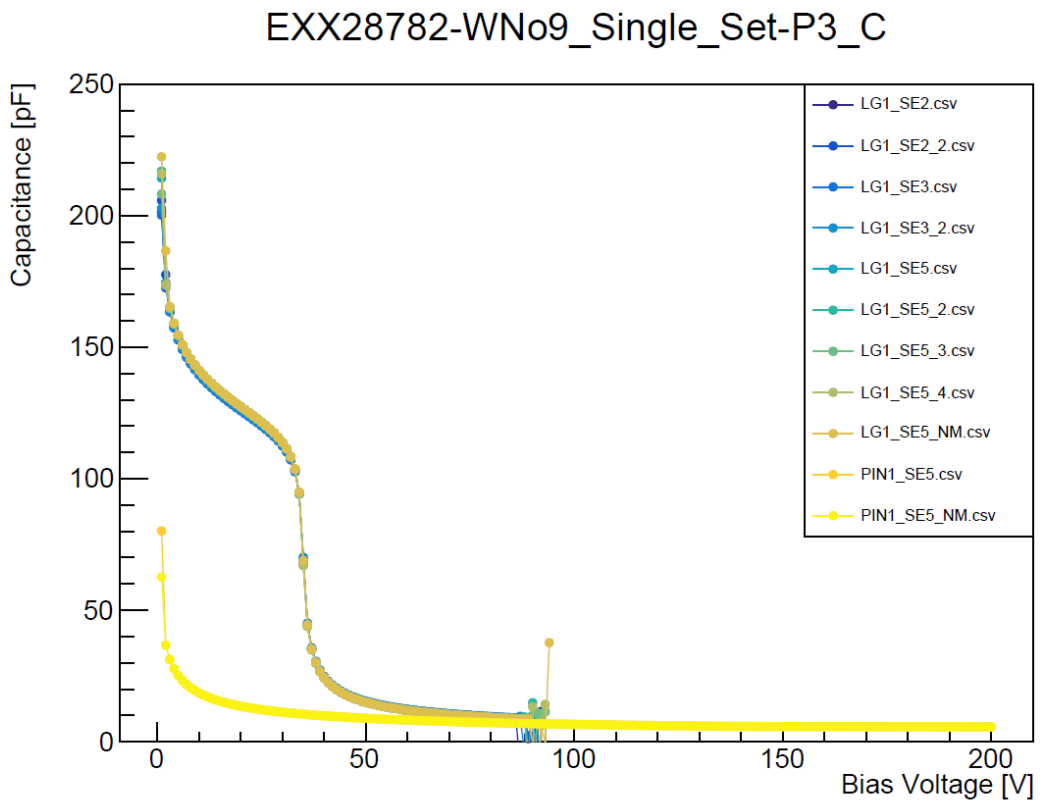
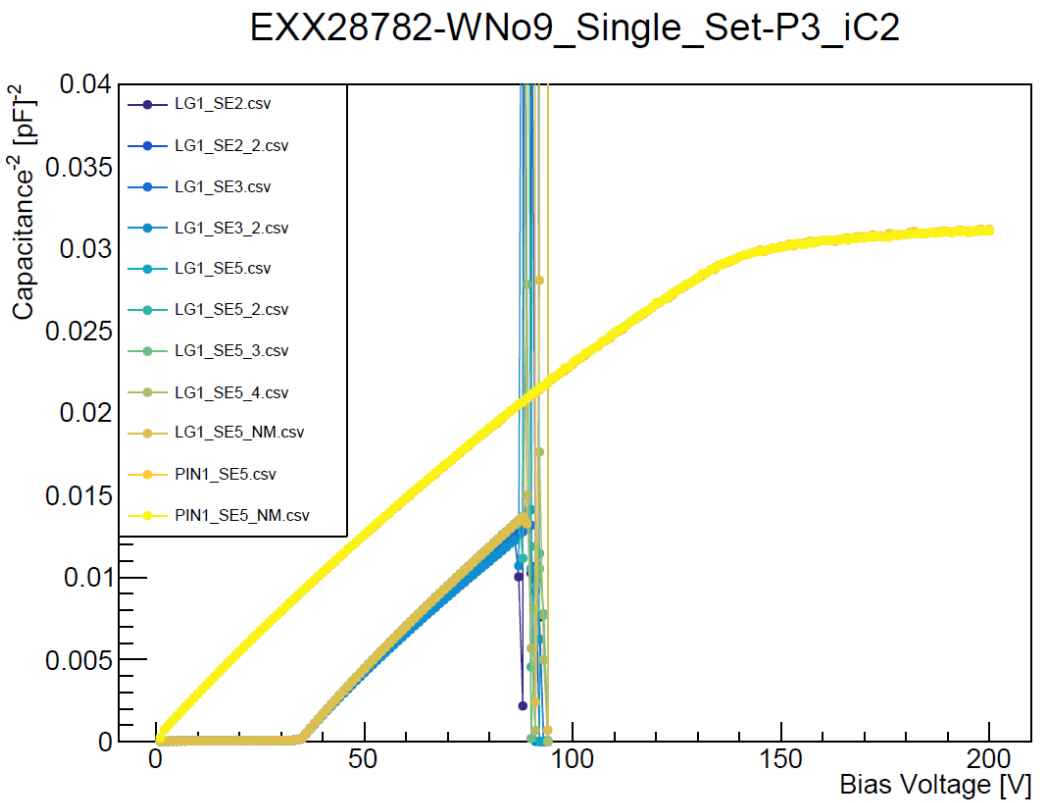
Continue of the C-V measurement

