

Bari Update

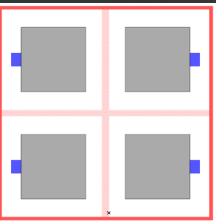
F.GARGANO

- ▶ FBK
- ▶ Wrapping
- ▶ First results with equipped tile

Technology: NUV-HD-RH-HFF-LowCT



3x3 mm² (Die size ~ 3.15x3.15mm²)
 Cell size: 33% 40 µm – 33% 25 µm – 33% 15 µm

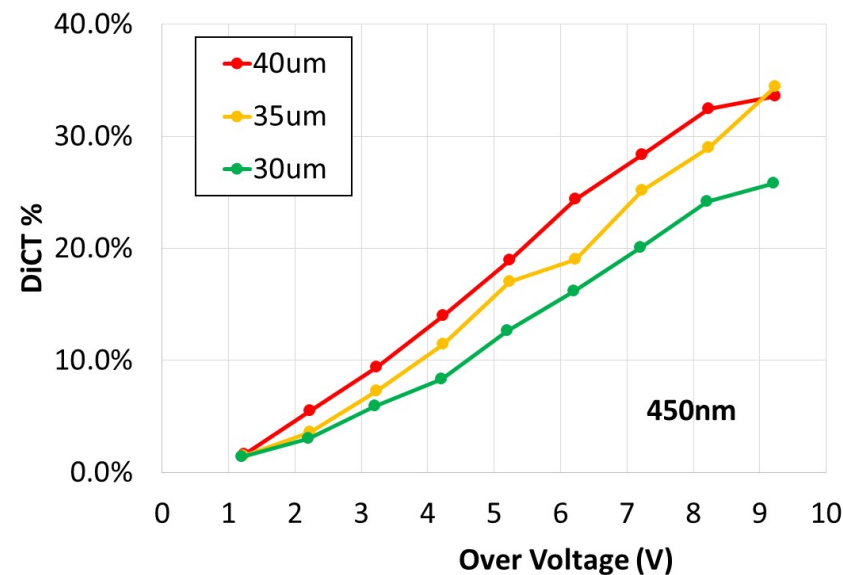
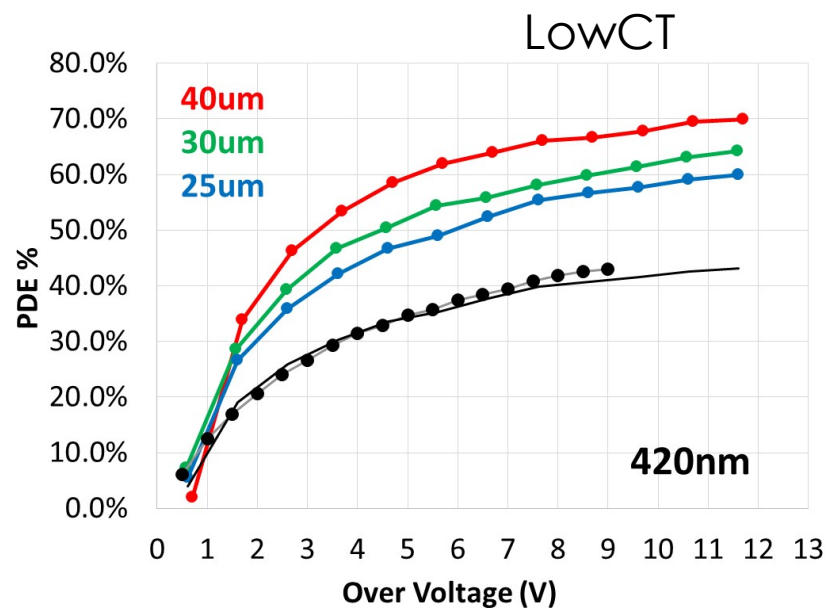
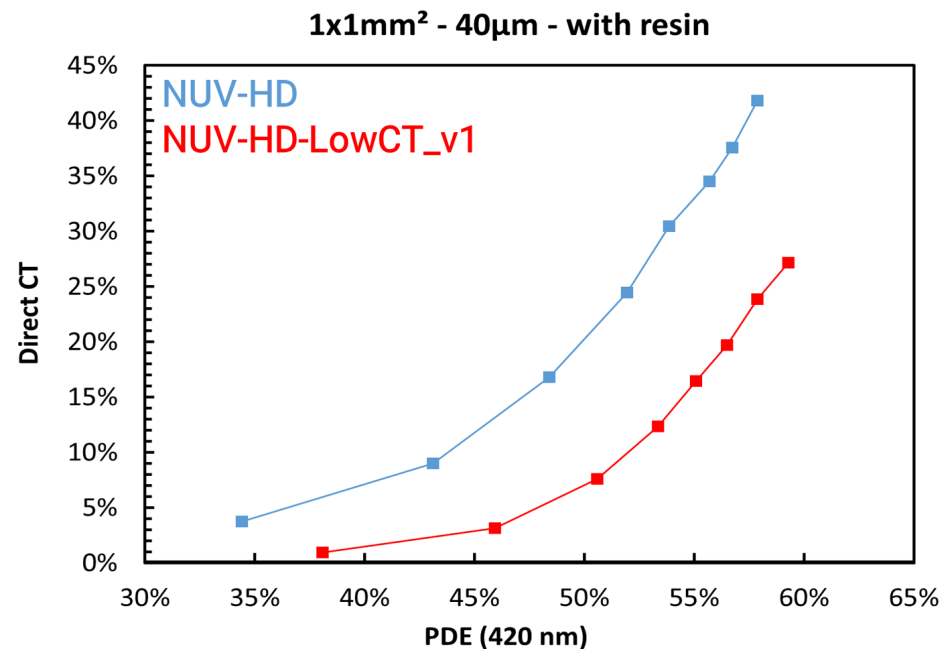
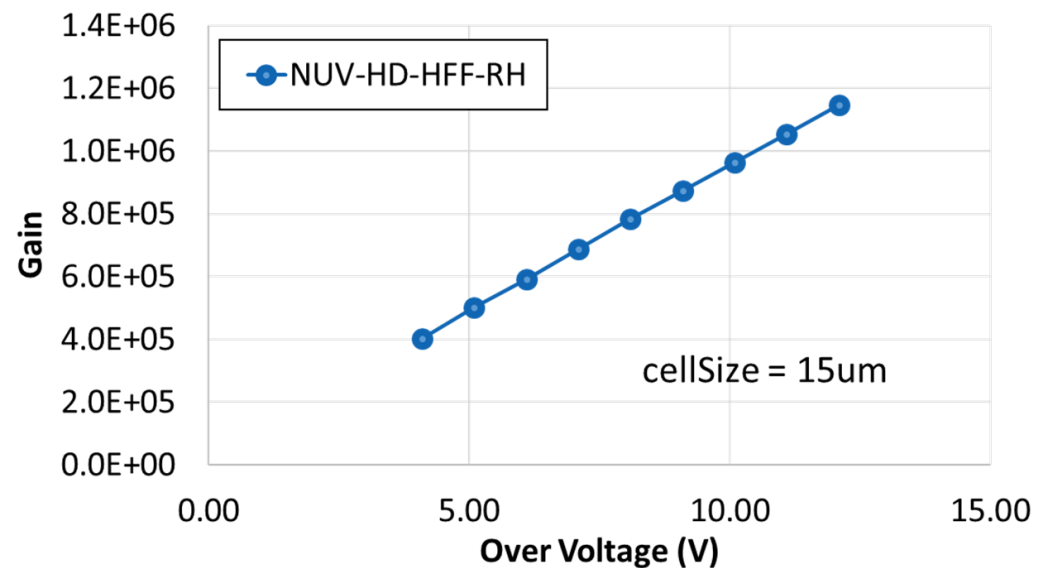


