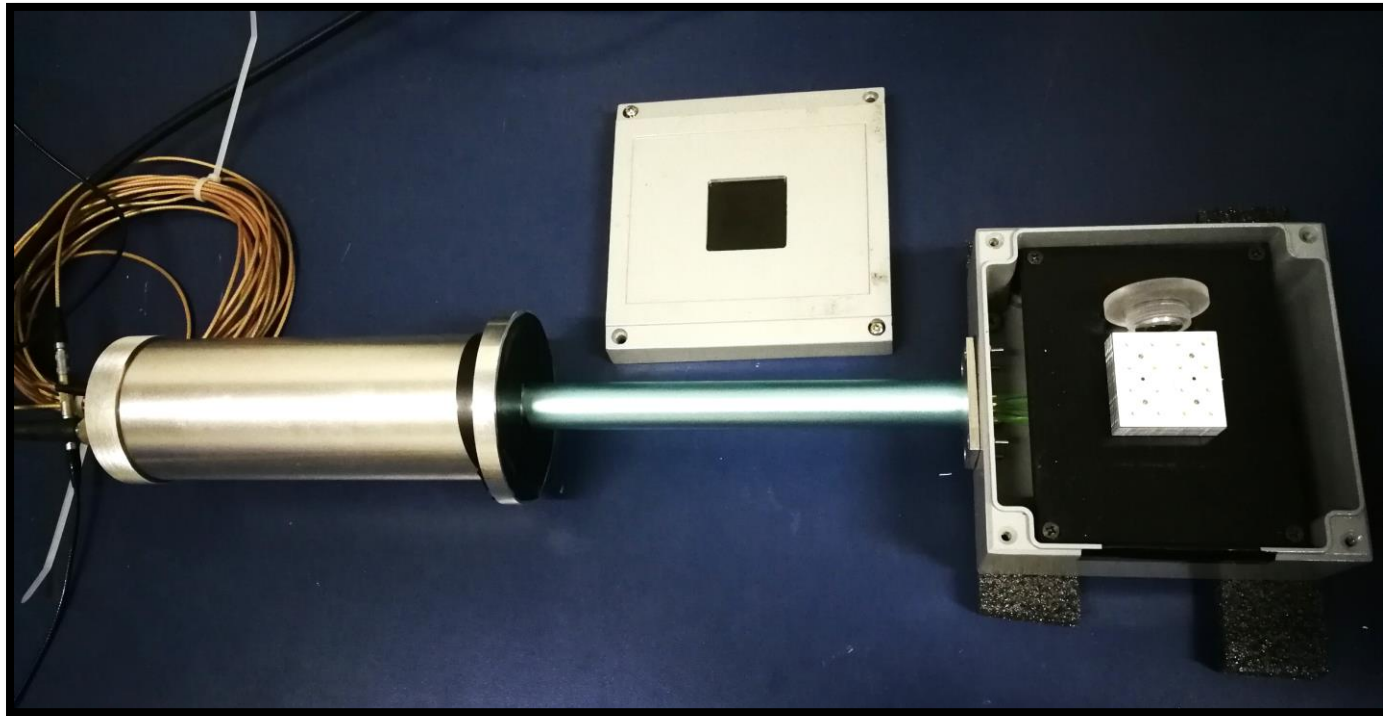
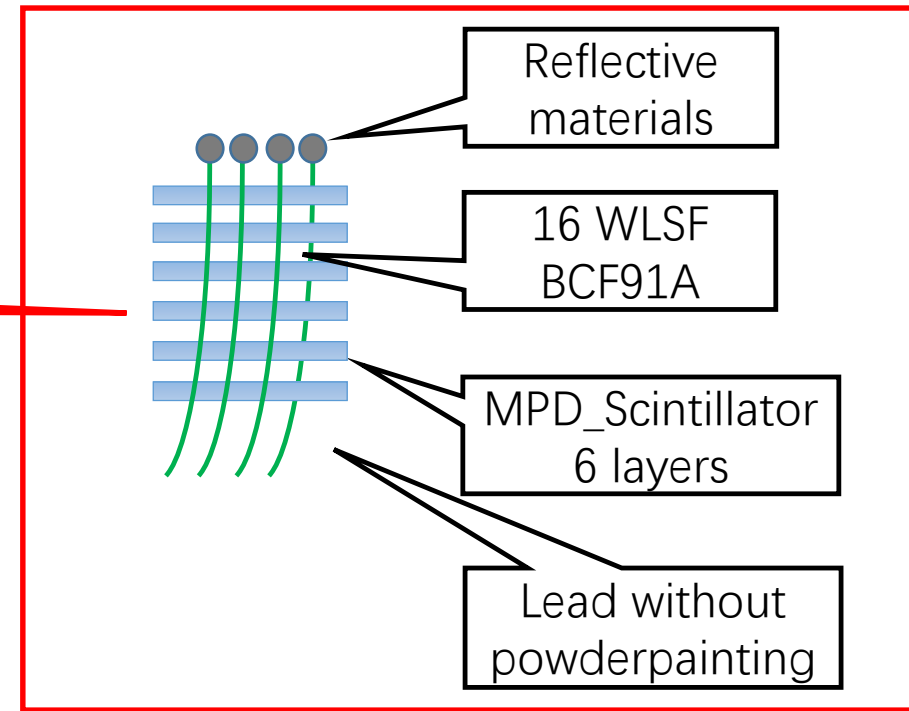
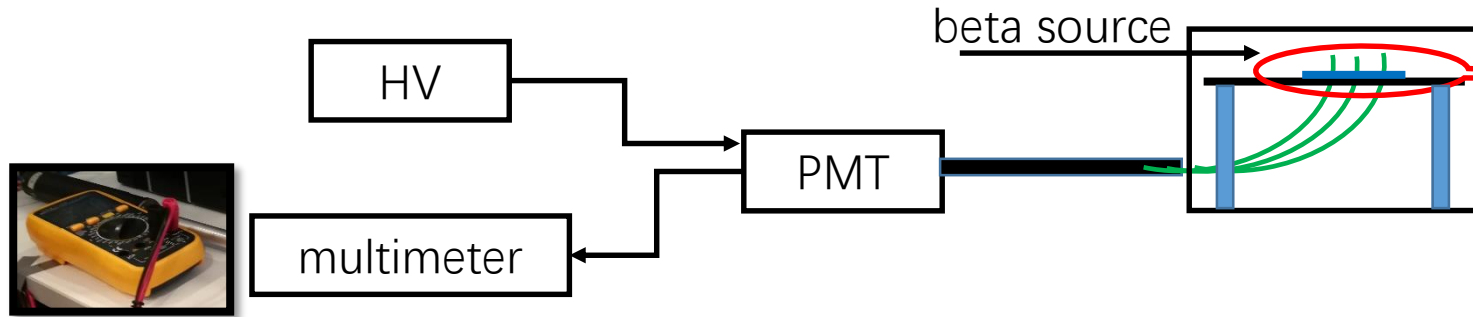