01/31/2019

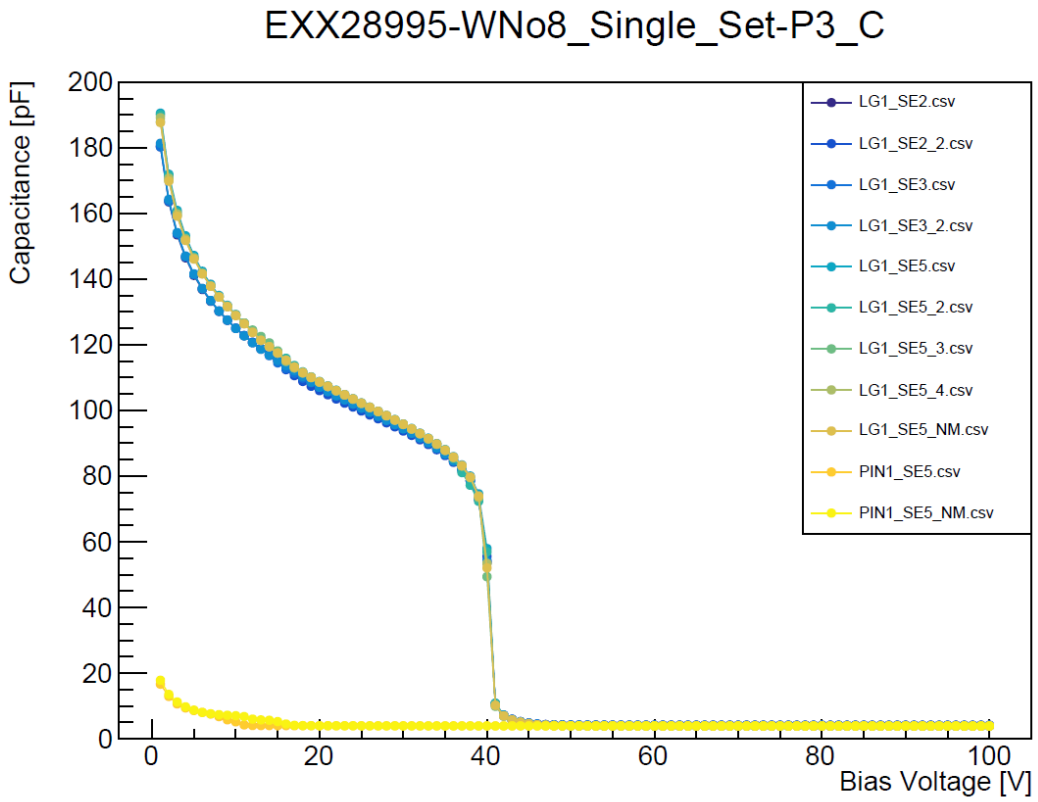
C-V results: HPK-SMPL-1-W9-Single-Set-P3

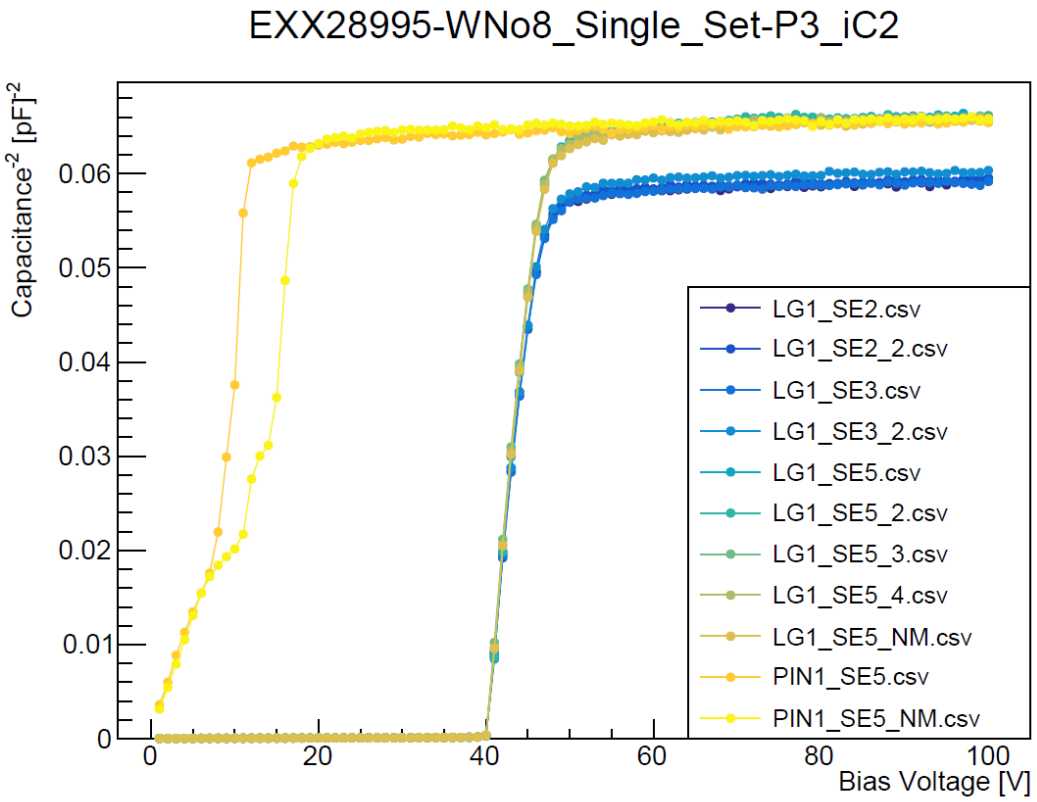




- LGADs breakdown (~80V) before full depletion.
- PINs depleted at ~150V.

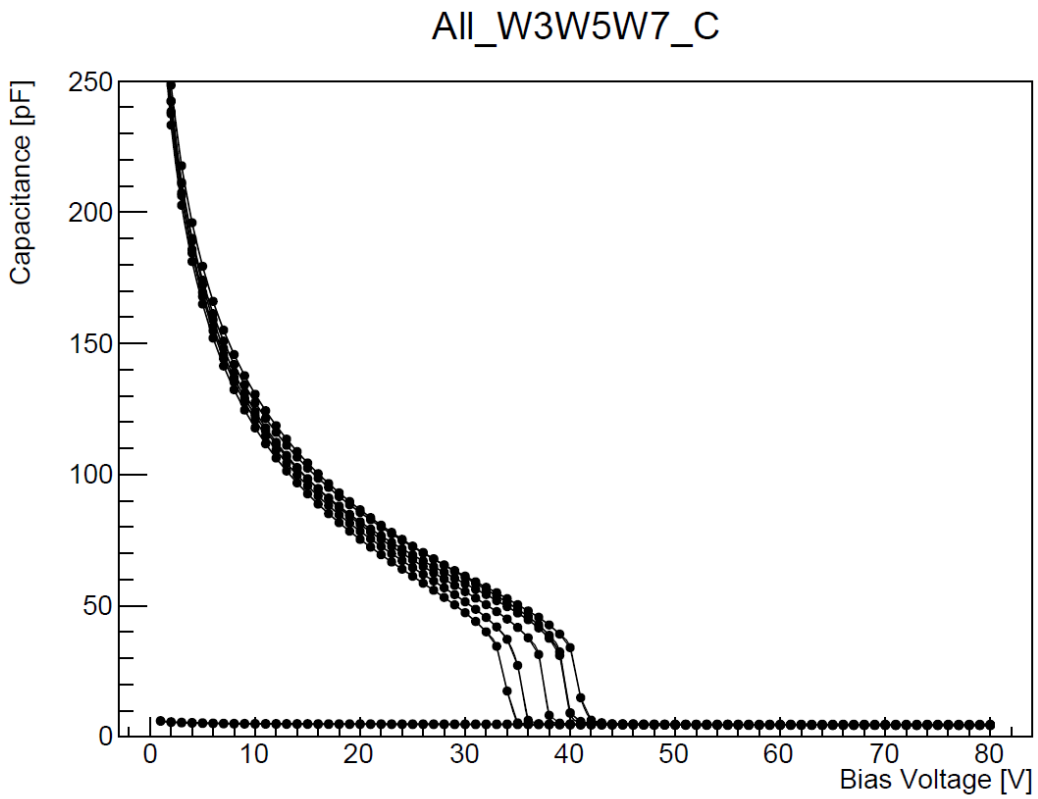
C-V results: HPK-SMPL-3.1-W8-Single-Set-P3