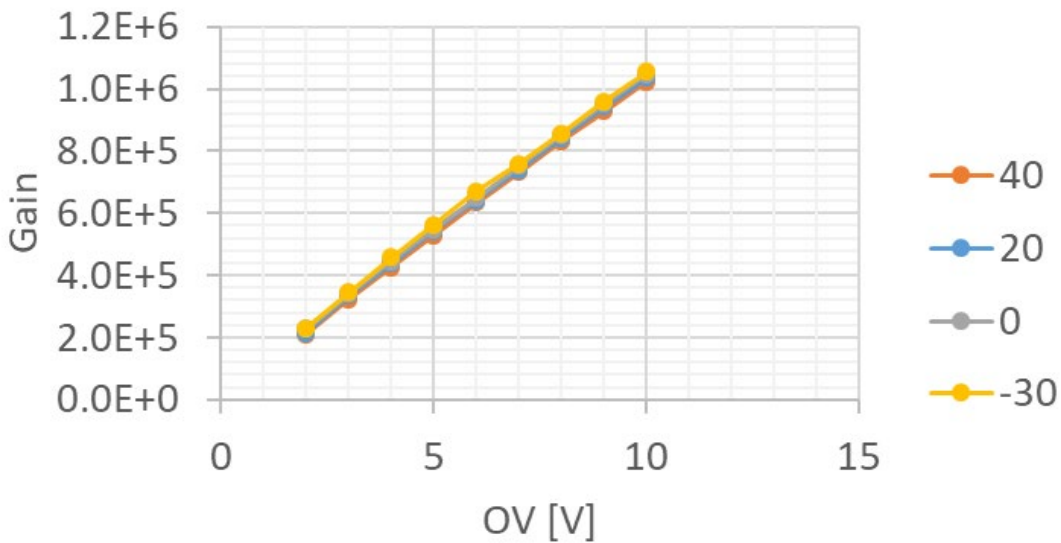
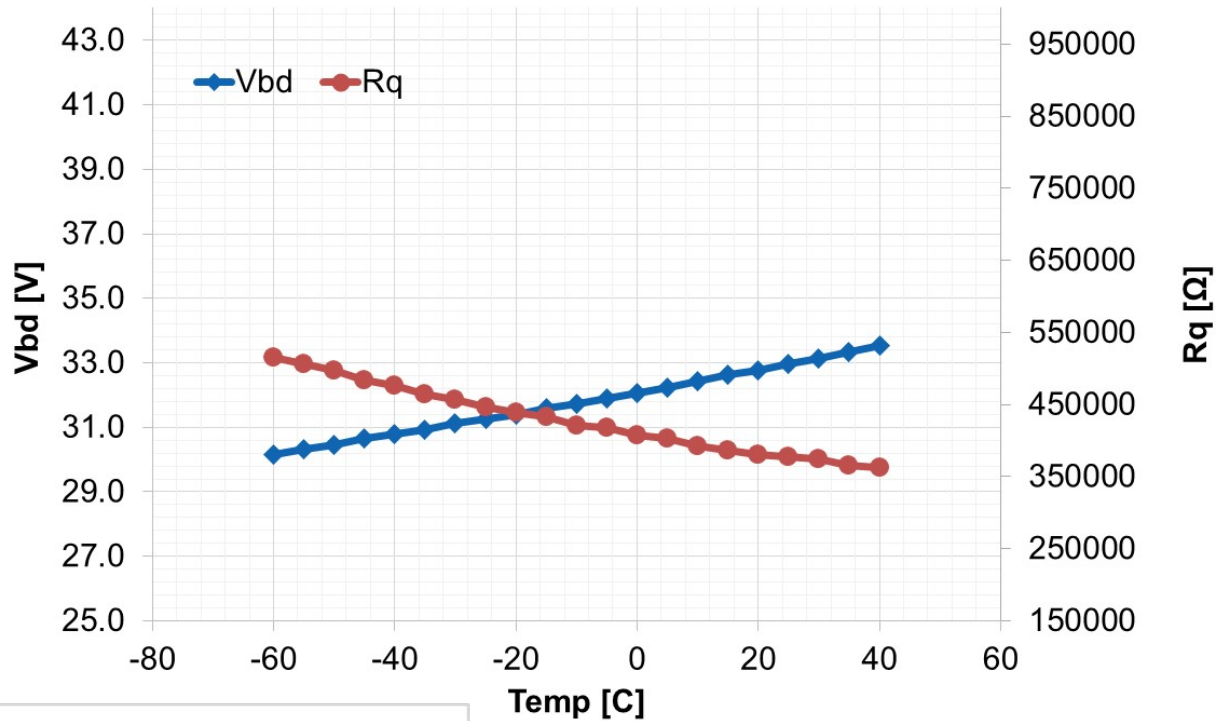
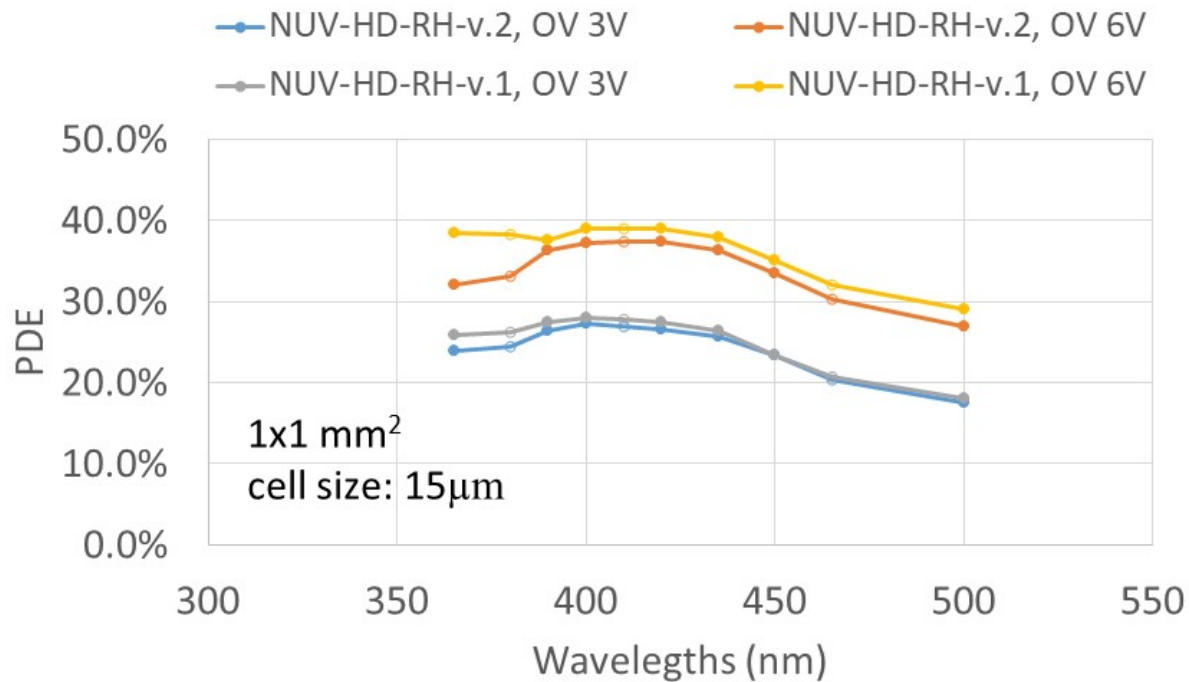
1x1 mm² (Die size ~ 3.15x3.15mm²)
 Cell size: 33% 40 µm – 33% 25 µm – 33% 15 µm

