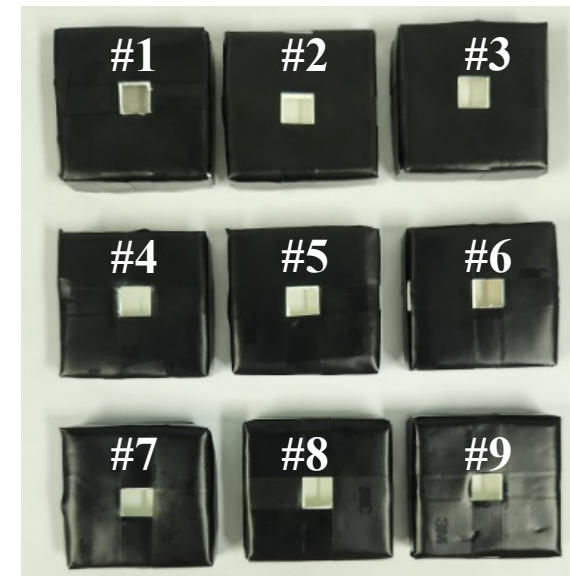
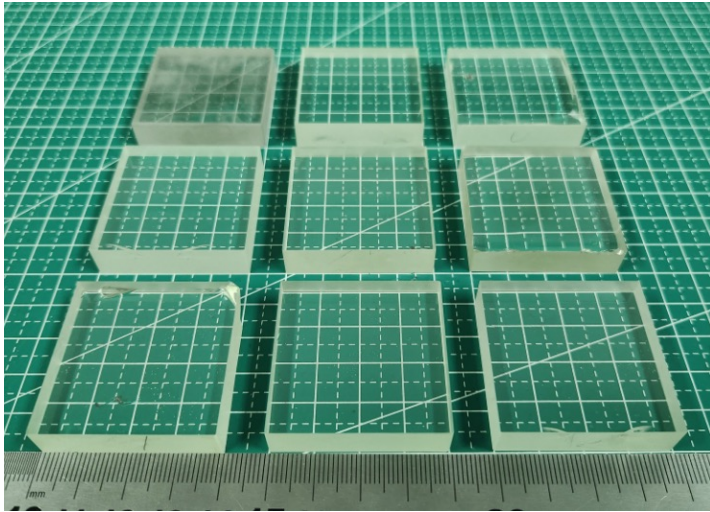


DESY Beam Test Results of Glass Scintillator Tiles

Dejing Du, Yong Liu

Samples:

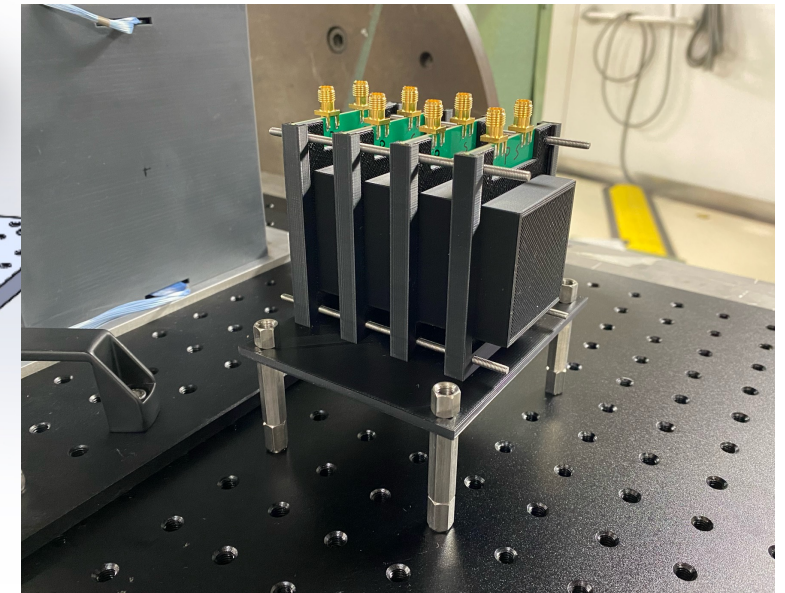
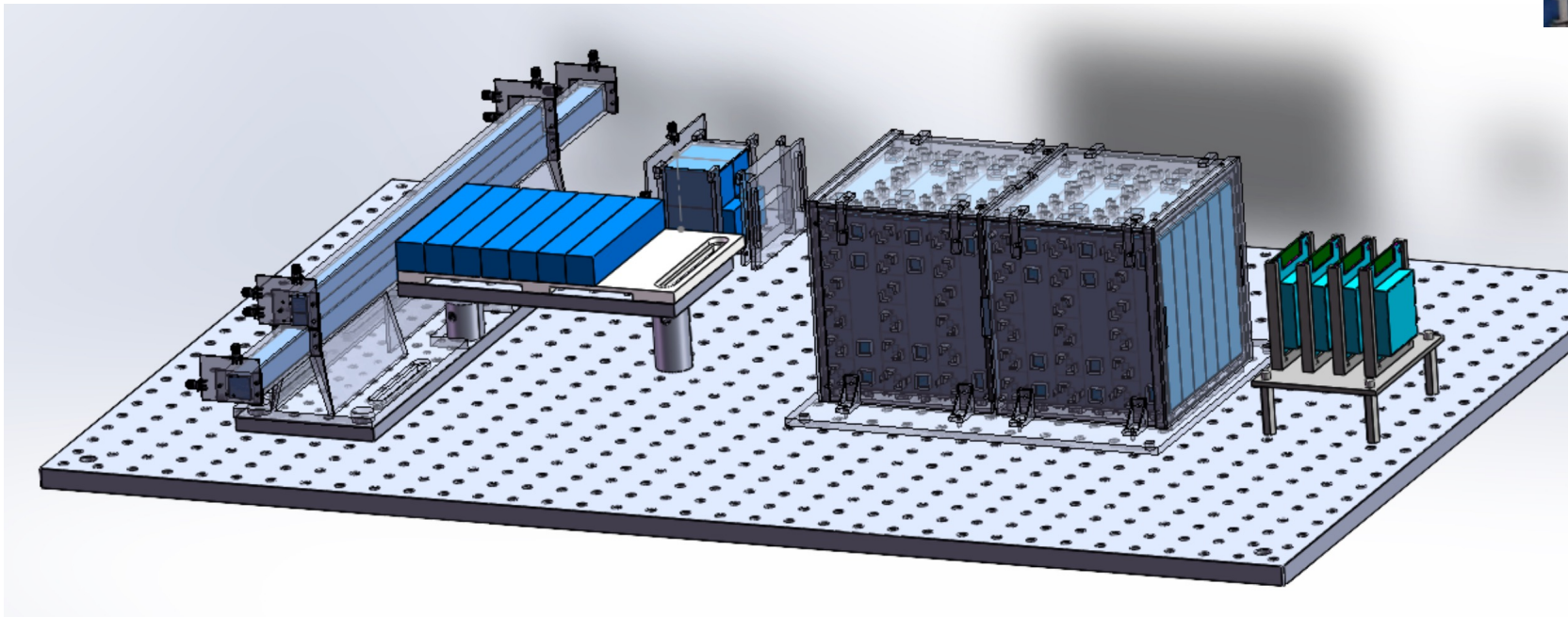
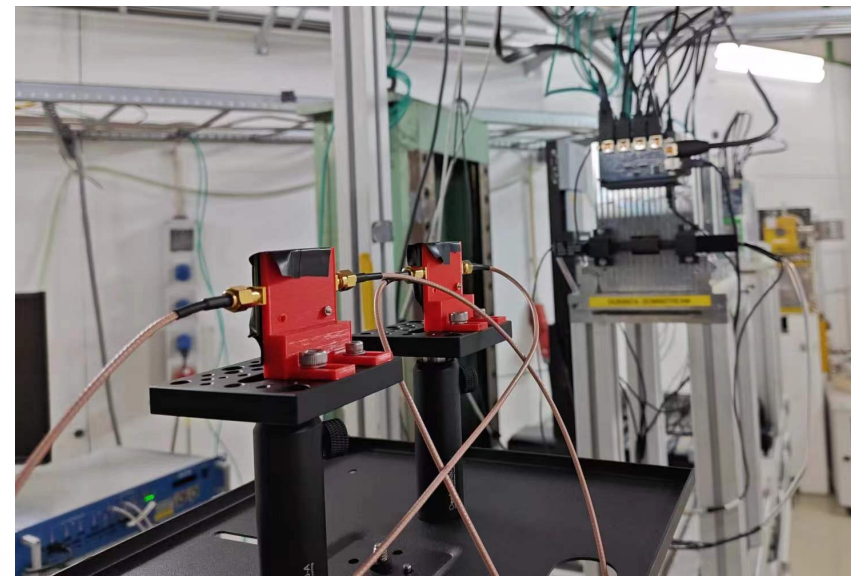
- 9 new DESY samples (standard size, 4*4*1 cm³)
- 4 CERN samples (non-standard size)
- 1 plastic scintillator (4*4*1 cm³, as a reference)



