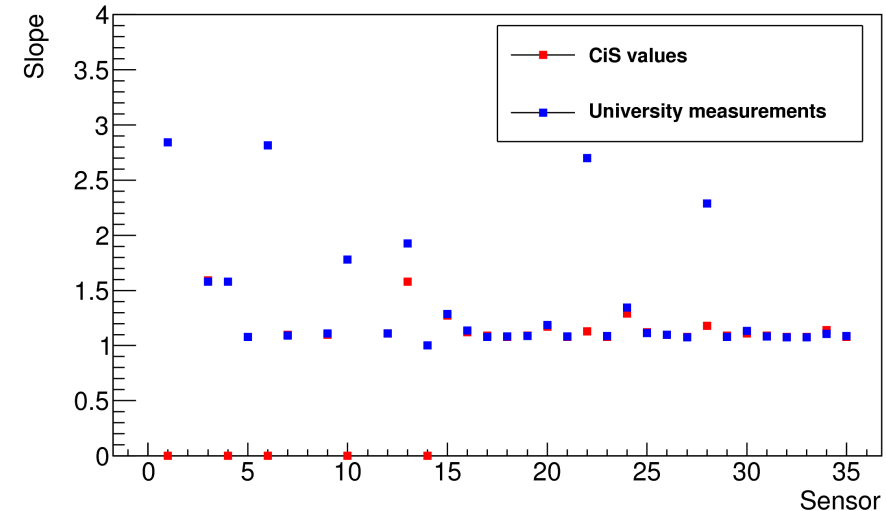
Slope of the IV characteristic  $s = I(150) / I(100)$



Current at 150V reverse bias, corrected to 20°C



Slope of the IV characteristic  $s = I(150) / I(100)$



# Conclusions

- The setup for has been migrated to a gray room
- 36 sensors have been measured so far
- There is agreement between our measurements and the CiS ones
- 10 sensors have been graded as bad
- We received 50 wafers (150 sensors)
- Measuring time for one wafer ~1h
- The measure should be completed by the end of the month