Singolo Wafer

		Structure type	
		1x1	3x3
cell size (µm)	40	260	244
	25	260	244
	15	260	244
	tot	780	732

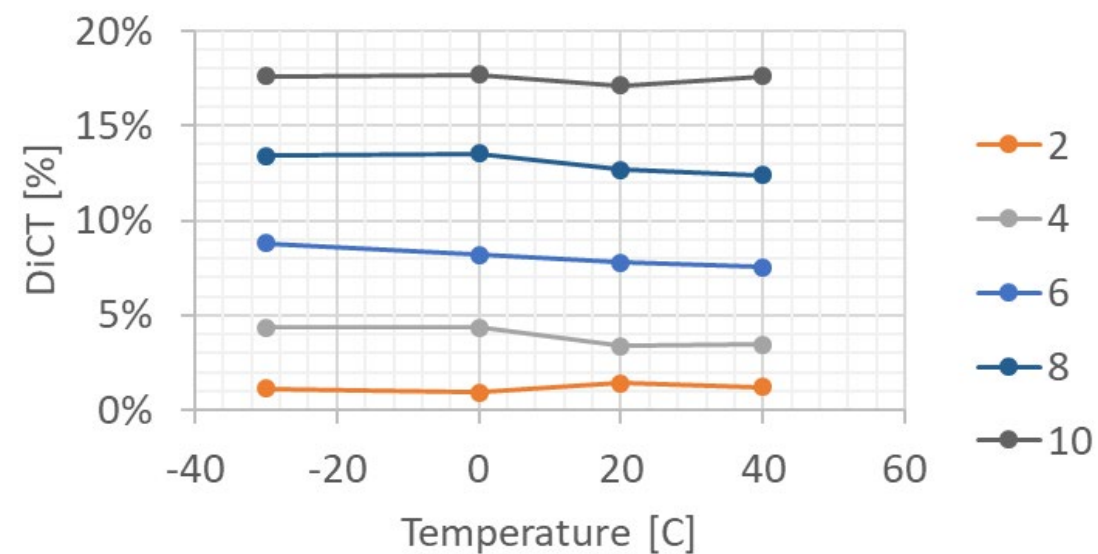
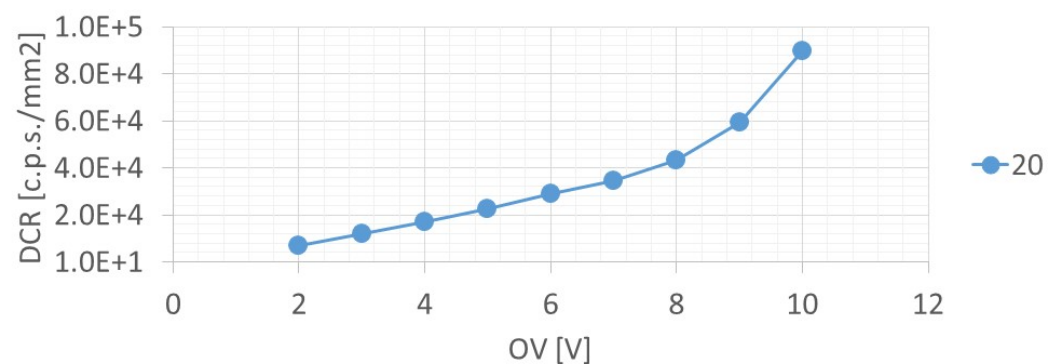
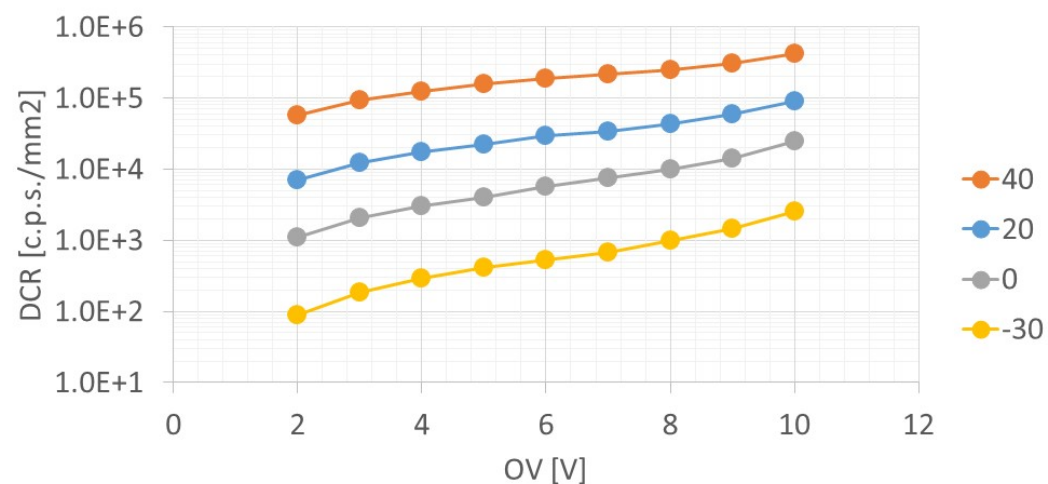
Produzione 12 wafer con resa attesa >85%