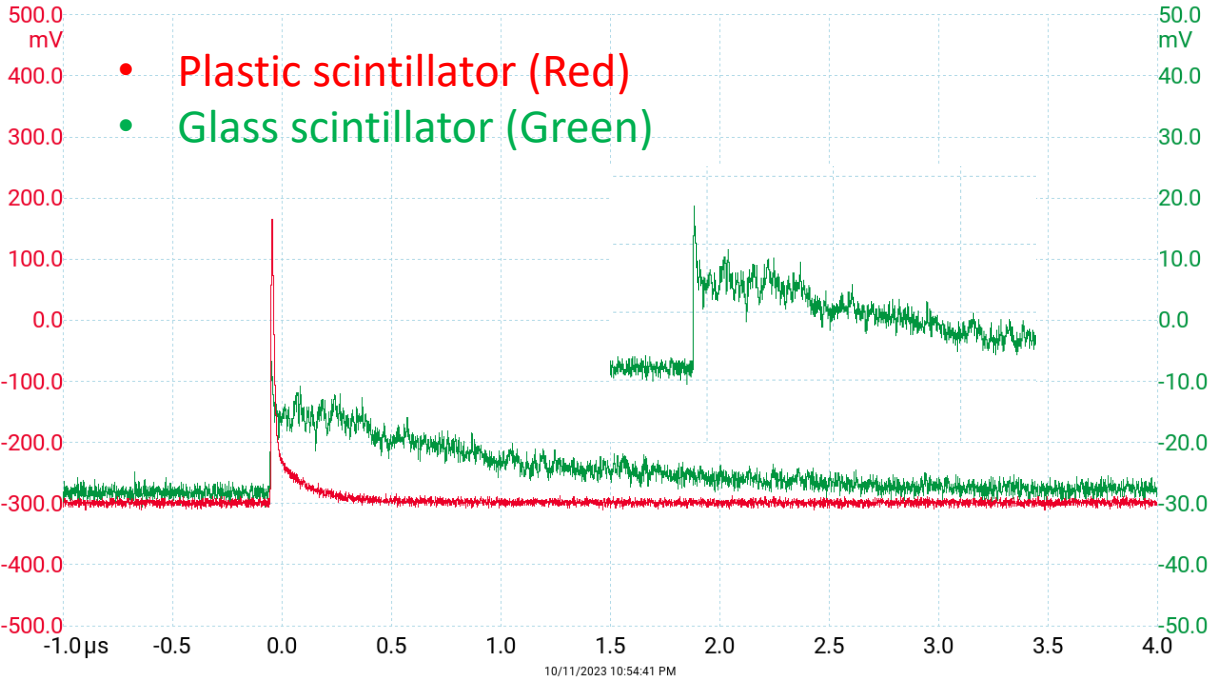
	T (%@400nm)	Density (g/cm ³)	LY (ph/MeV)	Size (mm ³)	Decay time (ns)
DESY#1	16.8	~6	626	40*40*10	116.4 (6.6%), 775.8
DESY#2	76.6	~6	684	40*40*10	104.0 (2.3%), 1046.5
DESY#3	75.4	~6	572	40*40*10	106.8 (2.6%), 988.2
DESY#4	83.8	~6	788	40*40*10	87.0 (1.8%), 1024.3
DESY#5	78.1	~6	674	40*40*10	103.8 (2.1%), 1172.9
DESY#6	64.2	~6	507	40*40*10	95.9 (2.0%), 1037.4
DESY#7	72.8	~6	576	40*40*10	106.4 (2.5%), 997.0
DESY#8	80.7	~6	673	40*40*10	114.4 (4.3%), 1014.0
DESY#9	80.3	~6	768	40*40*10	109.8 (2.6%), 1009.8
CERN#8	81	~5.1	840	27.8*25.6*5.0	136 (23%), 933
CERN#9	49	~5.1	352	34.6*34.7*7.5	141 (12%), 771
CERN#10	64	~5.1	524	34.7*35.2*7.4	129 (10%), 819
CERN#11	81	~5.1	767	30.5*30.0*8.7	153 (12%), 1085