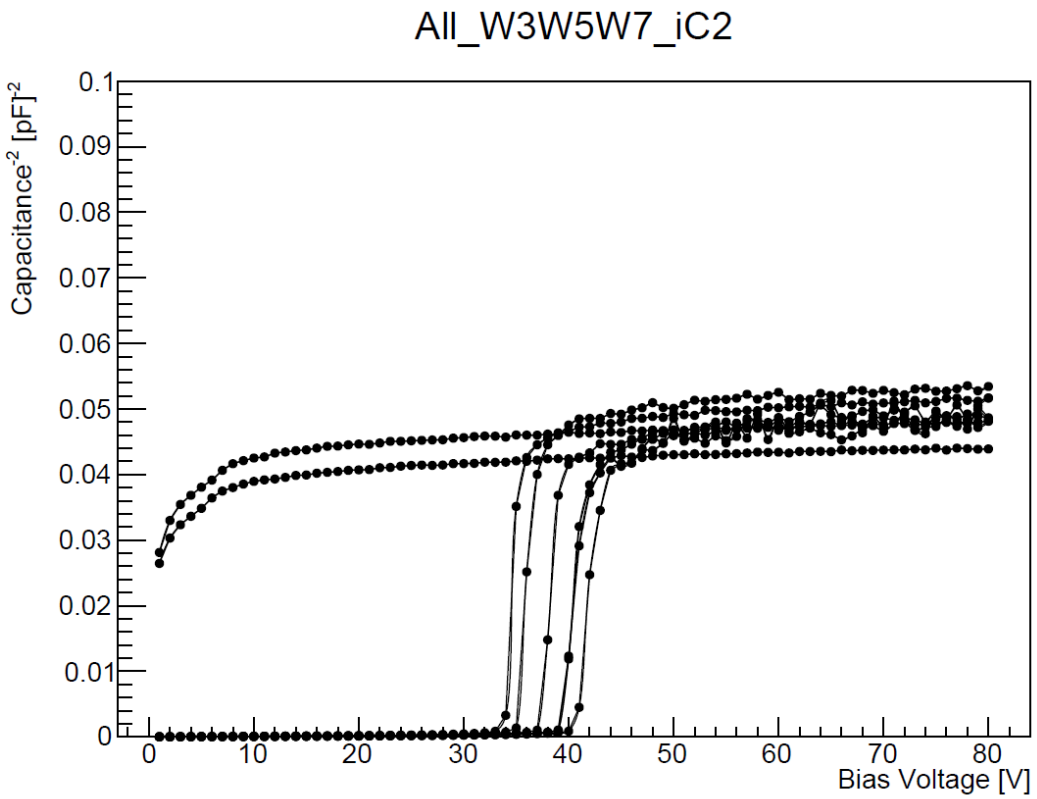




- Full depletion (~60V) for LGADs. PINs depleted before LGADs.
- Capacitance at full depletion: ~4μF

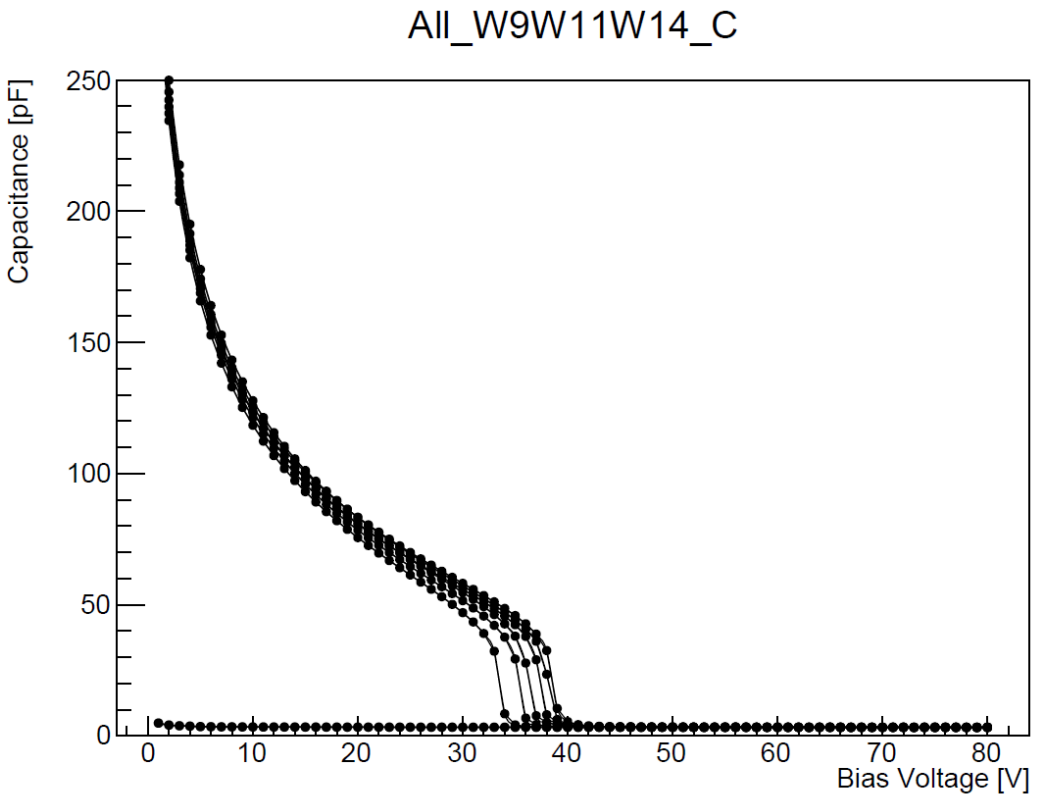
C-V results: CNM-Single, W3/W5/W7/W3$_{PIN}$/W7$_{PIN}$