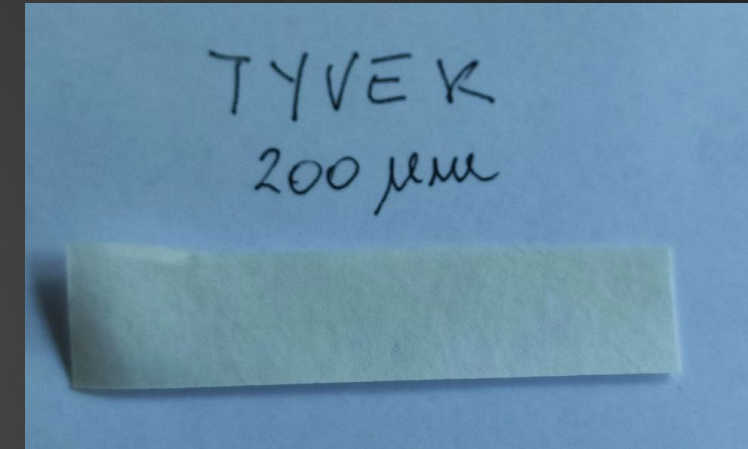
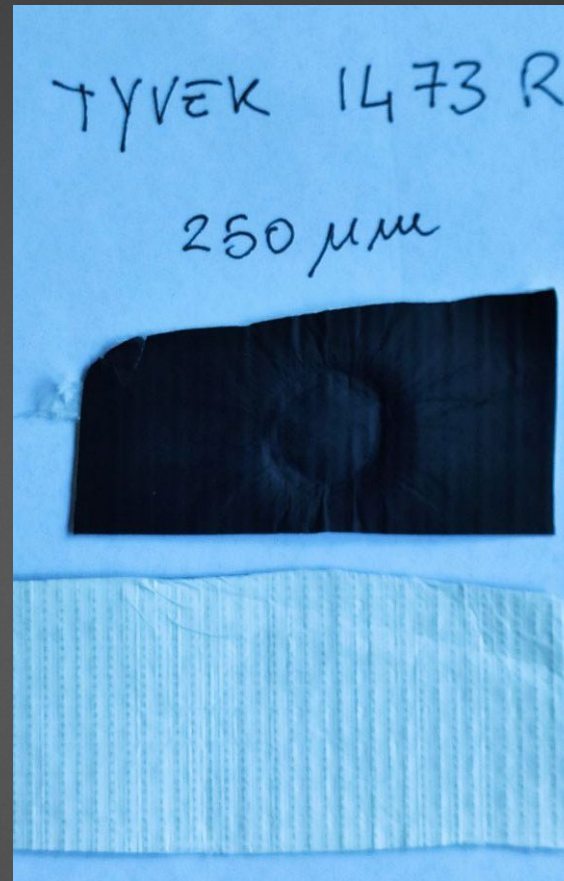
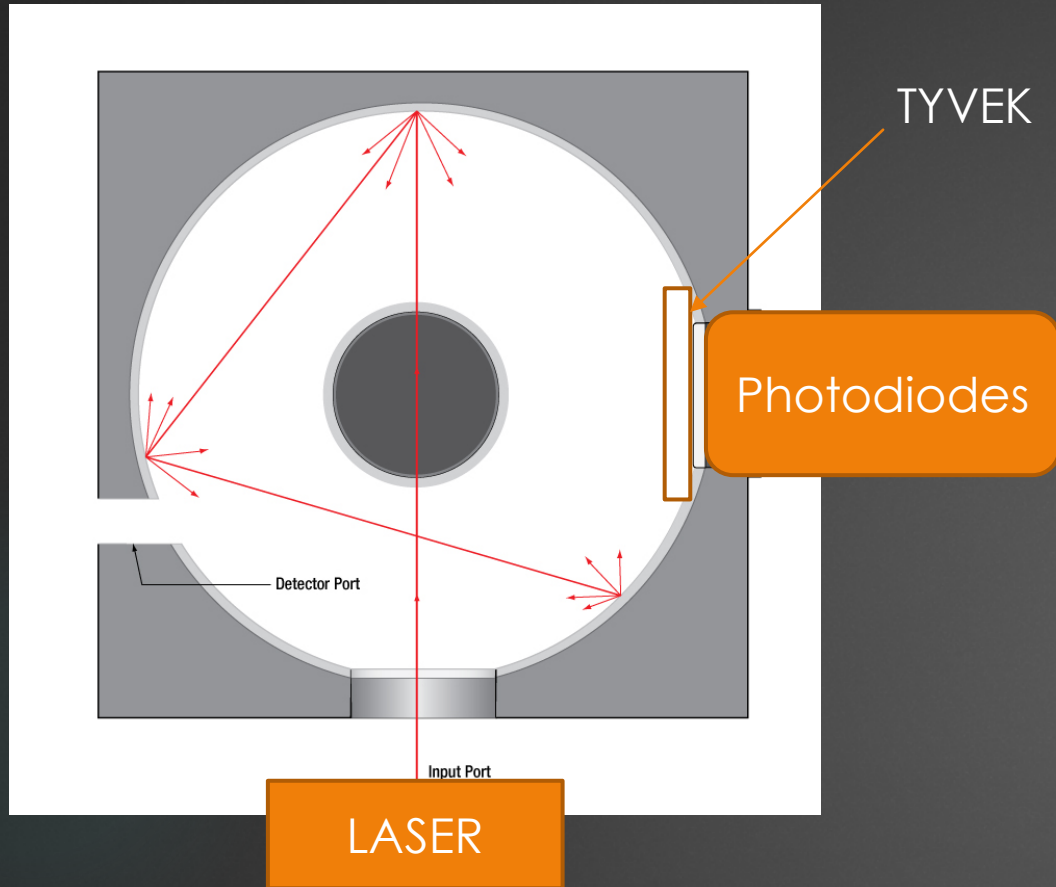