Beam test setup

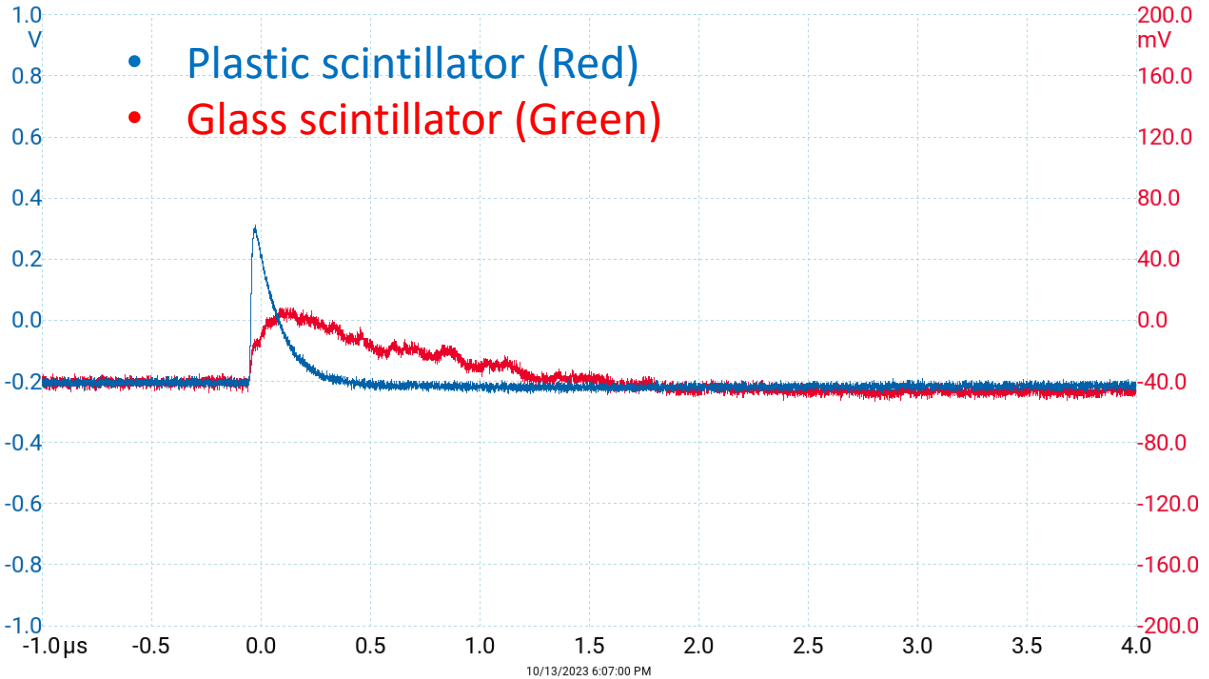
- 5GeV negative electron beams
- Using coupling signals of 2 plastic scintillator tiles (1*1*1 cm³) as external trigger
- Data acquisition using a oscilloscope (5GS/s)



Typical waveforms



