Two Batches Scintillator Test Result and Usage of Optical Cement

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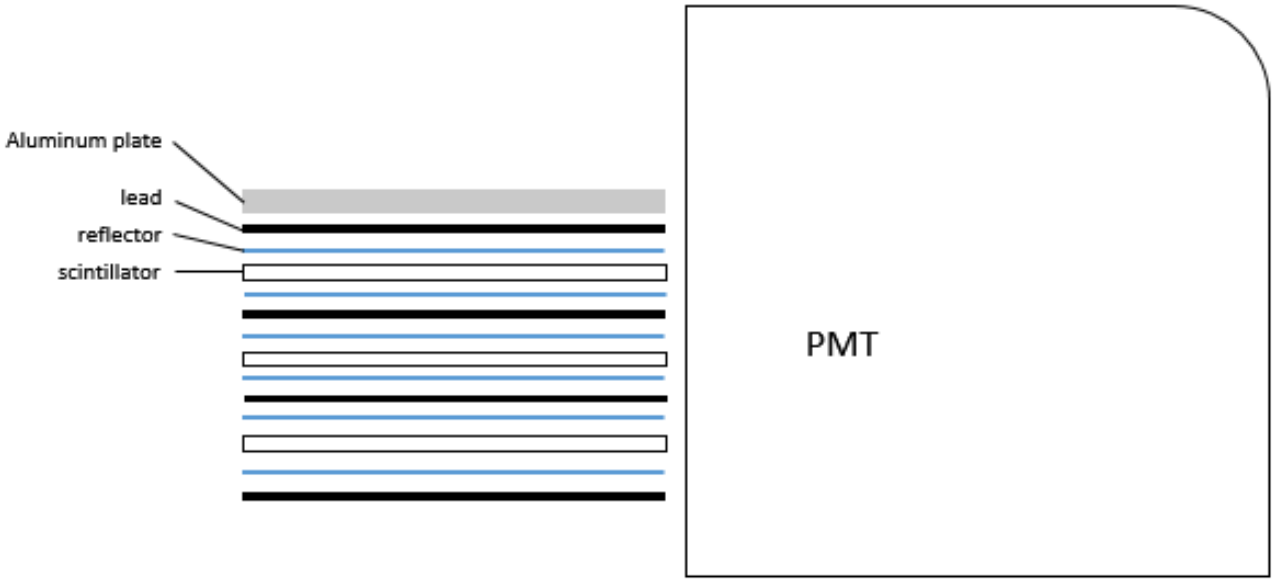
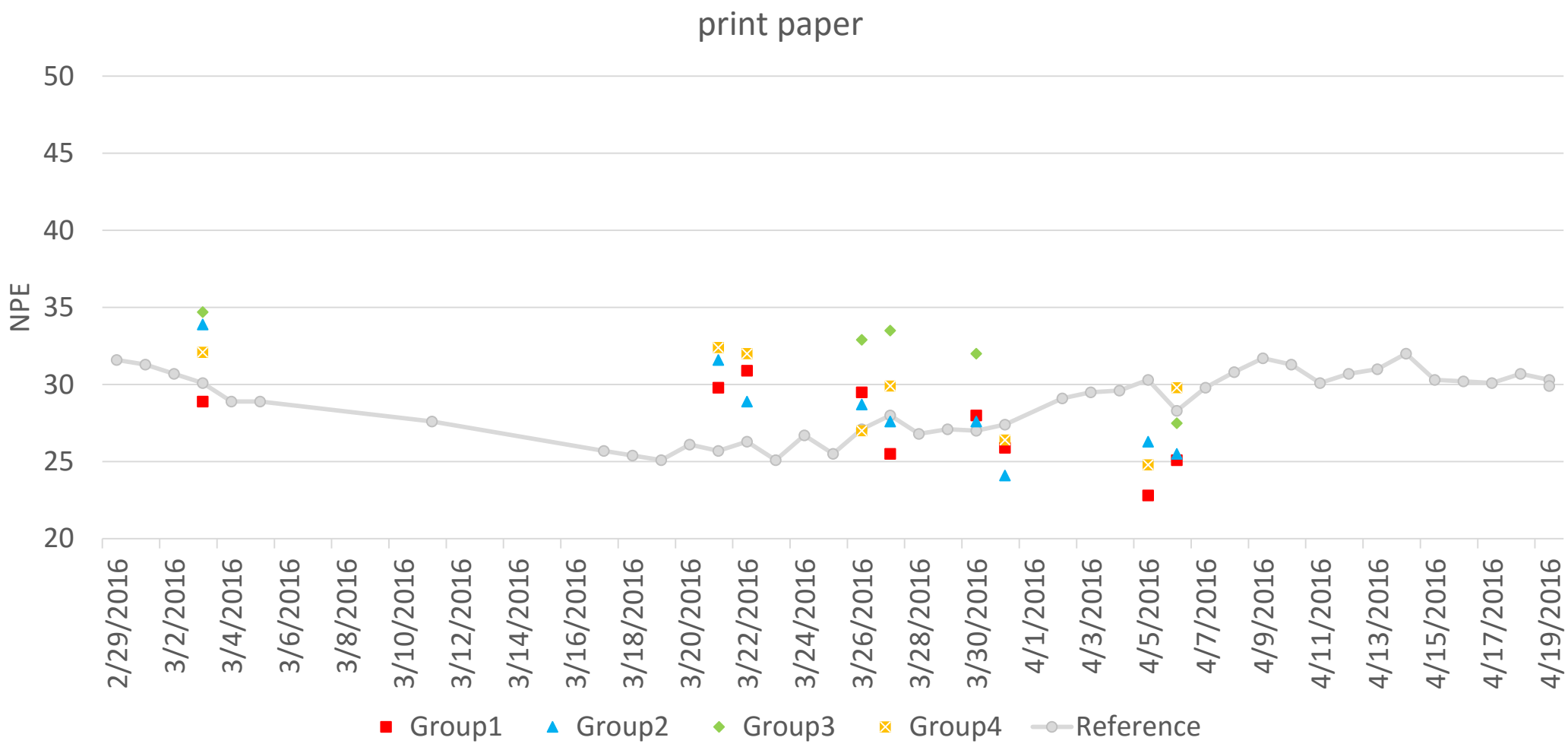
Scintillator Test method