DCR vs Over-Voltage

Semi-log scale

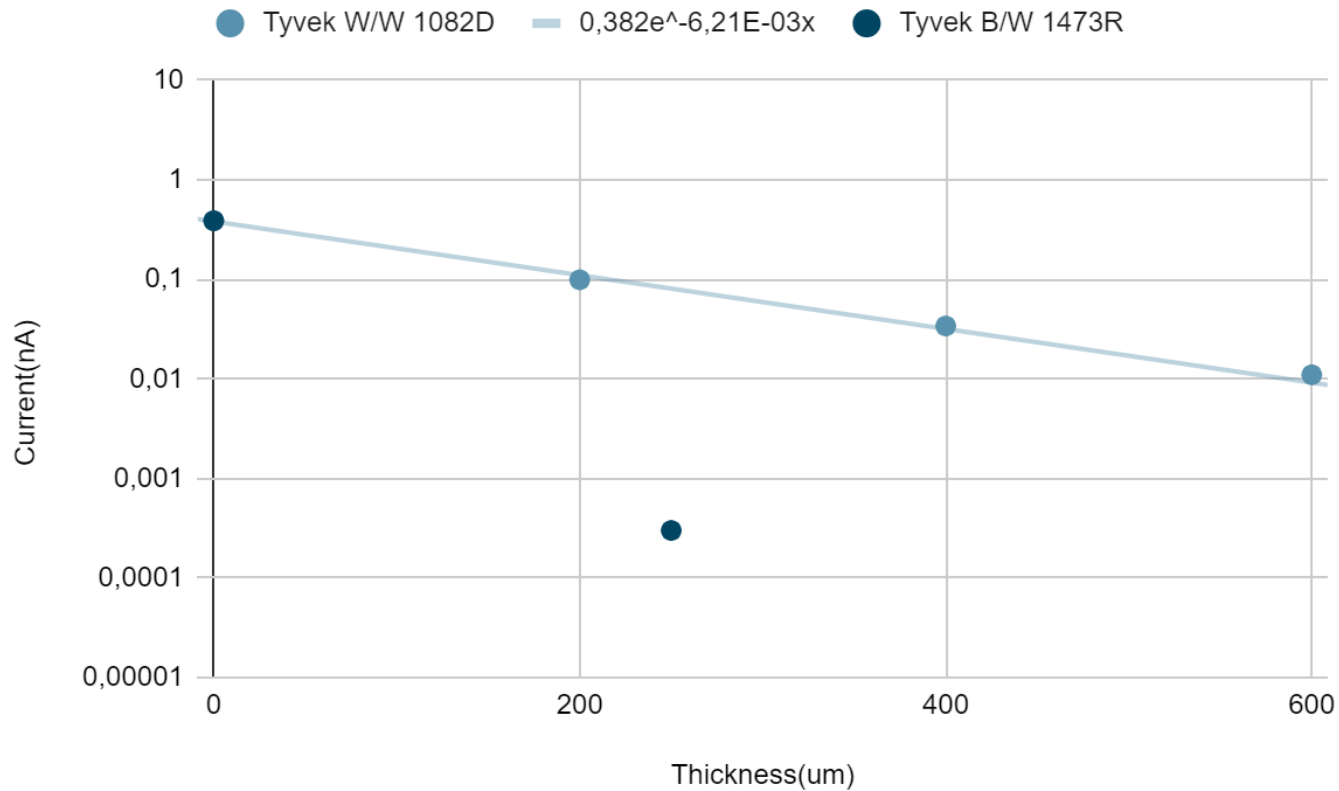




Tyvek 215um + 35um black foil

Hamamatsu S12271

Keithley 6485 picoammeter



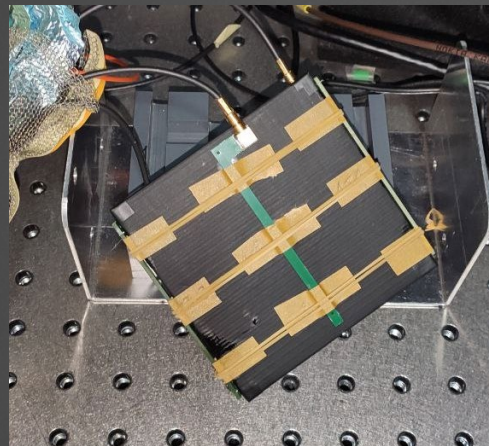
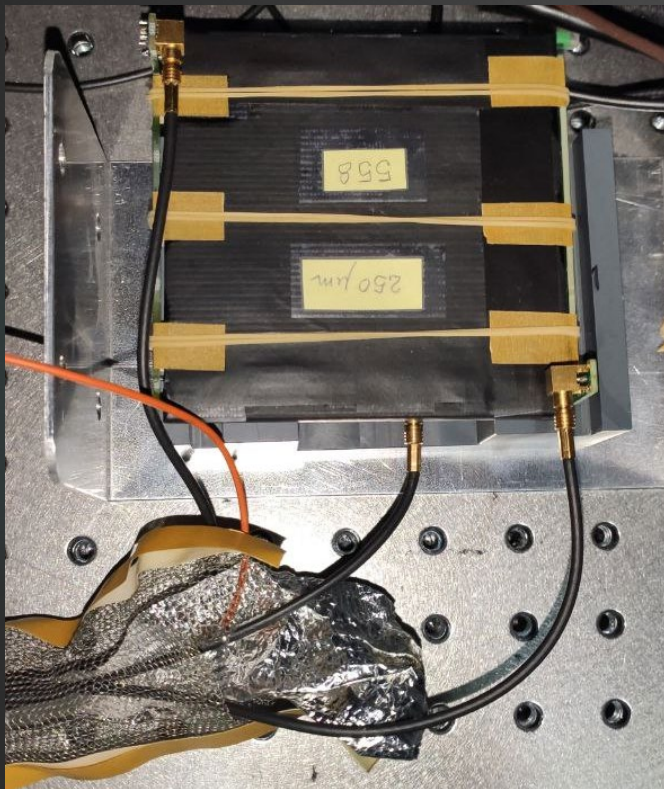
Tyvek 1082D attenuation length 160um

Tyvek 1473R with one side black is very effective in light tightness