HPK Pre Amp

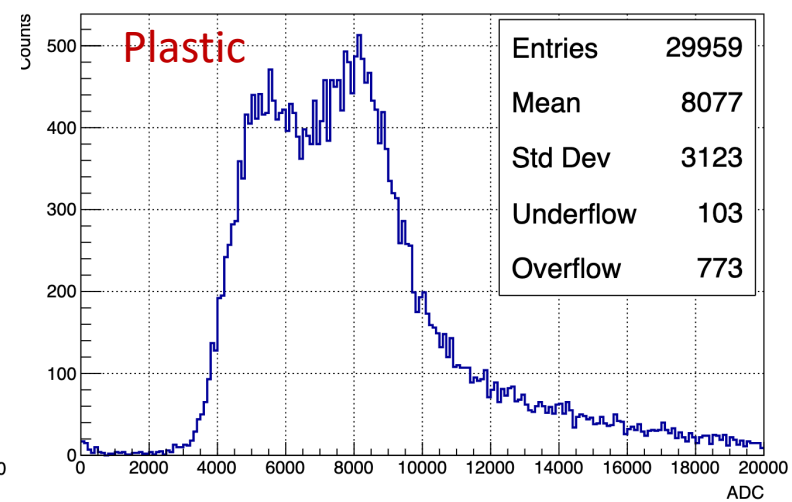
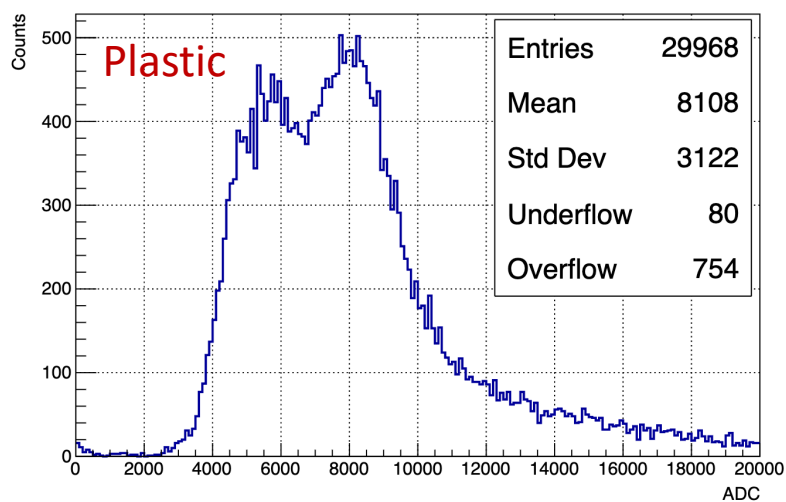
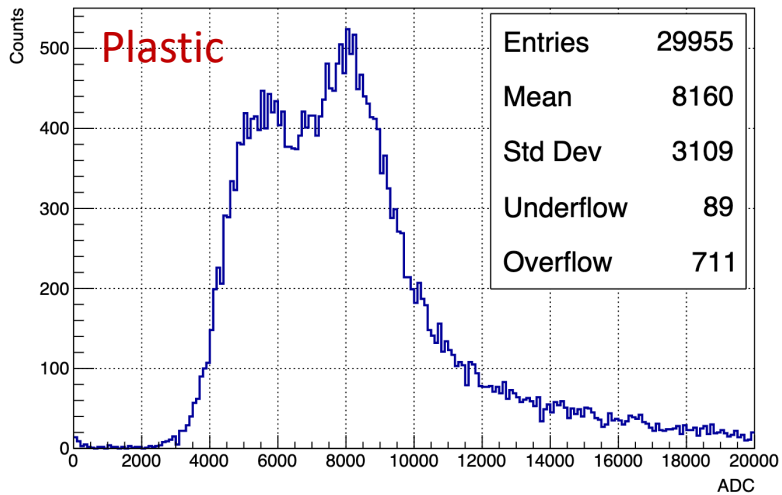
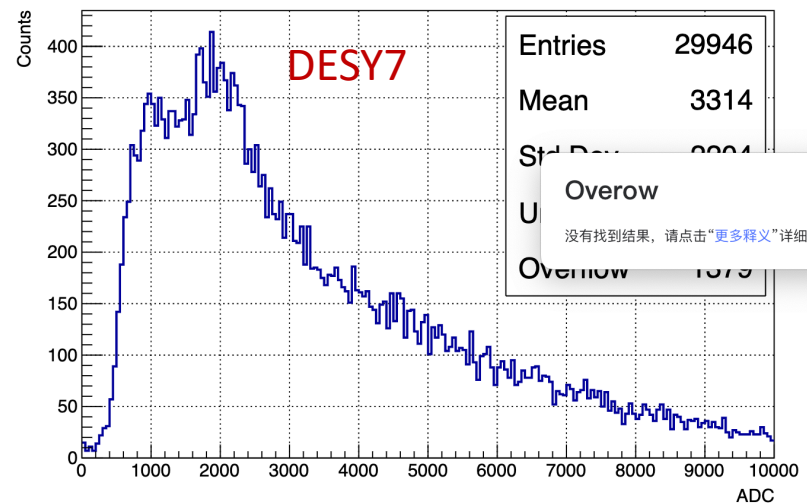
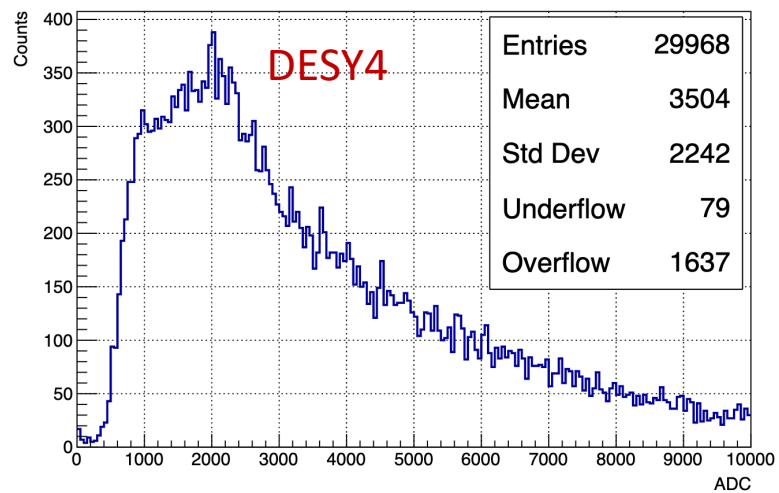
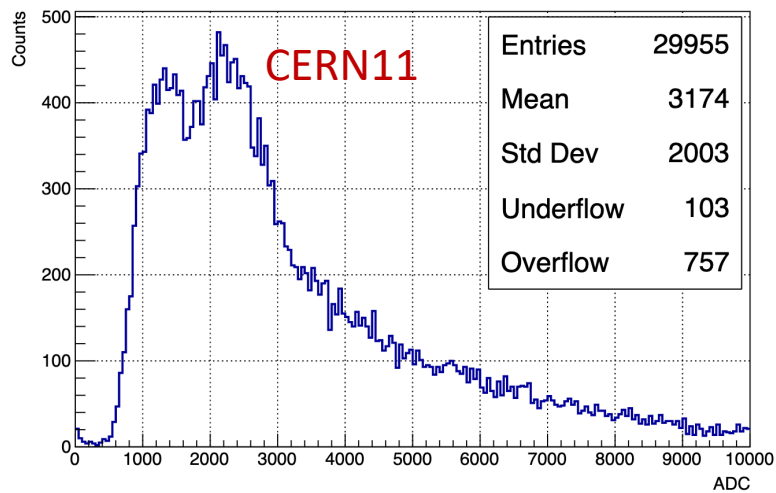