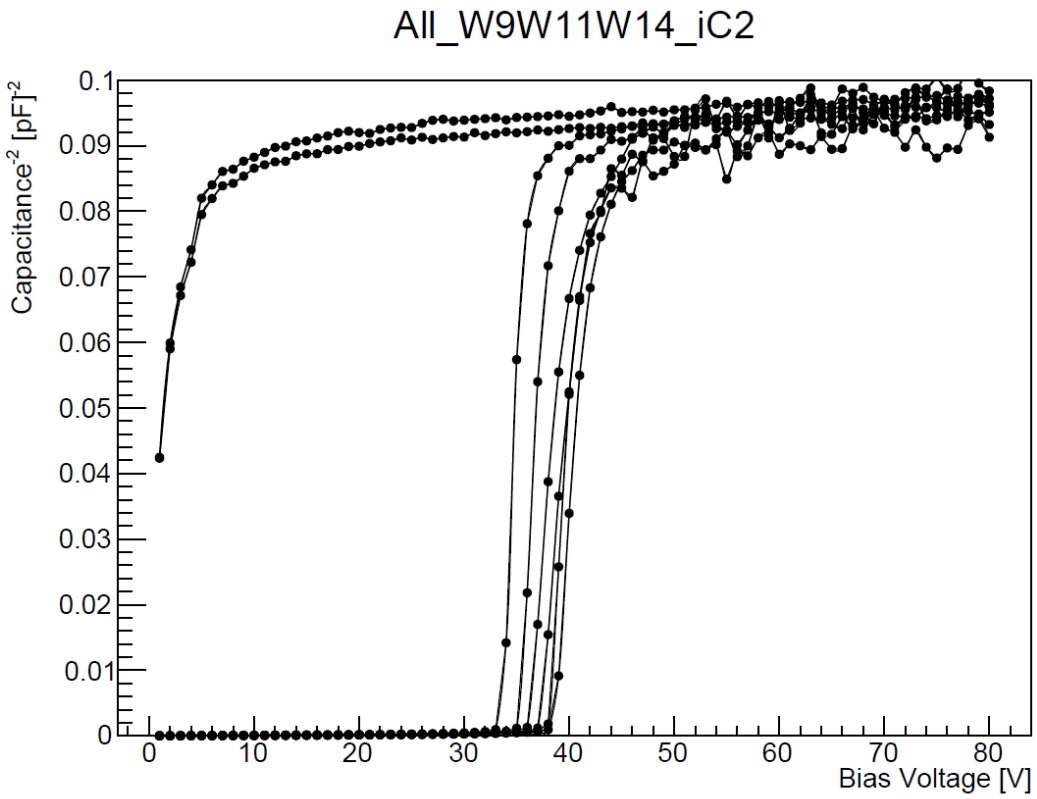




- Full depletion (~40V) for LGADs. PINs depleted before LGADs.
- Capacitance at full depletion: ~4.5μF

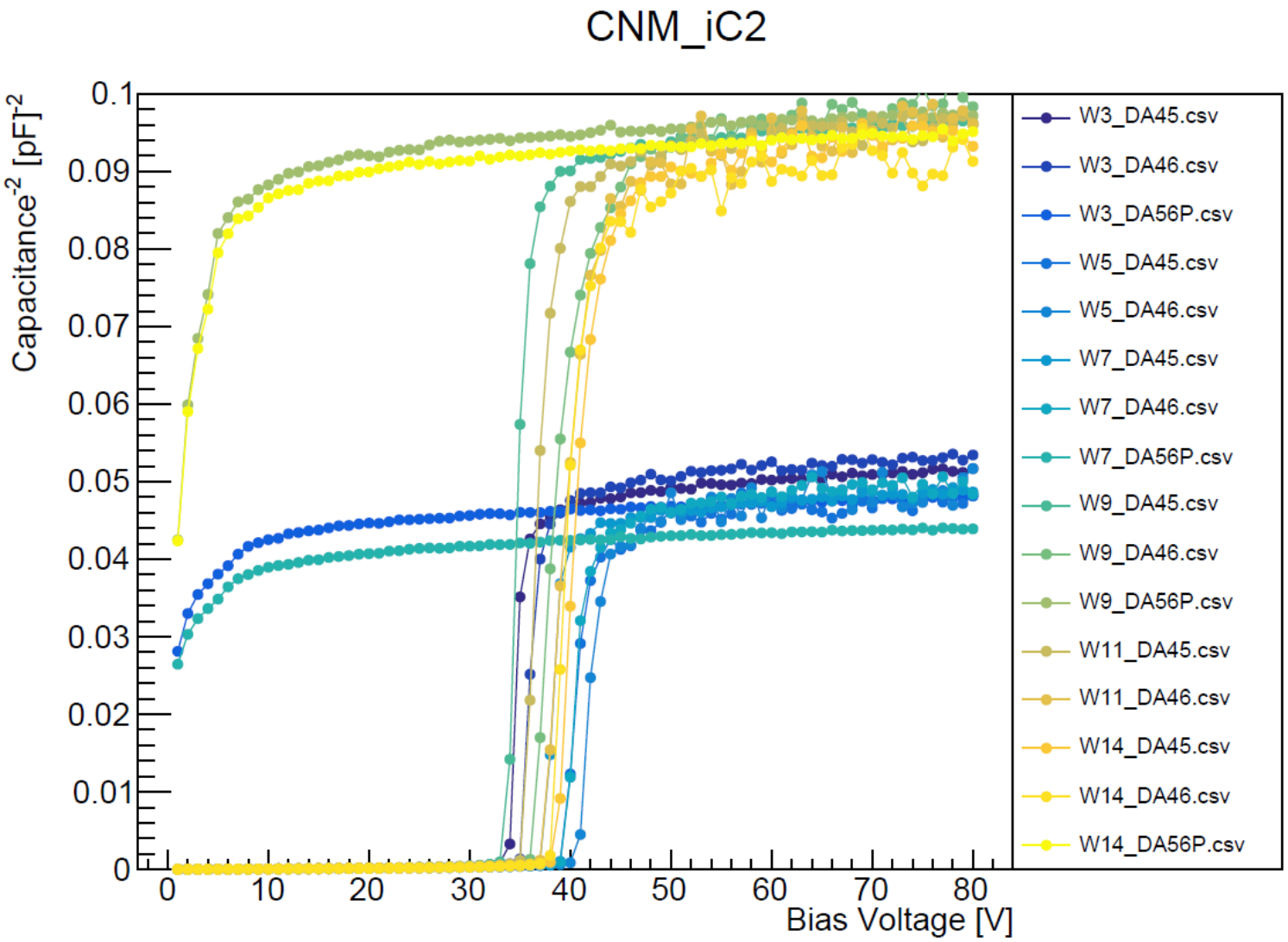
C-V results: CNM-Single, W9/W11/W14/W9$_{PIN}$/W14$_{PIN}$