We need to perform studies to understand the reflectivity capability

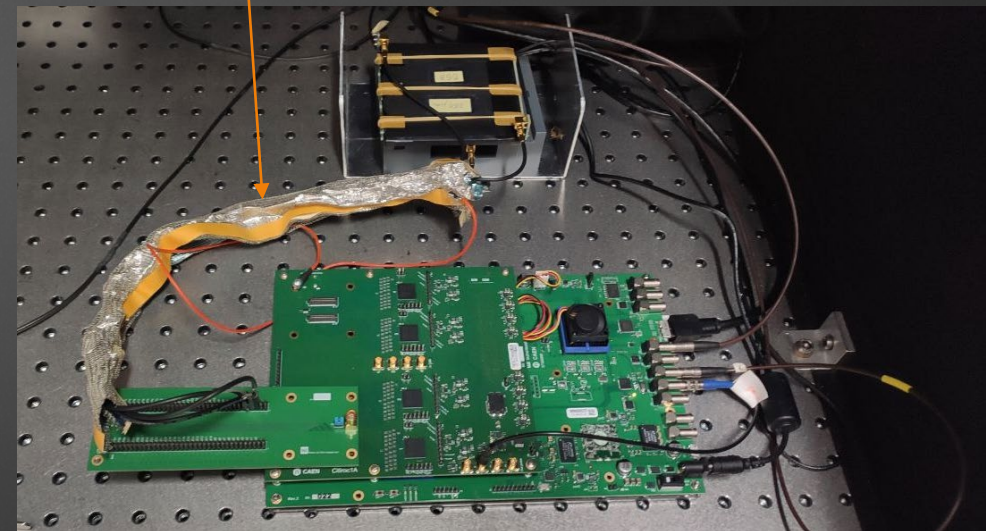


Not in scale
Black sheet 35um
White Tyvek 1473R 215 um
BC404 5mm

3x 1.3x1.3mm **side** S14360-1315PS (HV 41.77 V)
3x 3x3mm **side** S14360-3015PS (HV 41.81 V)
3x 3x3mm **top** S14360-3015PS (HV 41.81 V)