SJTU Pre Amp



- HPK Pre Amp
- Integral range: -100~900ns

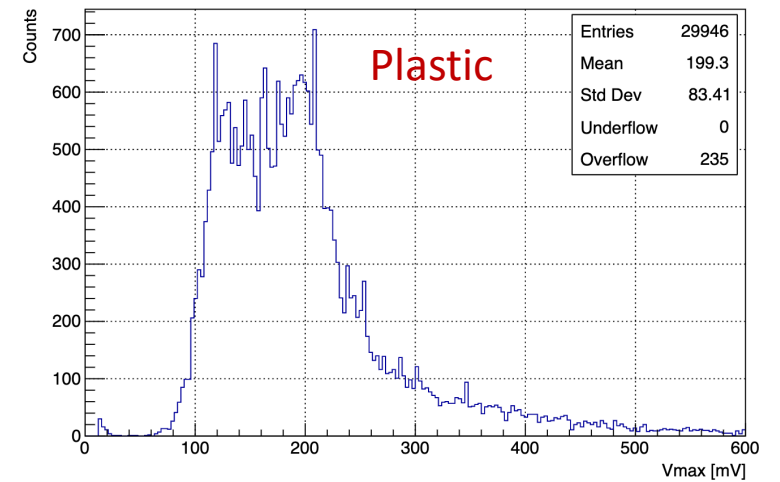
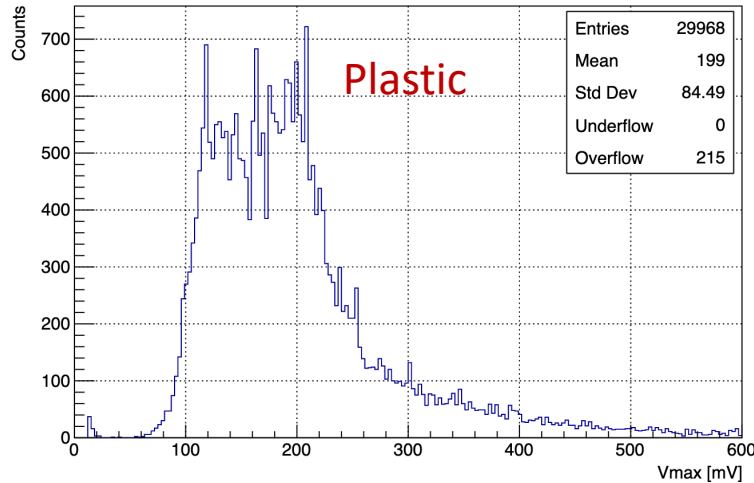
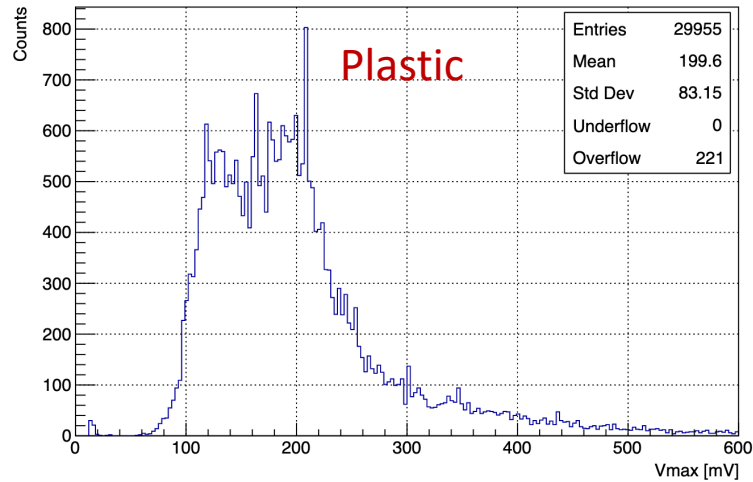
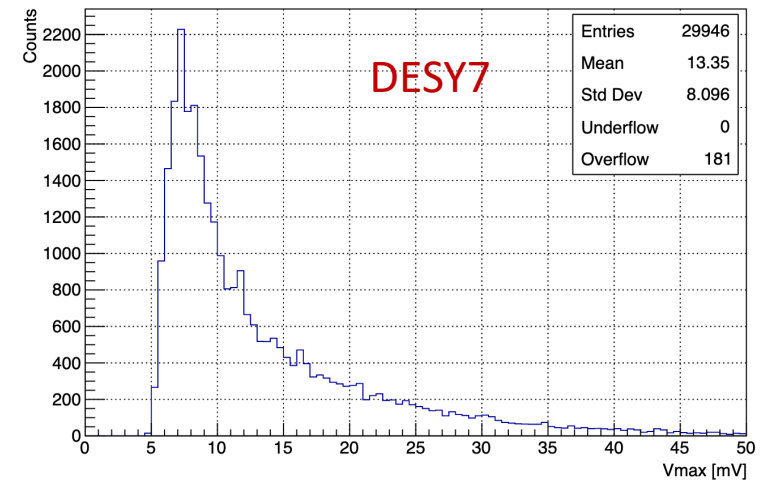
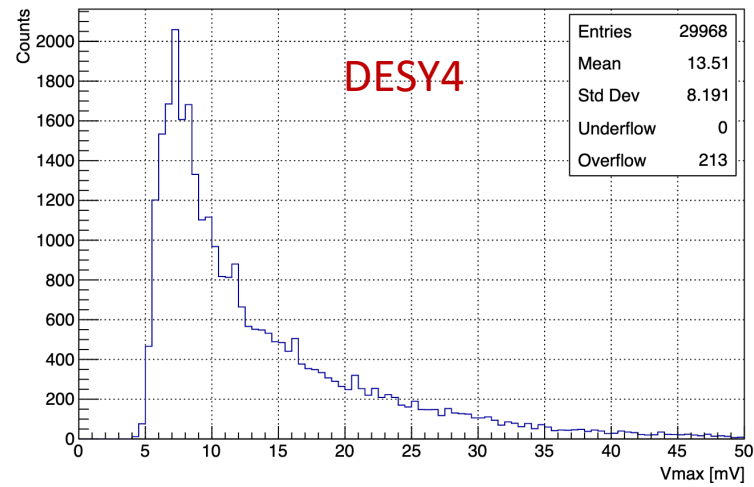
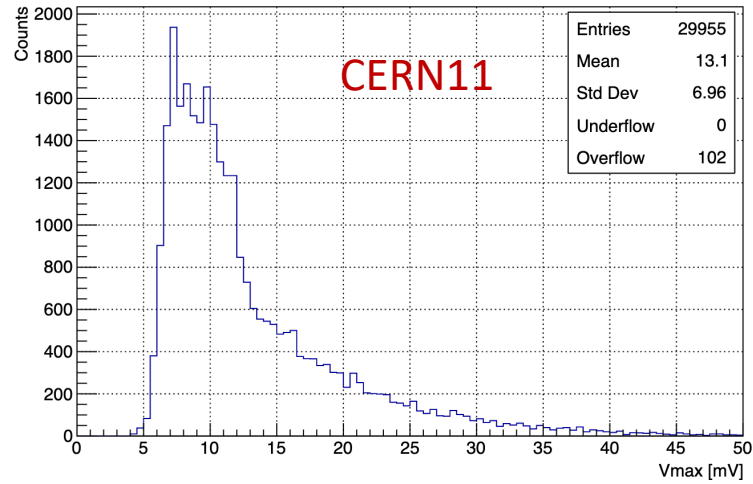
Energy spectrum



Strange two peak structure!!!

