

Status of sensor test

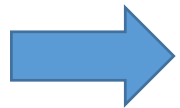
02/14/2019

Status (Plan)

- Comparison of CV measurements with & without G.R. connection

- Target : HPK Wo.8 single Set

- Have tried to connect G.R. to GND.  not so much difference, , ,



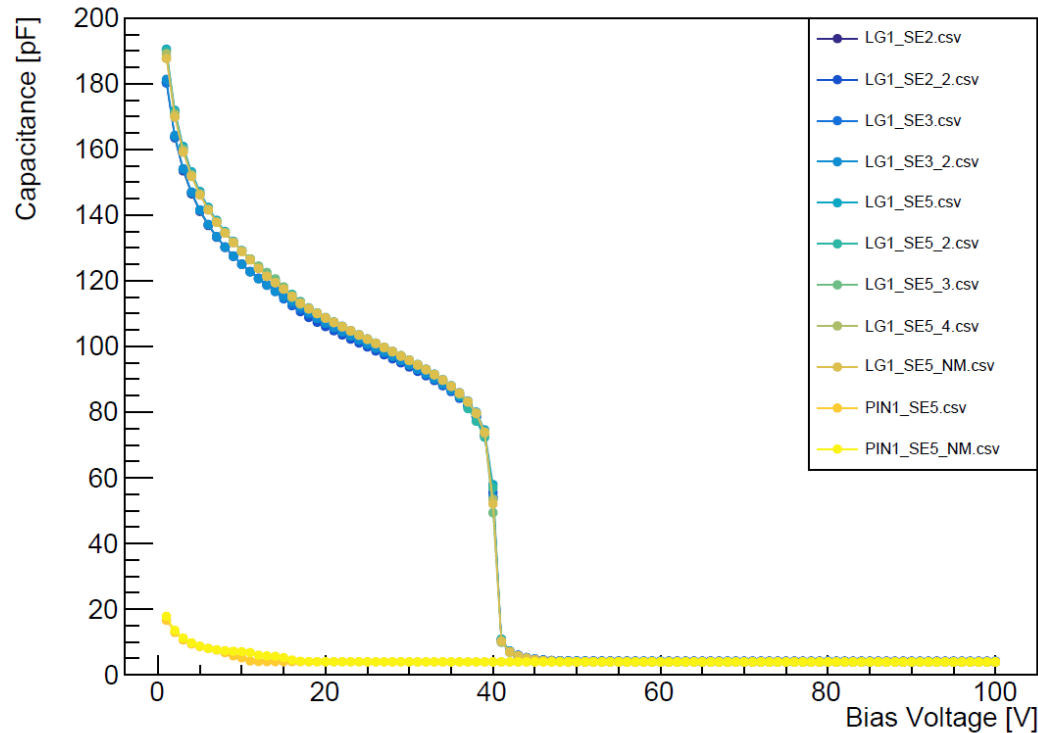
- Have tried to connect G.R to the pad

