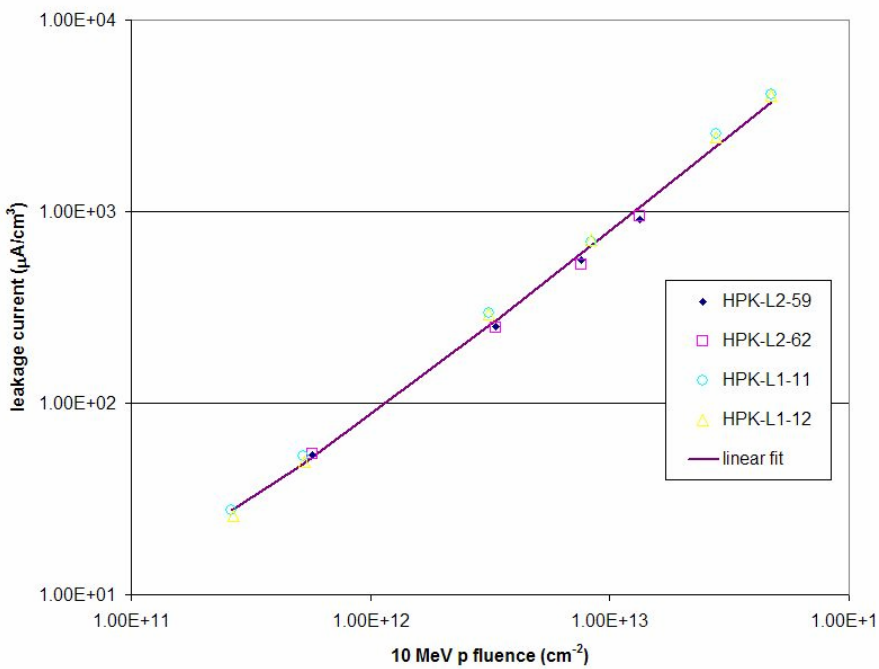
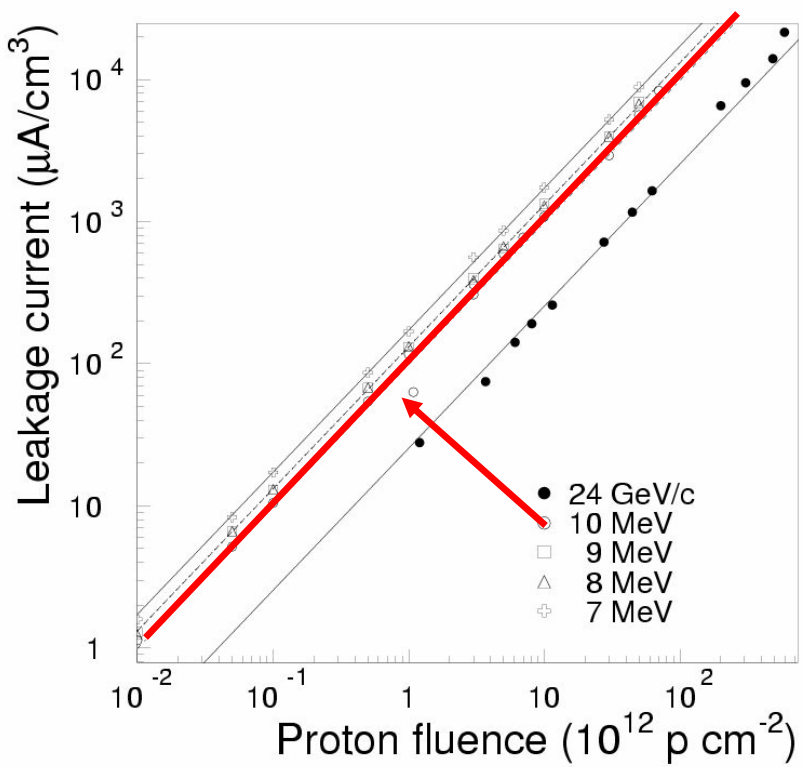
Irradiation status
T. Bolton-KSU
4-17-03

- Activation analysis on Cu foils verifies direct flux.
  - Write up available.
  - One more check at FNAL in process.
- Comparisons of L1,L2 sensors to Montreal 10 MeV p data.
- First look at L2 Test Structure diodes.

Comparison of KSU leakage current vs Proton Fluence to Bechevet et al (ROSE Collaboration)





- KSU: $\alpha_P=(7.9\pm0.2)\times10^{-17}$ A/cm
- L1,L2 sensors, annealed for 80 min. at 60C.