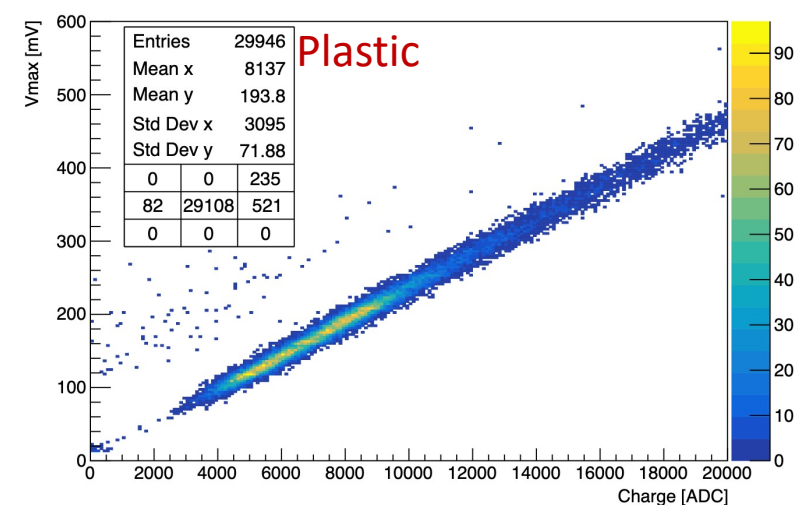
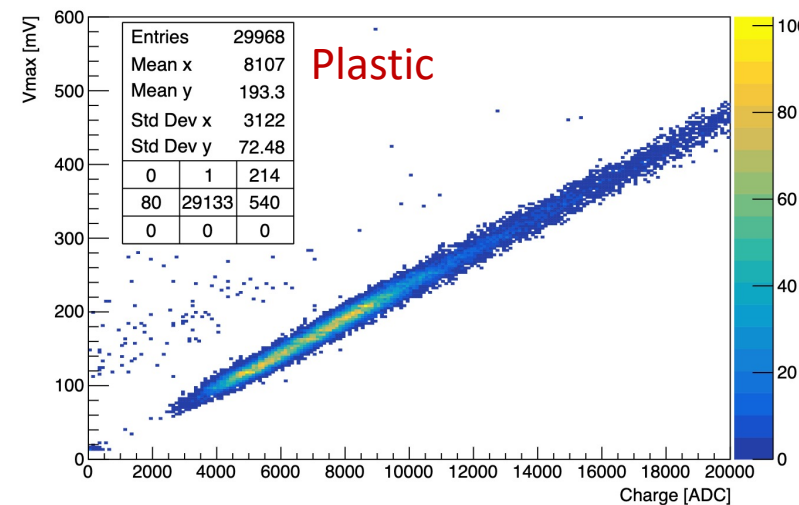
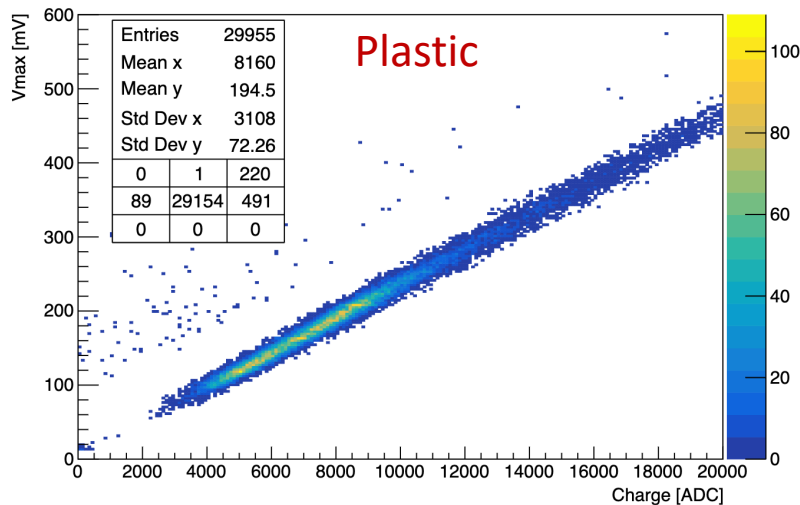
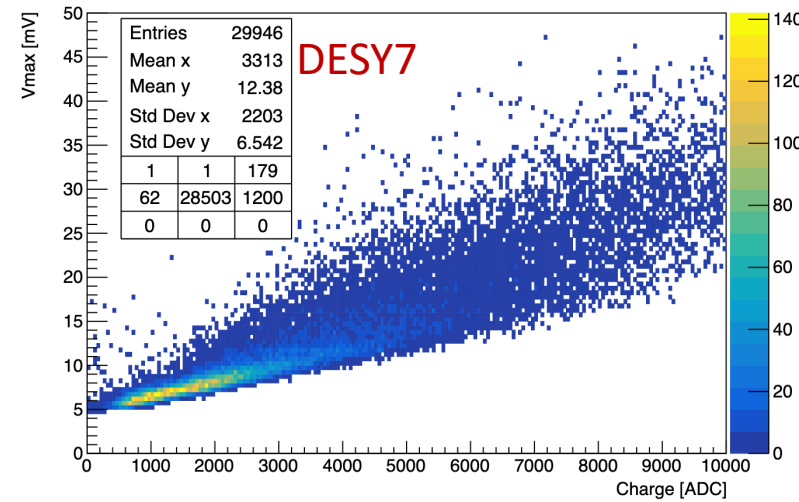
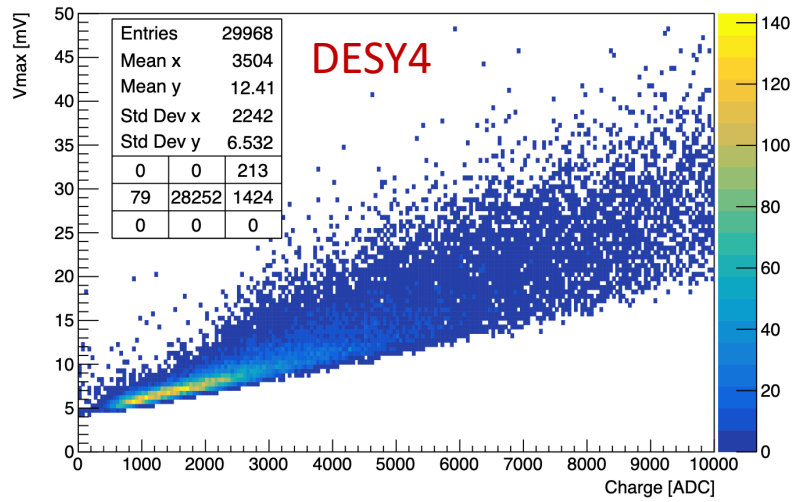
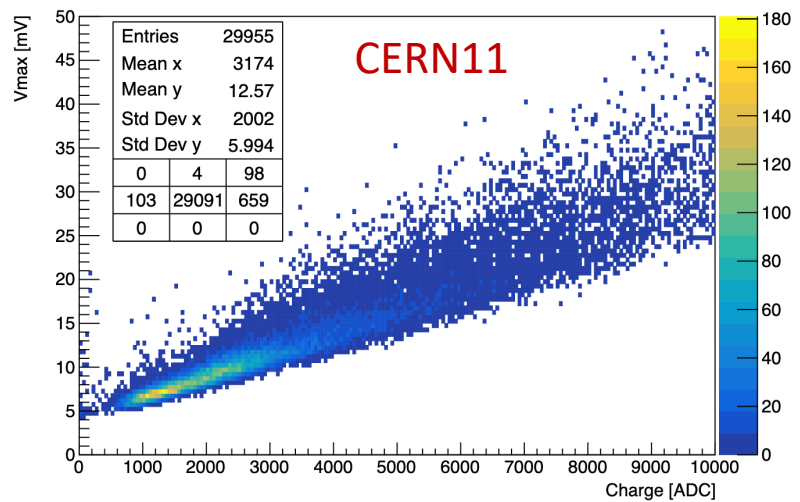
HPK Pre Amp