External shielding



Asic n. 1 Ch. 16

Effective HV 41.77647058823529

LowGain 60 –x20

HighGain 60 –x200

TRG Mask 1

3x 1.3x1.3mm **side** S14360-1315PS (HV 41.77 V)

Asic n. 1 Ch. 17

Effective HV 41.811764705882354

LowGain 60 –x20

HighGain 60 –x200

TRG Mask 0

3x 3x3mm **side** S14360-3015PS (HV 41.81 V)

Asic n. 1 Ch. 18

Effective HV 41.811764705882354

LowGain 60 –x20

HighGain 60 –x200

TRG Mask 0

3x 3x3mm **top** S14360-3015PS (HV 41.81 V)

Main HV 44.0 V

HVon True

DateTime 03/05/2021 17:18:26

T0Mode INTERNAL - PERIODIC

T0freq 100 Hz

PacketSize 10 Events

TargetType Free running

TargetValue 1000.0

High Gain Shaping Time 50.0 ns

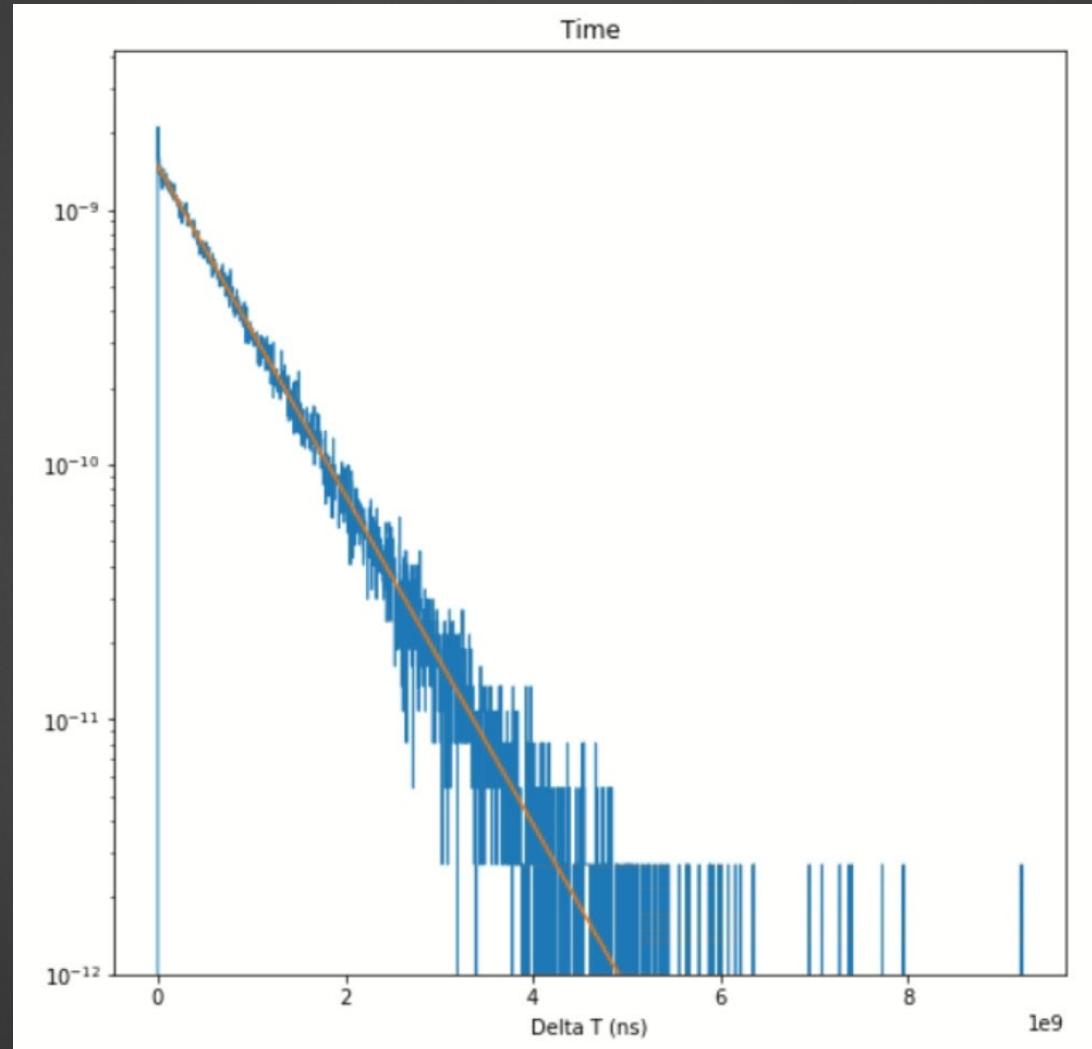
Low Gain Shaping Time 50.0 ns

Fast Shaper on High gain

Charge Threshold DAC 400

Time Threshold DAC 300

AcqTime (s) 55526.13993175 N evt 82528 Rate(HZ) 1.486290963165085
Rate from fit (Hz): 1.4862461817956671



Total Number of evts: 82509

HG Ch	16	mean	3346.884095385428	sigma	323.69445705505865
HG Ch	17	mean	4439.5431085130285	sigma	829.512268951278
HG Ch	18	mean	1451.6805573869121	sigma	395.13793053882796