- ROSE: $\alpha_P=9.9\times10^{-17}$ A/cm
- 0.25 cm^2 diodes annealed for 4 min. at 80C.

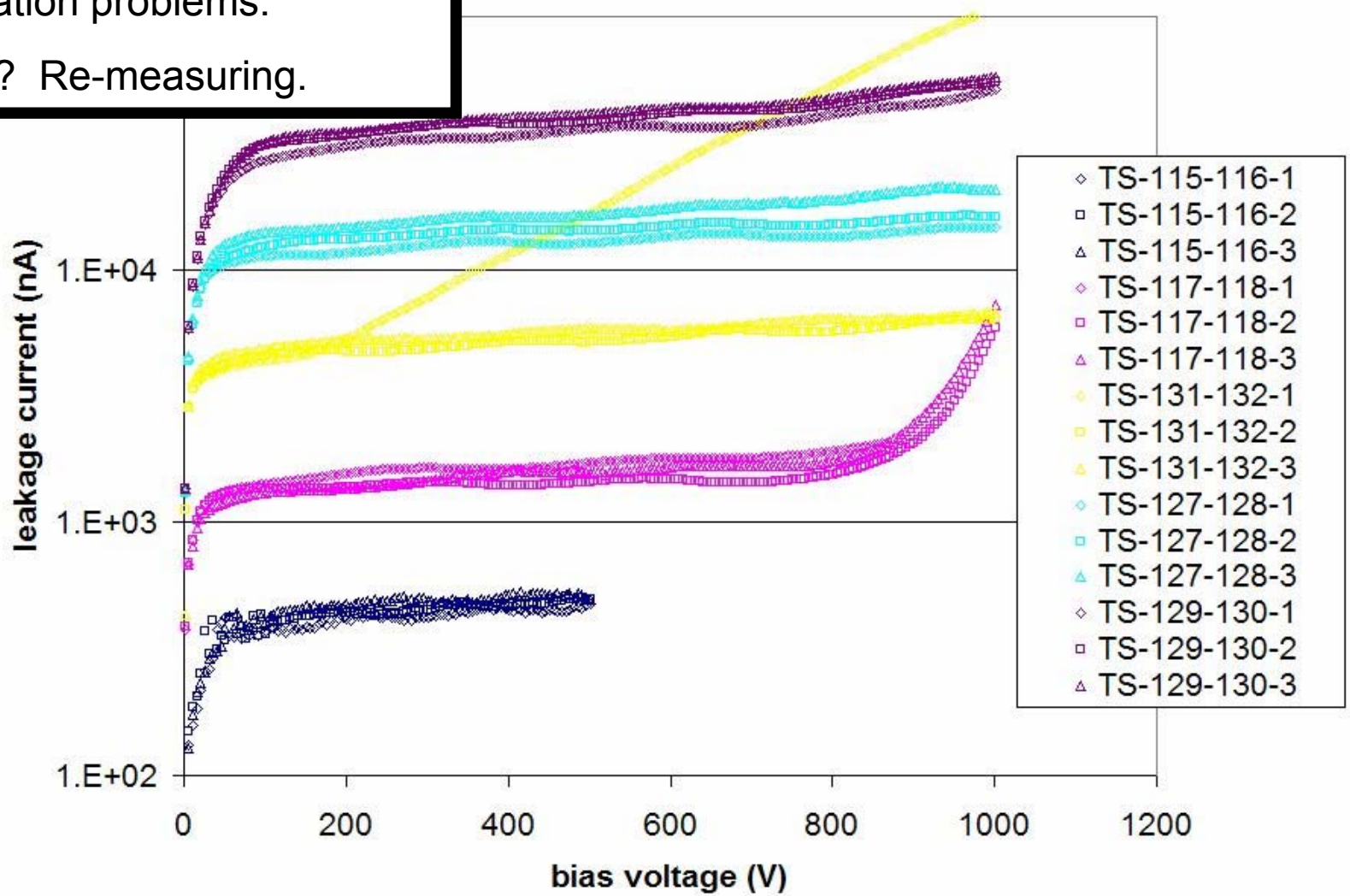
Test Structure Irradiation

sensor	diode	counts	raw fluence	acc-corrected	Temp	correction to 20C
TS-115-116	1	6.00E+05	1.19E+12	1.32E+12	5	3.825245
TS-115-116	2	6.00E+05	1.19E+12	1.32E+12	5	3.825245
TS-115-116	3	6.00E+05	1.19E+12	1.32E+12	5	3.825245
TS-117-118	1	1.80E+06	3.57E+12	3.96E+12	5	3.825245
TS-117-118	2	1.80E+06	3.57E+12	3.96E+12	5	3.825245
TS-117-118	3	1.80E+06	3.57E+12	3.96E+12	5	3.825245