Peak Voltage



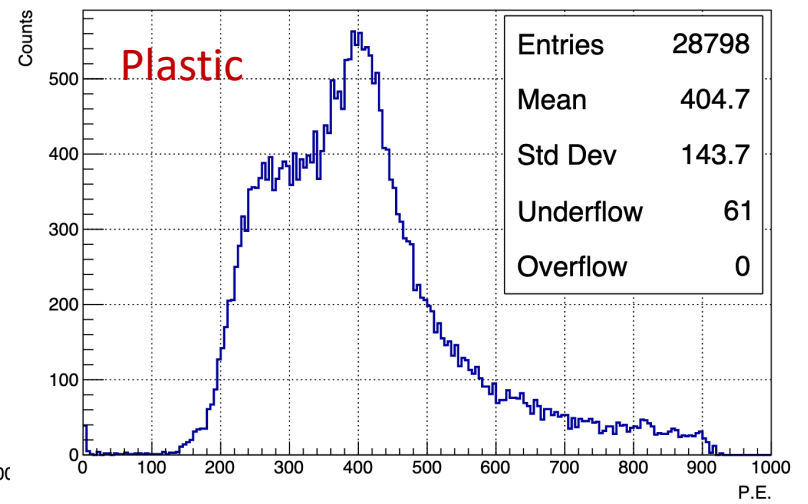
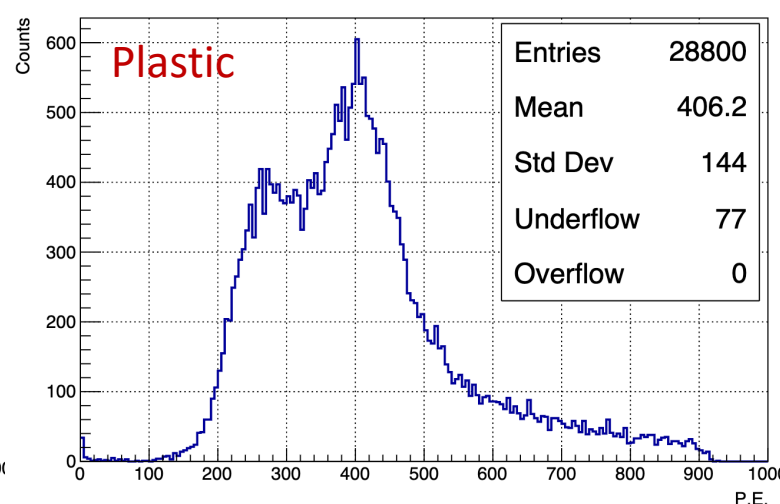
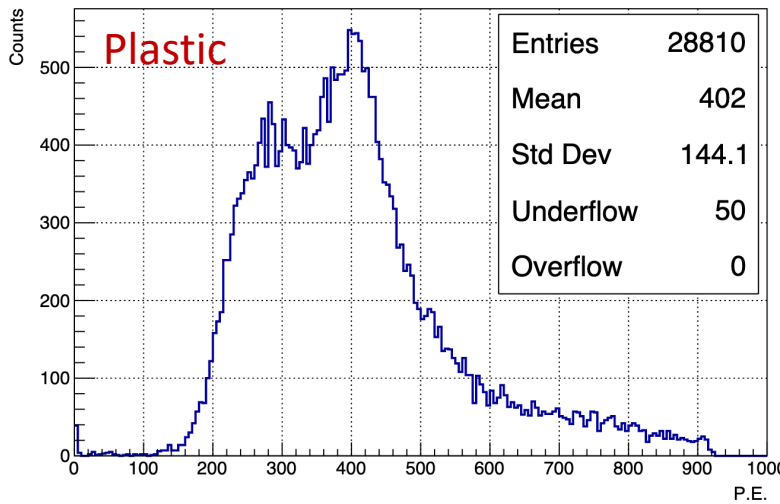
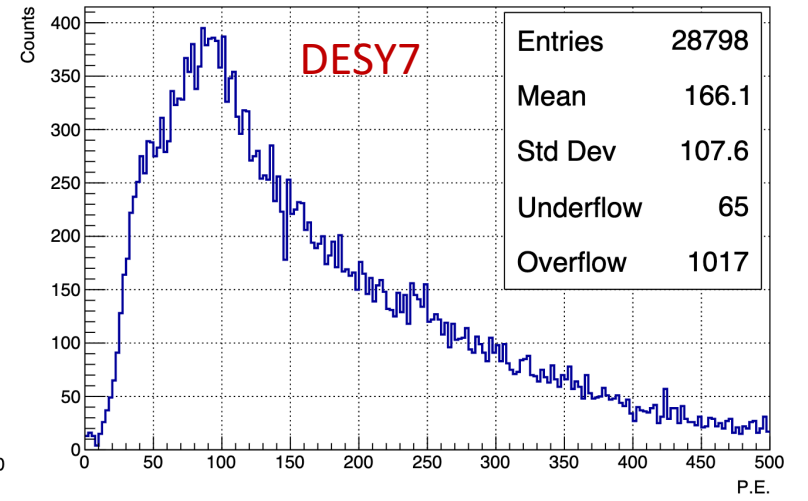
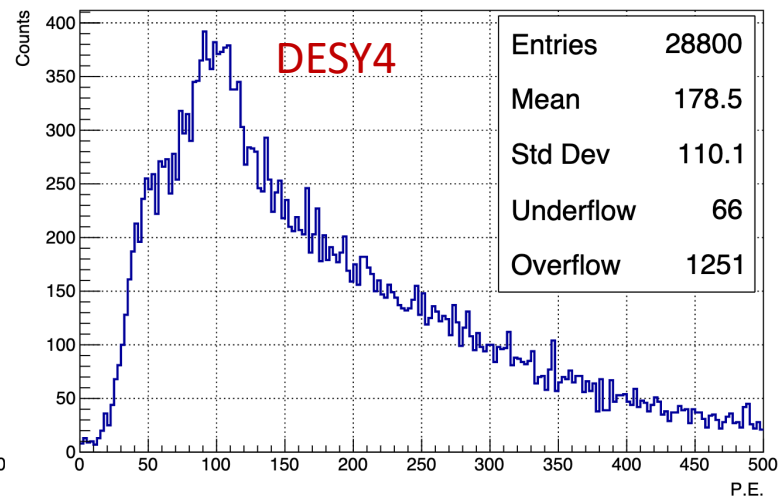
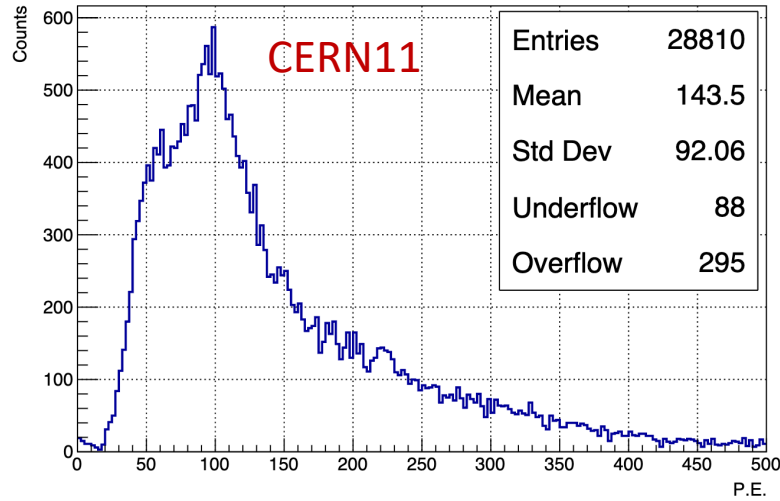
HPK Pre Amp

Energy vs. Peak Voltage



- SJTU Pre Amp
- Integral range
 - Glass (-100~900ns), Plastic (-100~400ns)