- I-V on 5x5 HPK sensors

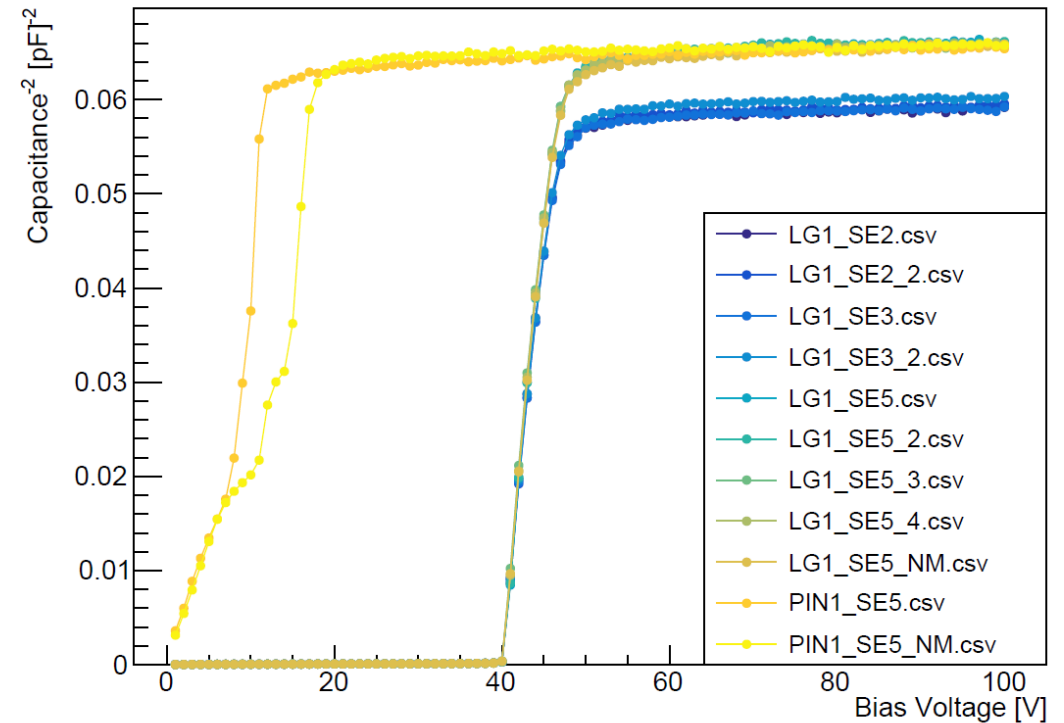
- not started yet

C-V results: HPK-SMPL-3.1-W8-Single-Set-P3

EXX28995-WNo8_Single_Set-P3_C



EXX28995-WNo8_Single_Set-P3_iC2

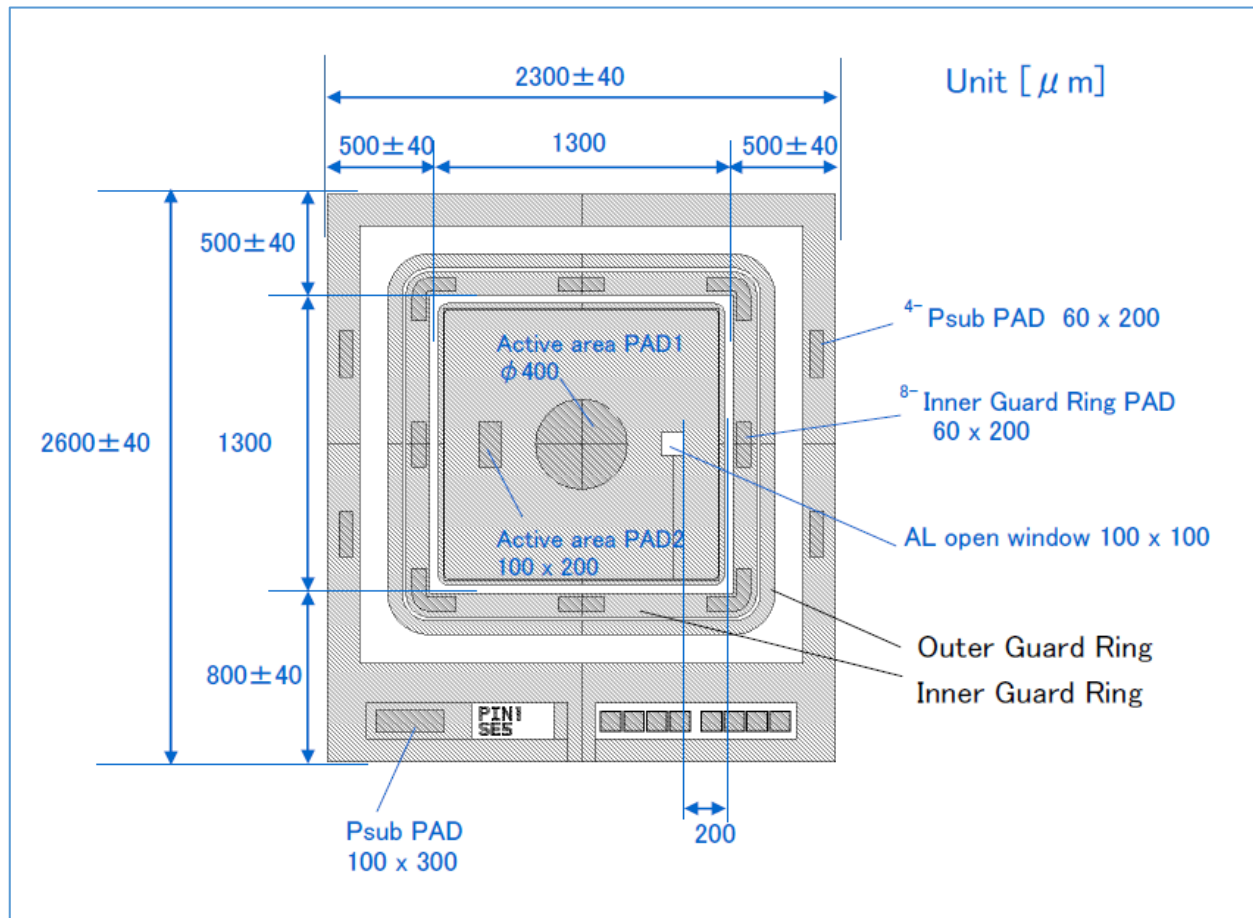


- Full depletion (~40V) for LGADs. PINs depleted before LGADs.
- Capacitance at full depletion: ~4pF