TS-131-132	1	6.00E+06	1.19E+13	1.32E+13	1	5.605256
TS-131-132	2	6.00E+06	1.19E+13	1.32E+13	1	5.605256
TS-131-132	3	6.00E+06	1.19E+13	1.32E+13	1	5.605256
TS-127-128	1	1.80E+07	3.57E+13	3.96E+13	1	5.605256
TS-127-128	2	1.80E+07	3.57E+13	3.96E+13	1	5.605256
TS-127-128	3	1.80E+07	3.57E+13	3.96E+13	1	5.605256
TS-129-130	1	6.00E+07	1.19E+14	1.32E+14	1	5.605256
TS-129-130	2	6.00E+07	1.19E+14	1.32E+14	1	5.605256
TS-129-130	3	6.00E+07	1.19E+14	1.32E+14	1	5.605256

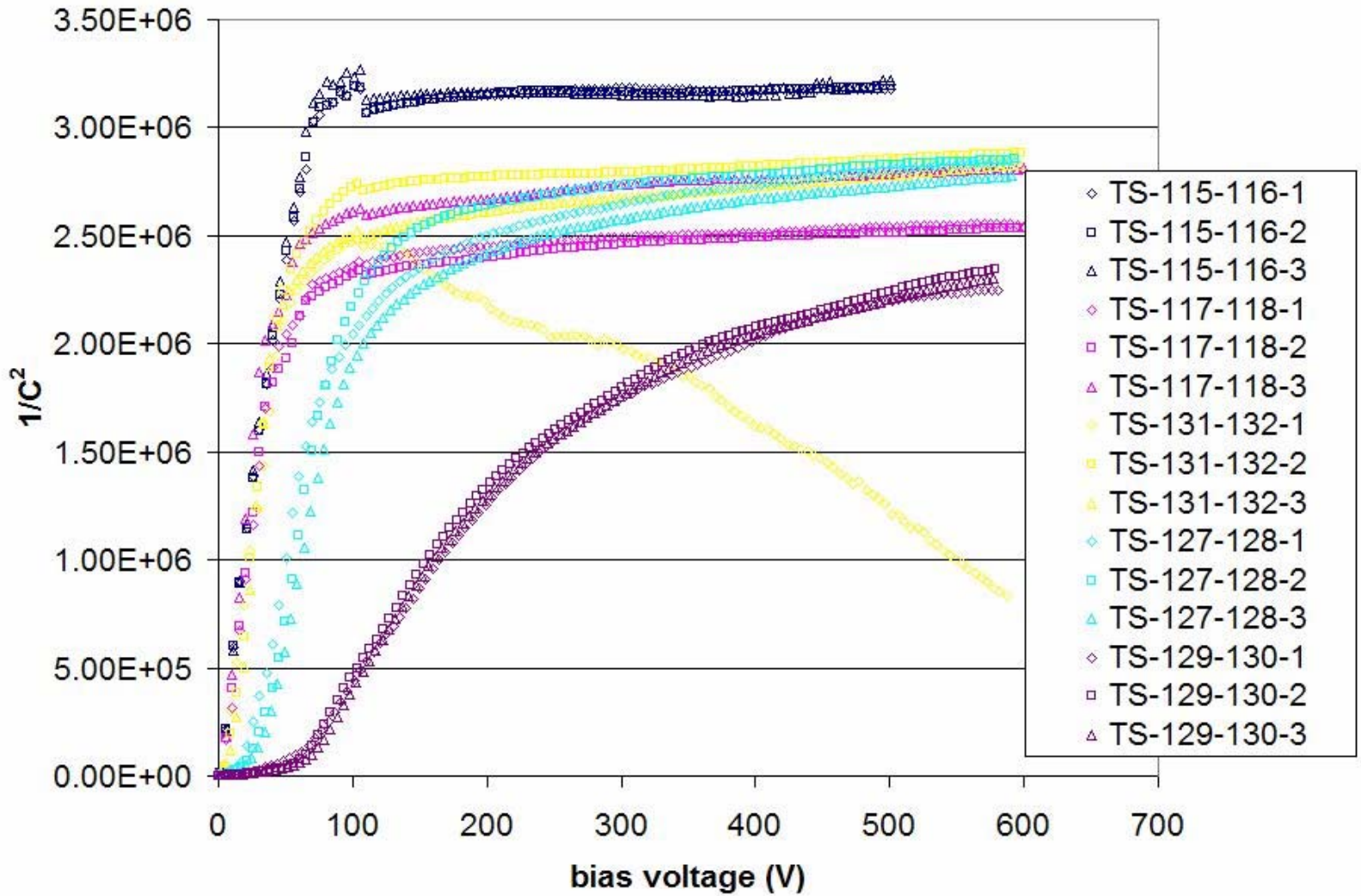
Problems with condensation on cold chuck, re-measuring.