Every Group has 5 layers with lead, paper and scintillator.
It takes one day to get the data for three or four groups at the same time.

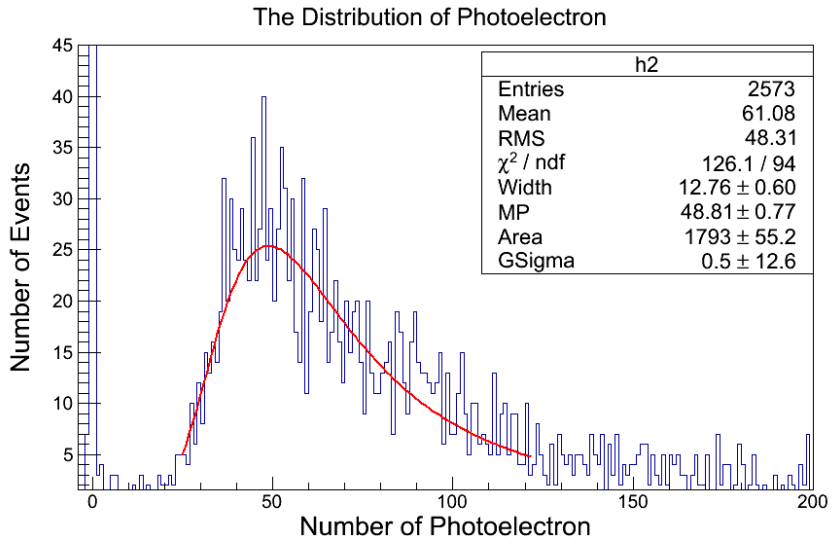
Previous result for the old bach



Test result

No.	NPE(Number of Photo-Electron) for different test					
Previous-1	30.4	29.0	26.9			
Previous-2	32.4	33.5	34.3	33.1	34.8	35.5
New-1			48.1	49.3	50.6	
New-2	45.8	42.5				
New-3				51.2		
New-4					48.9	48.8

New Batch is nearly 40%~50% better than previous batch in light yield.