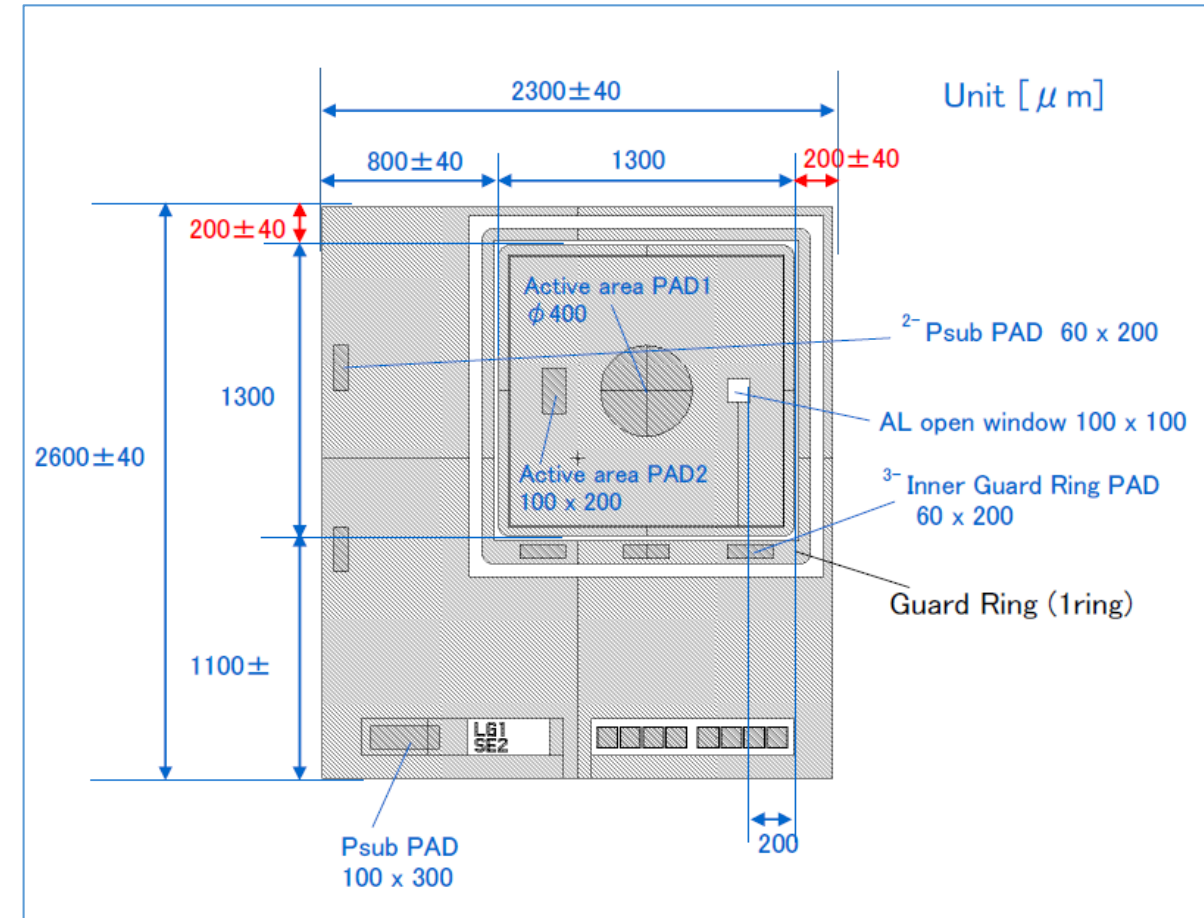
From past slide

Ref : Layout of HPK single sensors

PIN(LG)1_SE5