Test Structure Data: I_L

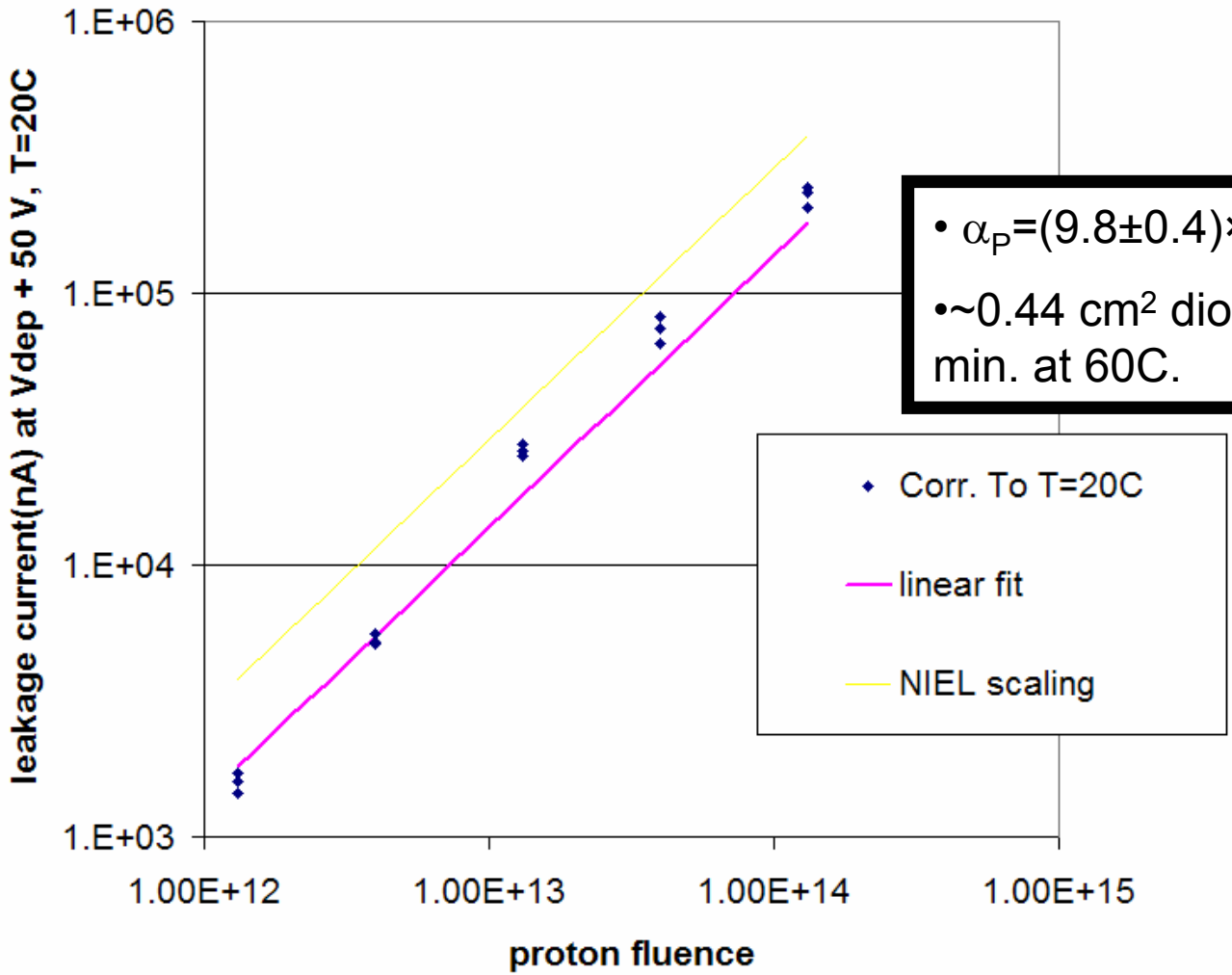
- Note highest three points had condensation problems.
- IL lower? Re-measuring.