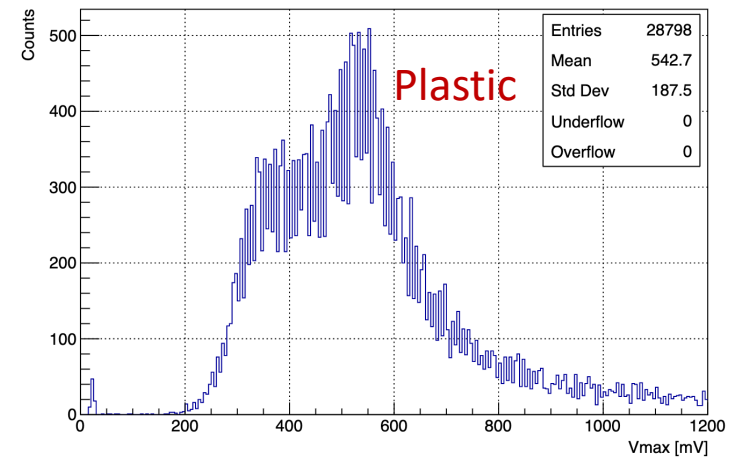
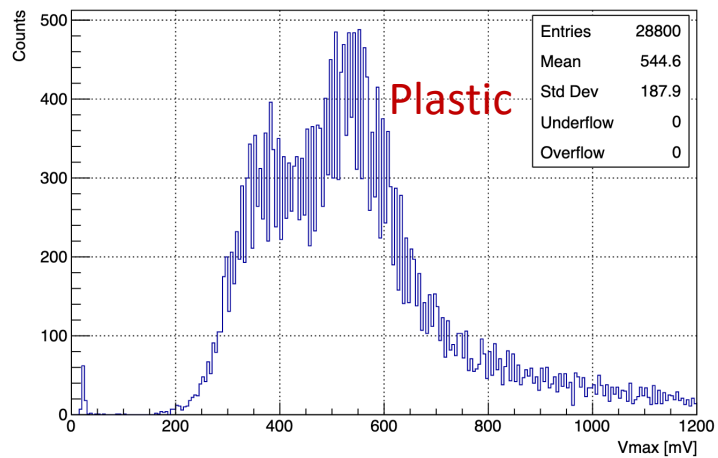
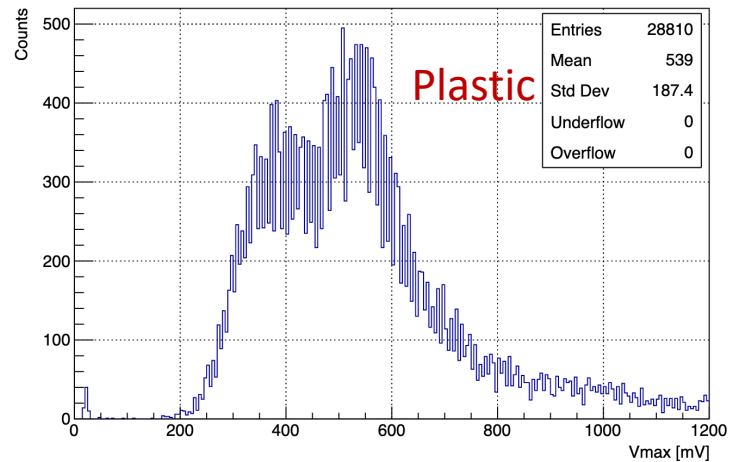
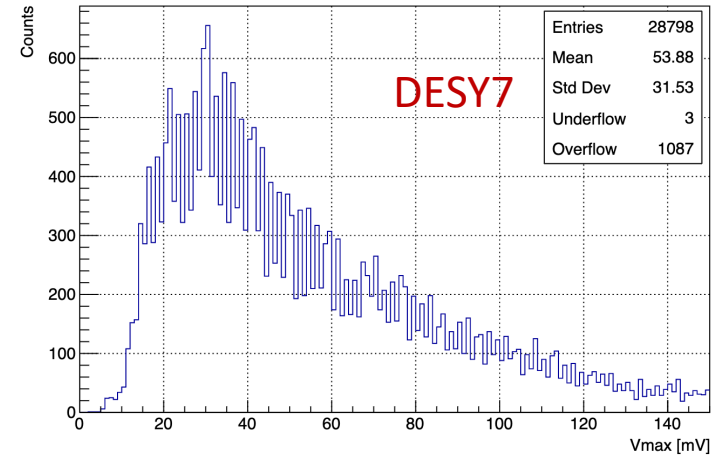
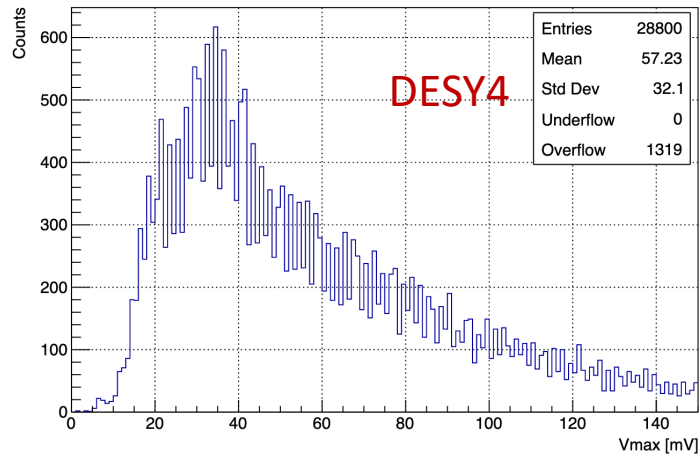
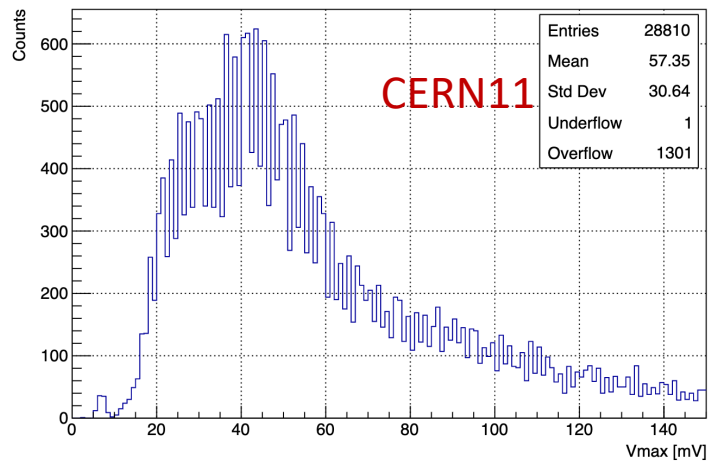
Energy spectrum



Strange two peak structure!!!

SJTU Pre Amp

Peak Voltage



SJTU Pre Amp

Energy vs. Peak Voltage