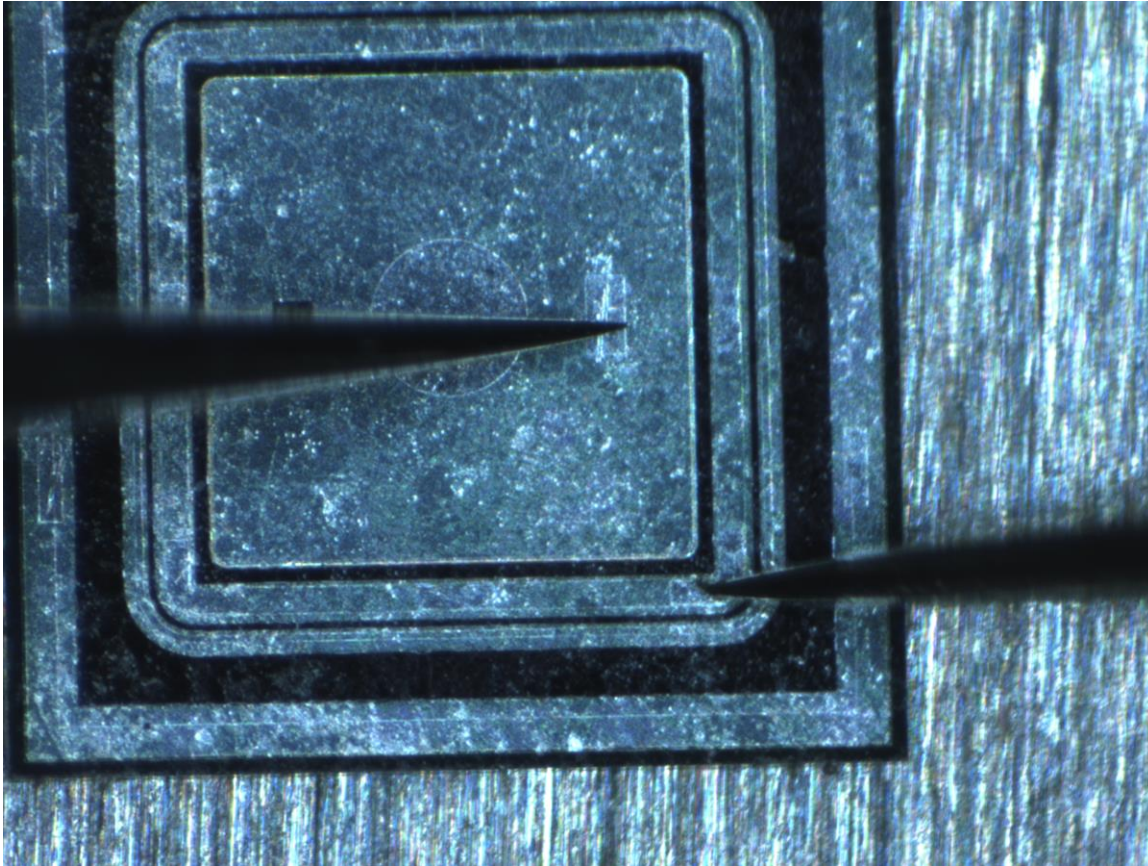


LG1_SE2

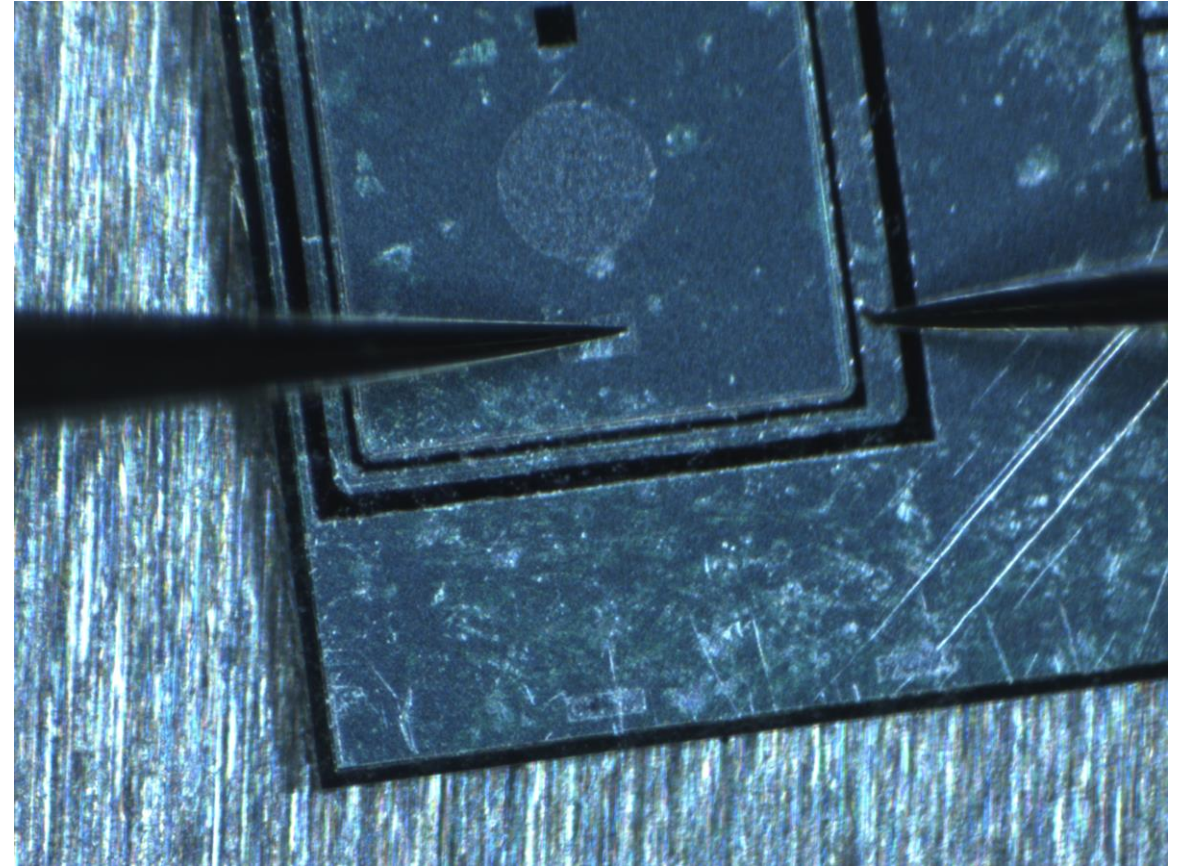


Touch down (pad + G.R.)