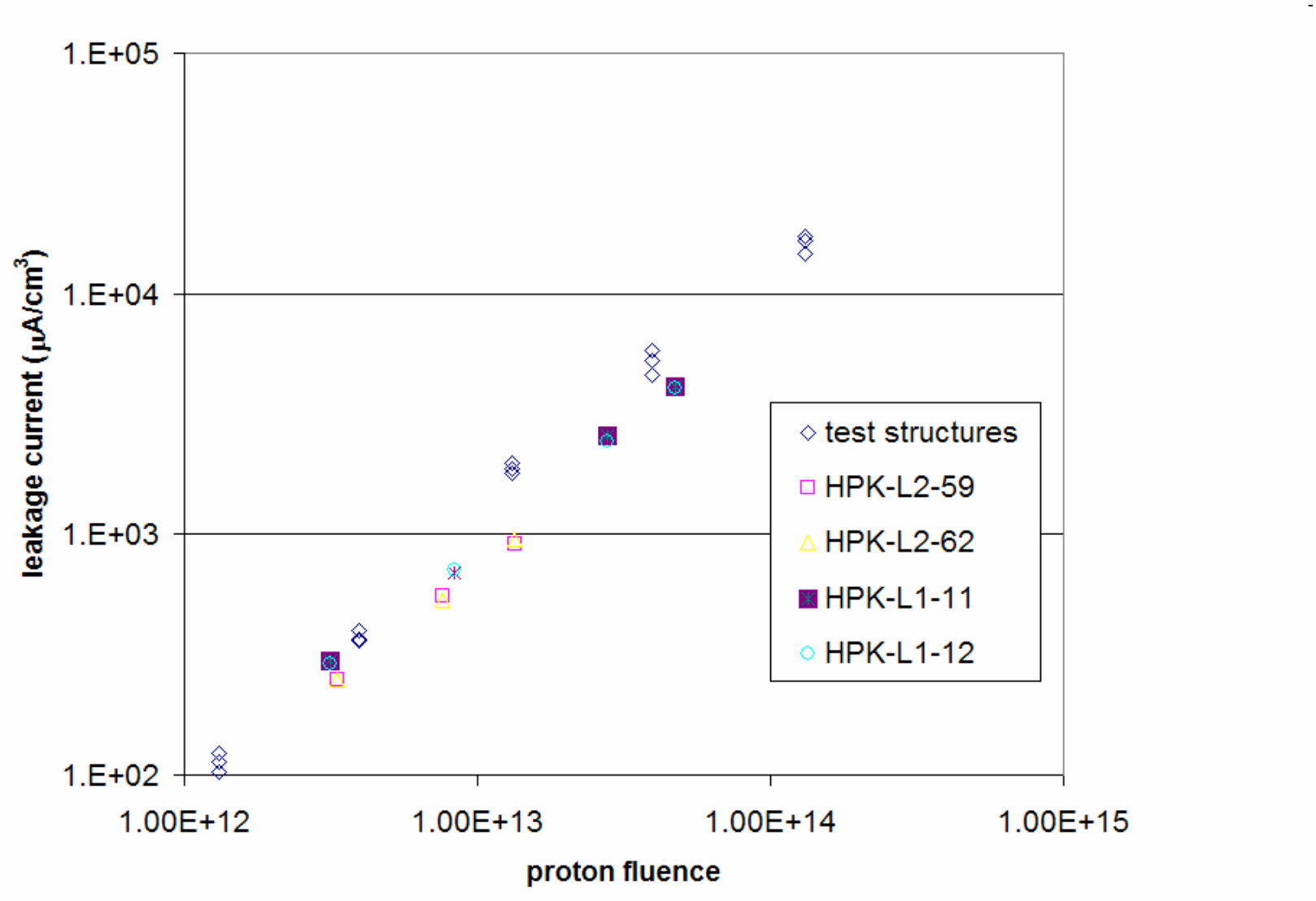


Test Structures: $1/C^2$



Test Structure I_L vs Φ



- α_P=(9.8±0.4)×10^{-17} A/cm
- ~0.44 cm^2 diodes annealed for 80 min. at 60C.

Comparison of TS and sensors