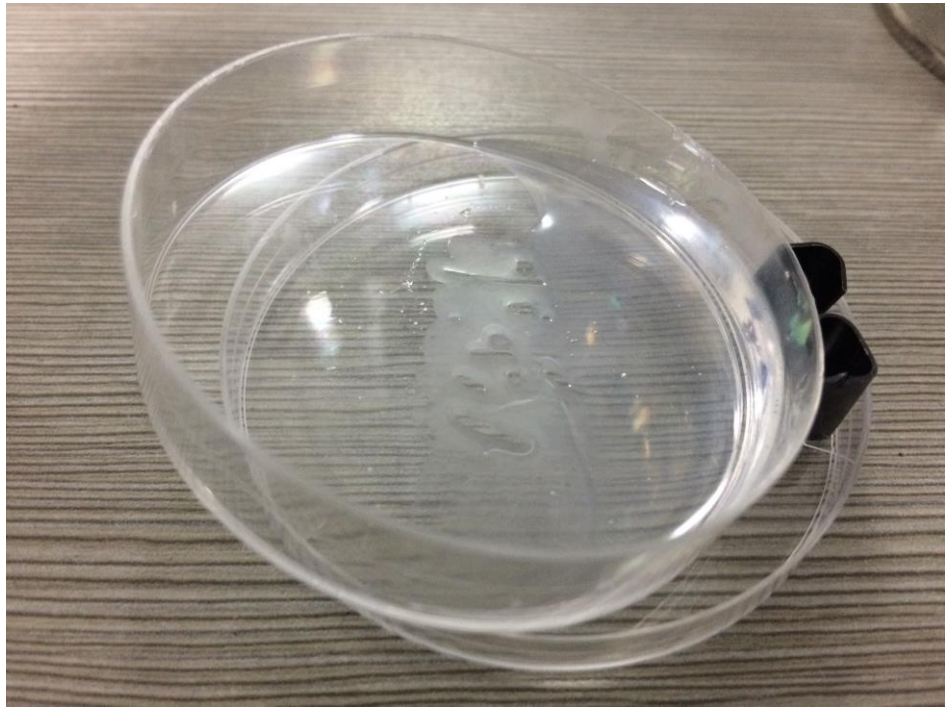
Test result without lead

Scintillator No.	Normal Test as Before	Without lead
New-1	50.6	57.6 (increase 14%)
New-3	43.3	49.9 (increase 15%)
Previous-2	34.8	35.4
New-4	48.9	48.8

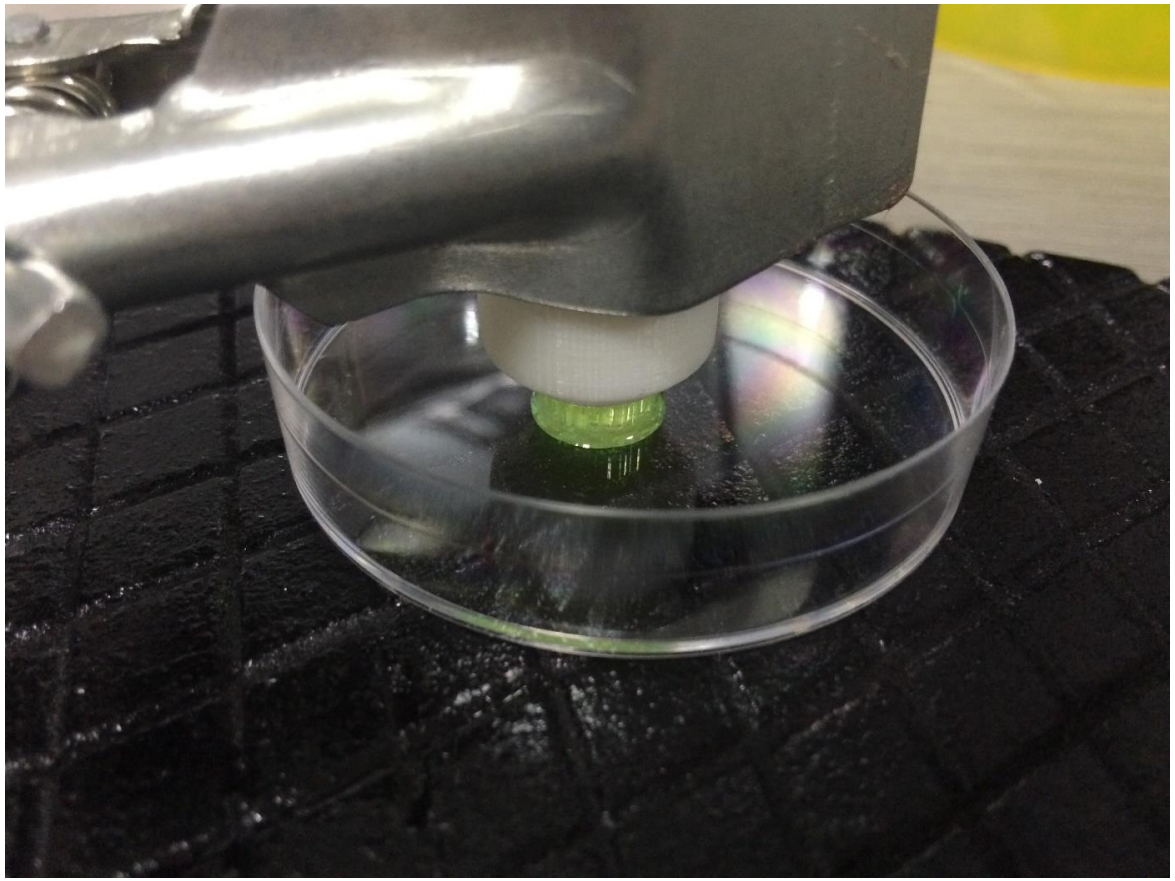
Cosmic Ray is mainly muon in sea level. For low energy muon, it's hard to get shower when get through lead. (The lead may absorb electron and photon in air.)

Usage Optical Cement

Optical cement Part A and B, and the noodle tube



Mix three parts A with one part B.



Holder is made by 3D printer.

The mixed cement is still very ‘smooth’, hard to fix even after two hours.