- Full depletion (~40V) for LGADs. PINs depleted before LGADs.
- Capacitance at full depletion: ~3.2μF

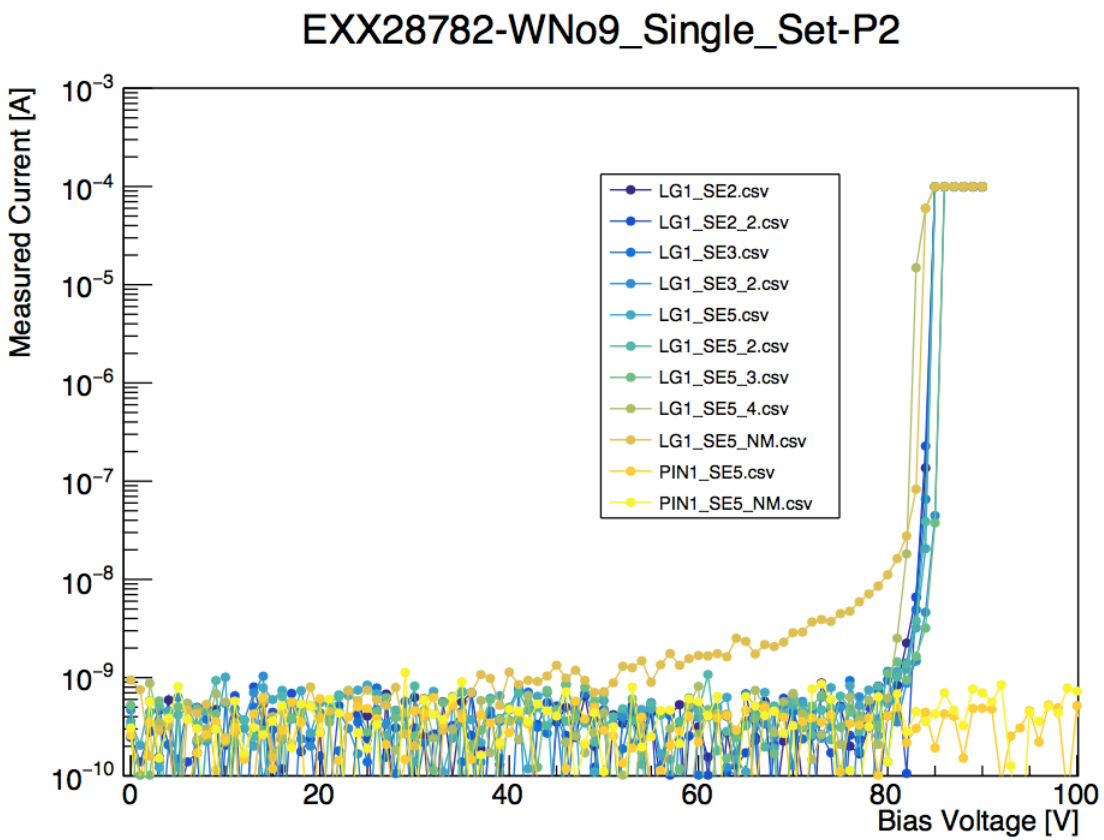
Summary plot



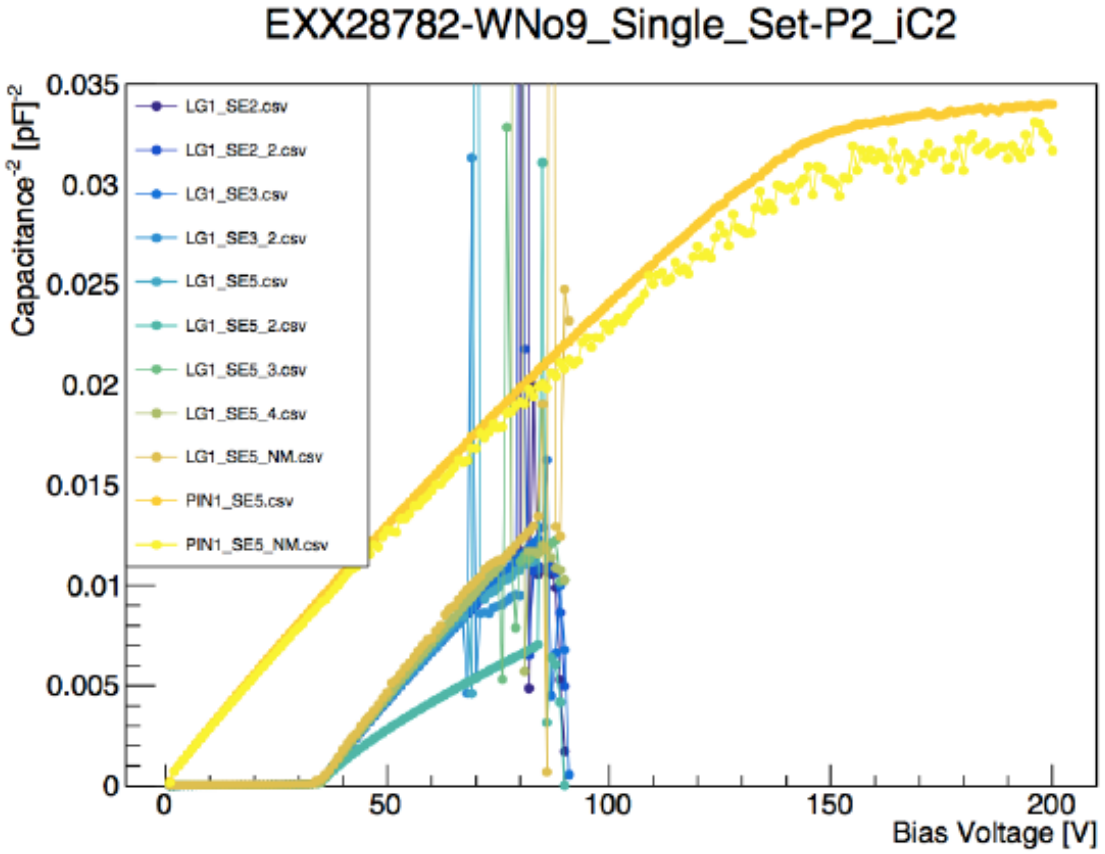
Active thickness : 35 μm (W3/W5/W7), 50 μm (W9/W11/W14)