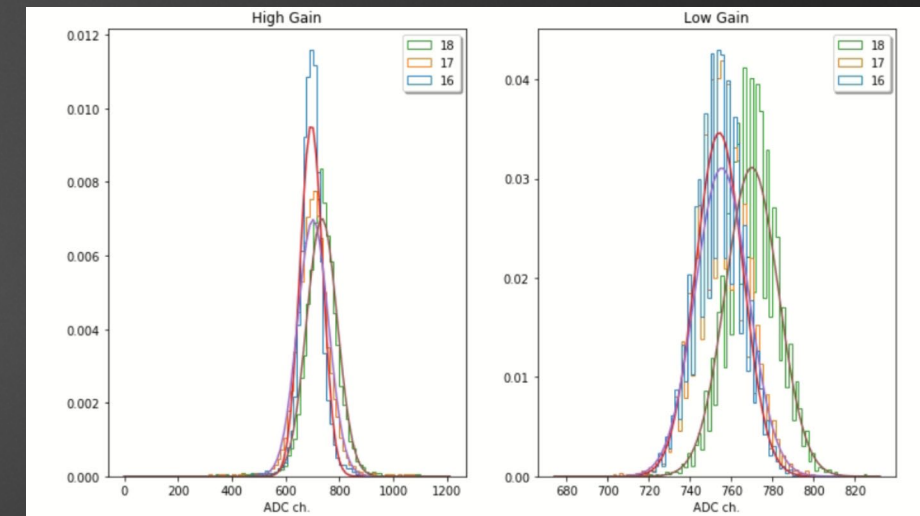
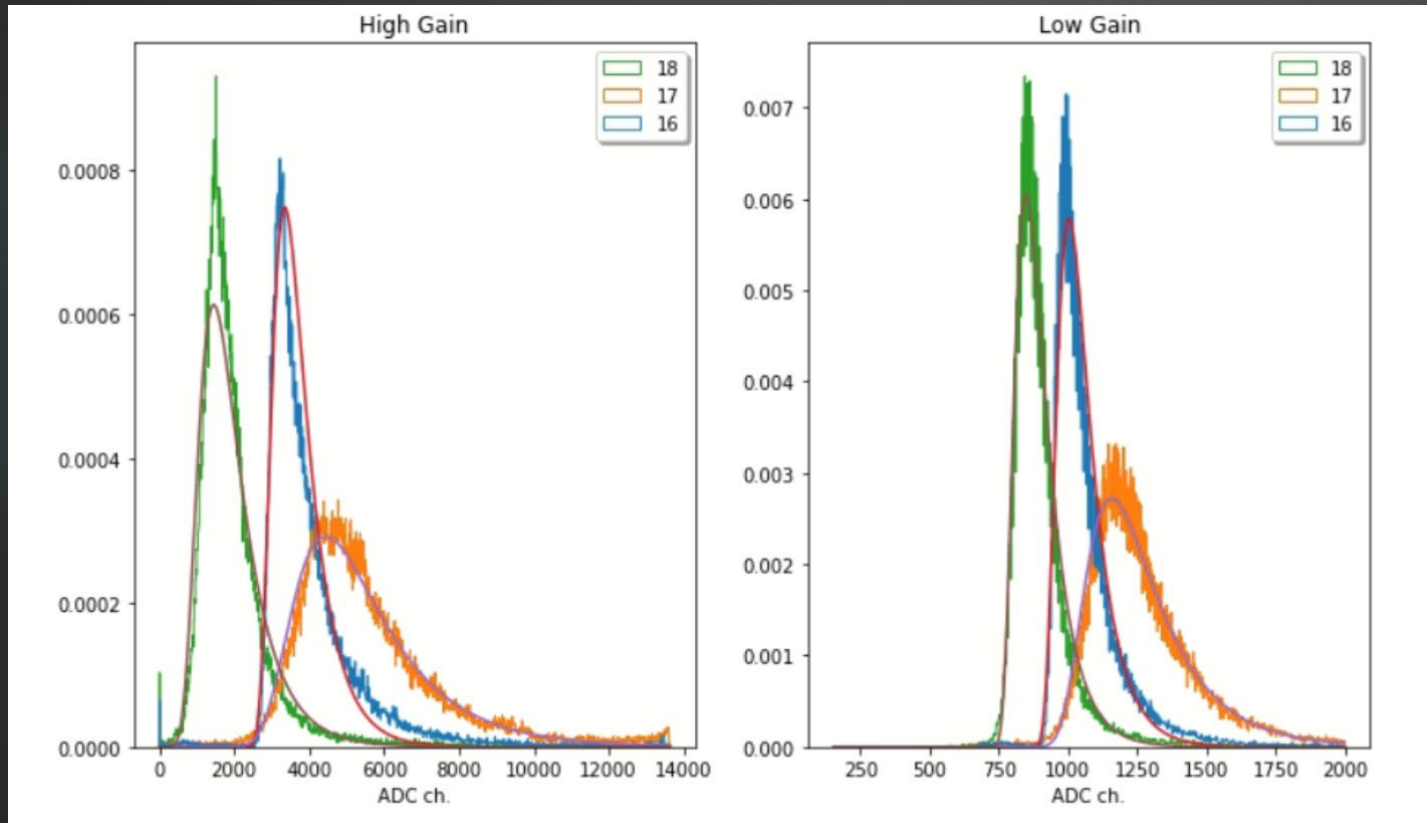
LG Ch	16	mean	1004.0299739730942	sigma	41.81855603403375
LG Ch	17	mean	1157.8922422533165	sigma	88.96656818439409
LG Ch	18	mean	849.44574326324	sigma	40.00368383336796

PEDESTALS

Total Number of evts: 14329

HG Ch	16	mean	695.4701680672268	sigma	41.62646965095654
HG Ch	17	mean	701.4424113475177	sigma	57.16117206066128
HG Ch	18	mean	734.7645722399716	sigma	56.89865269798688

LG Ch	16	mean	754.1473236094633	sigma	11.515130366666492
LG Ch	17	mean	755.3385442110406	sigma	12.834894038991159
LG Ch	18	mean	769.9456347267778	sigma	12.812619206568408



$$y = P0 + P1 * x$$