LG1_SE5



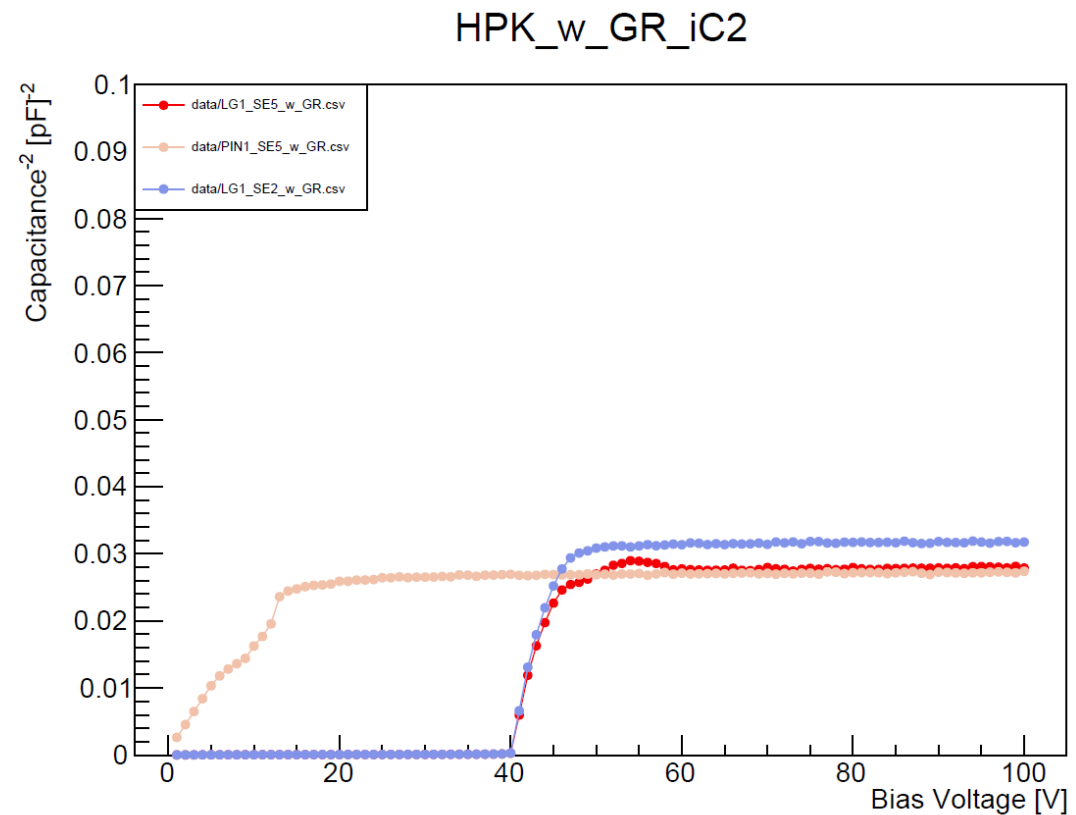
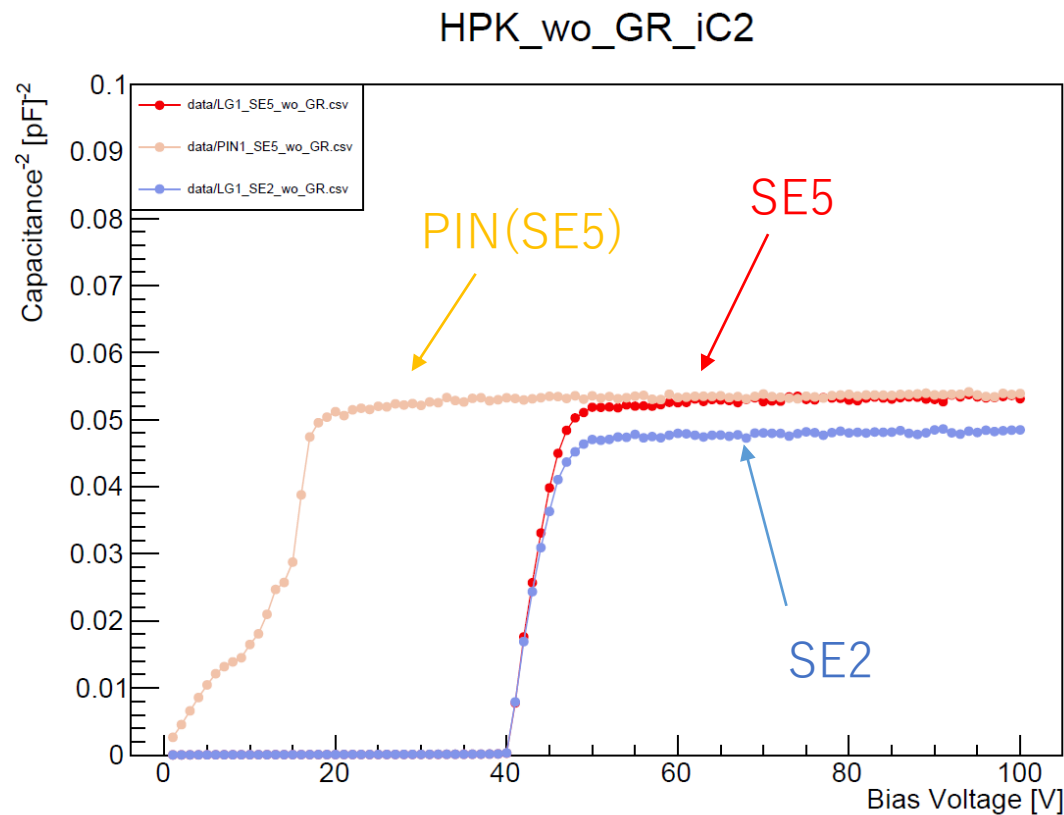
LG1_SE2



Sometimes, the capacitance changes when the tip touches down on G.R.

Comparison of Capacitance ($1/C^2$)

-- very preliminary , need to check and update more --



Roughly, the capacitance changes from $\sim 4\text{pF}(\text{wo}) \rightarrow \sim 6\text{pF}(\text{wGR})$

Comments

- Try to have C-V measurement with G.R. for the rest of single sensors in Wo.8 (HPK) -- today
- Then, setup the probe card for 5x5 HPK sensors,
==> just repeat the I-V measurements once the setup and/or simple confirmation has been done.