Reference： Comparison of I-V & C-V on HPK single sensors

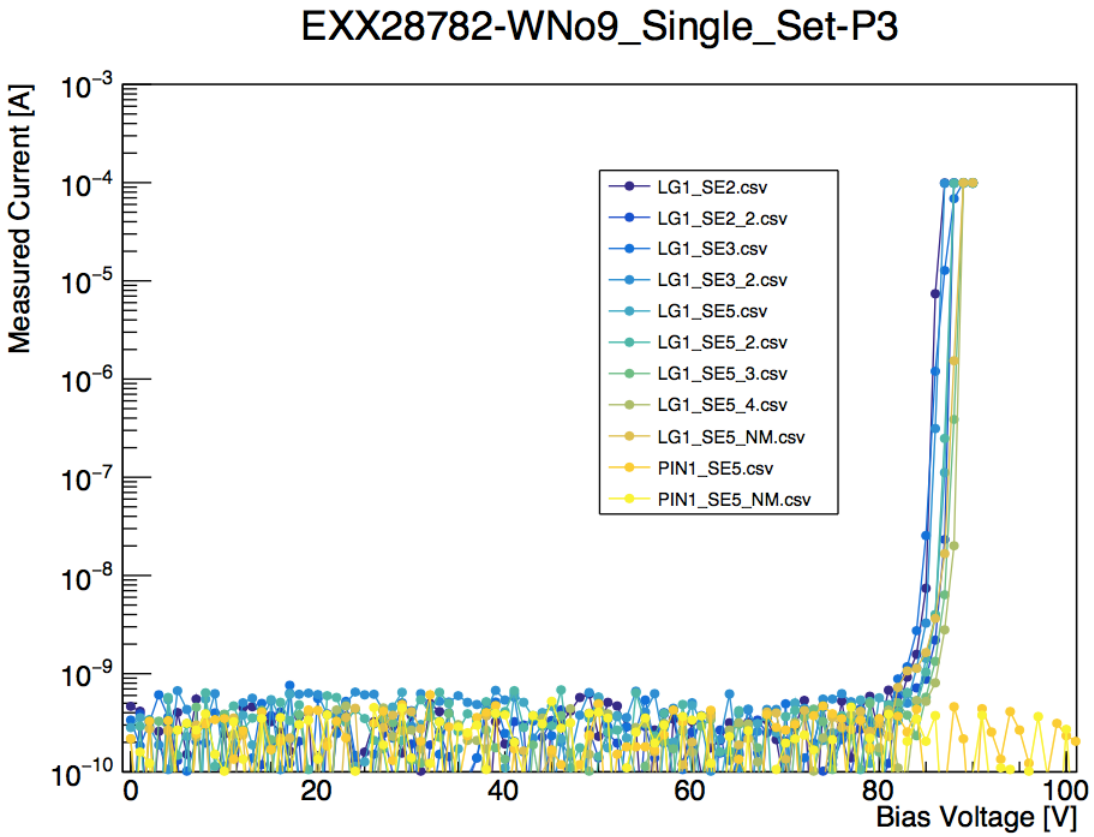
HPK-SMPL-1-W9-Single-Set-P2 : IV & CV

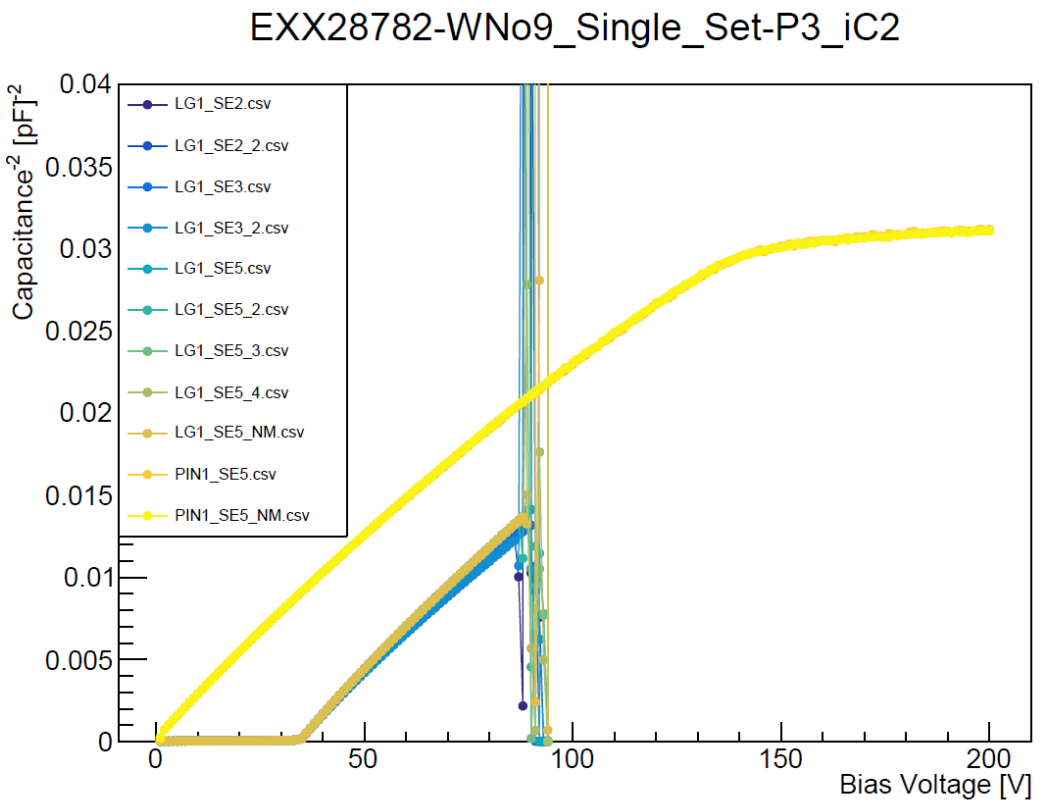


$1/C^2$

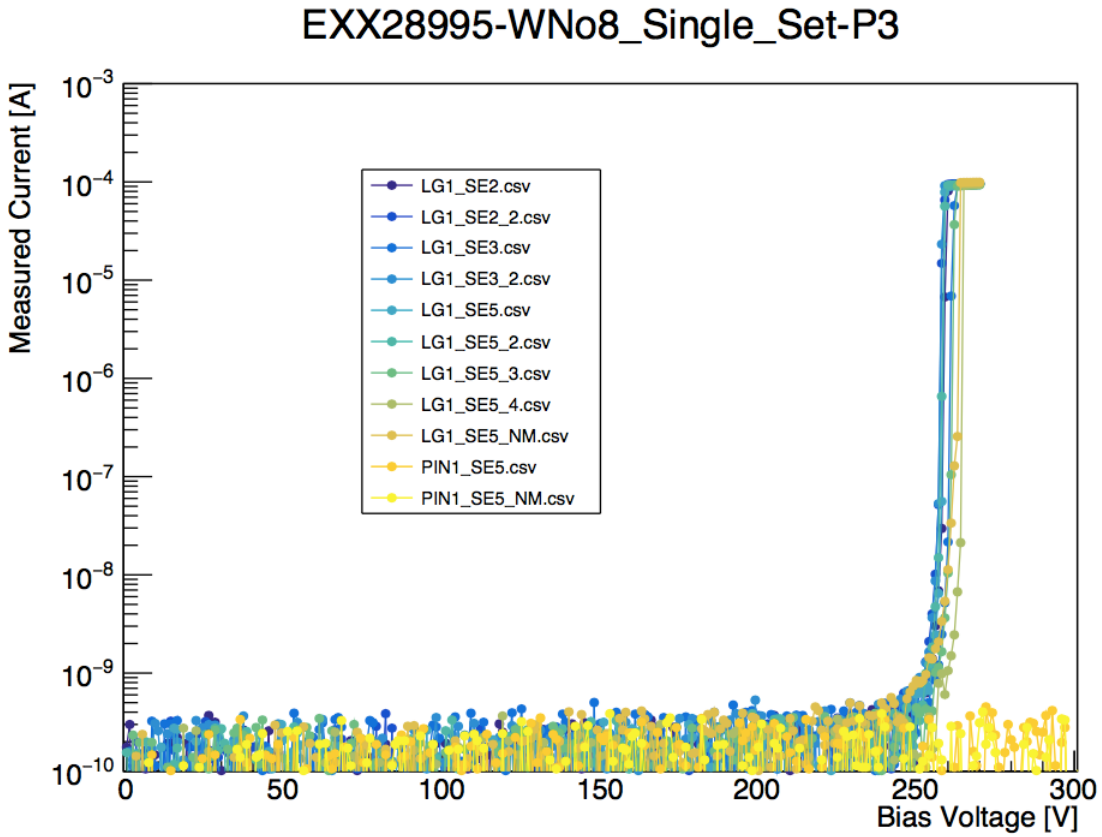


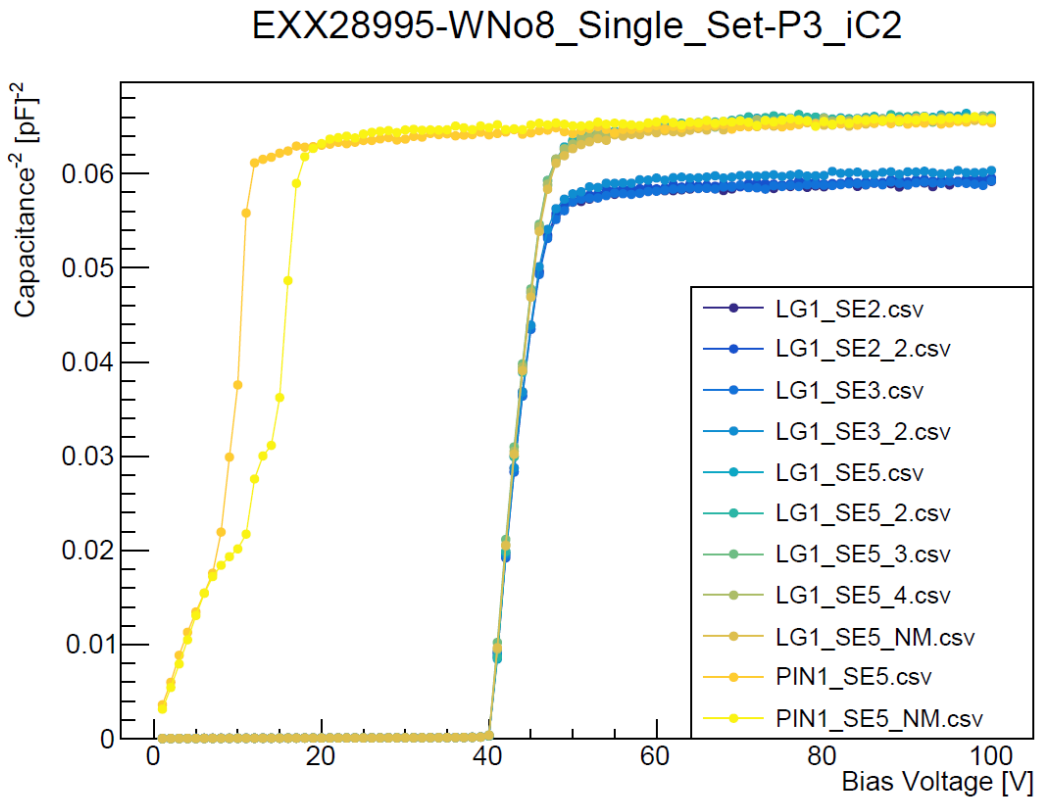
HPK-SMPL-1-W9-Single-Set-P3 : IV & CV



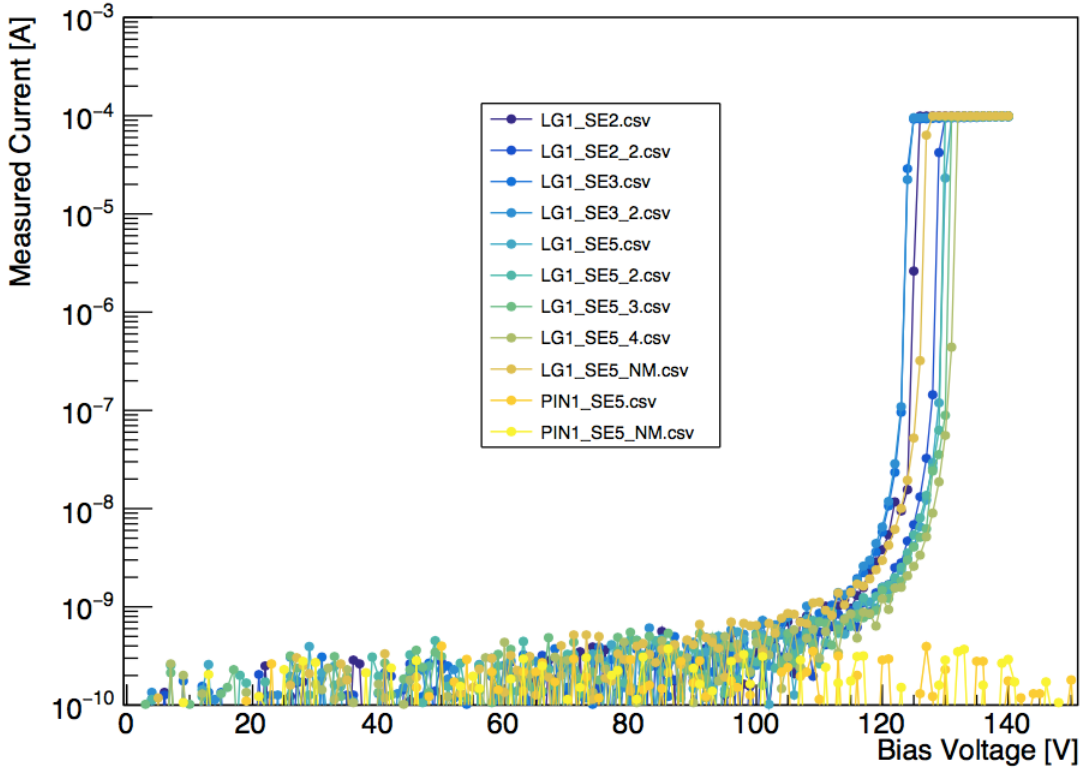


HPK-SMPL-3.1-W8-Single-Set-P3 : IV & CV

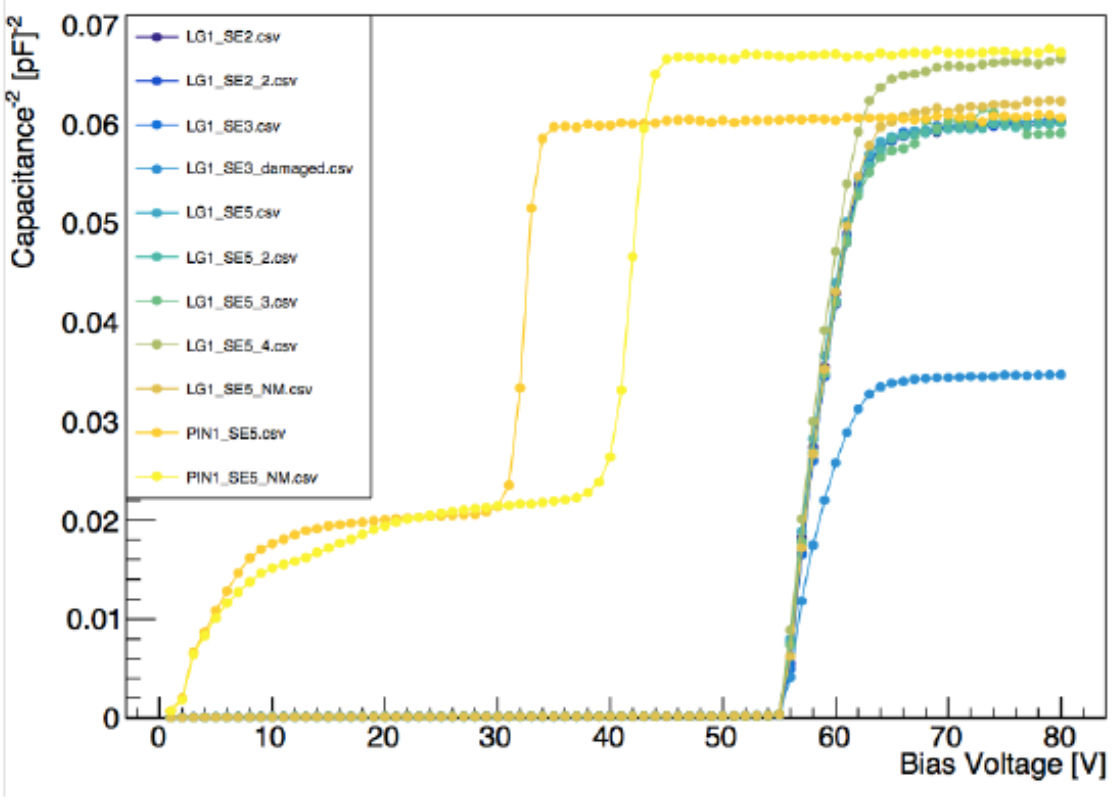




HPK-SMPL-3.2-W18-Single-Set-P6 : IV & CV



$1/C^2$



Comment

・ For the new coming sensors , we can continue the measurement after the new year holiday

・We have contact with SCIPP for the 15x15 probe card.