fiber reflectivity test

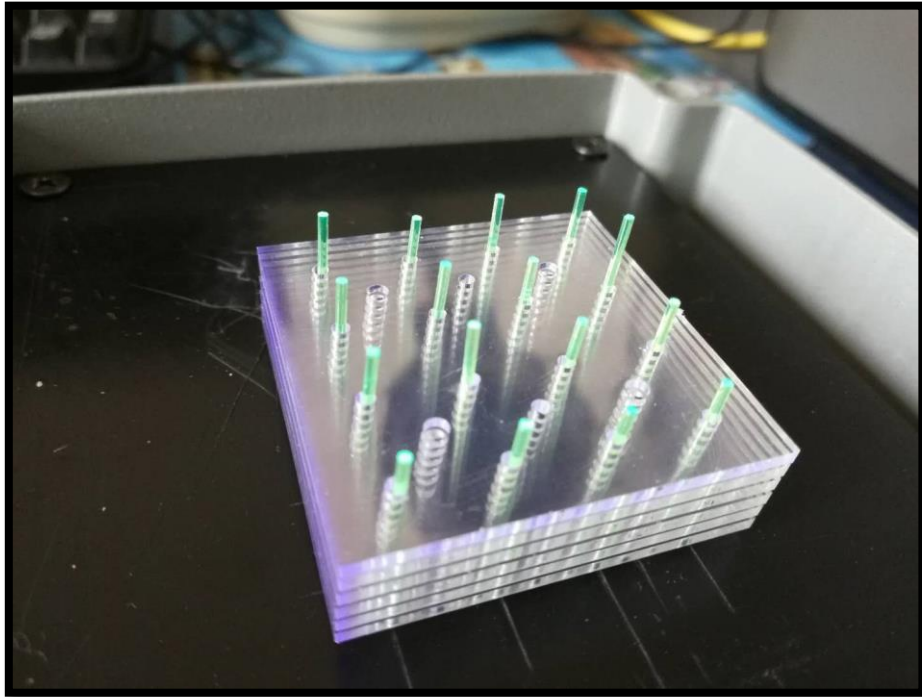
Chendi Shen

2018.10.18

Test setup



Position of Fibers vs. Light yield

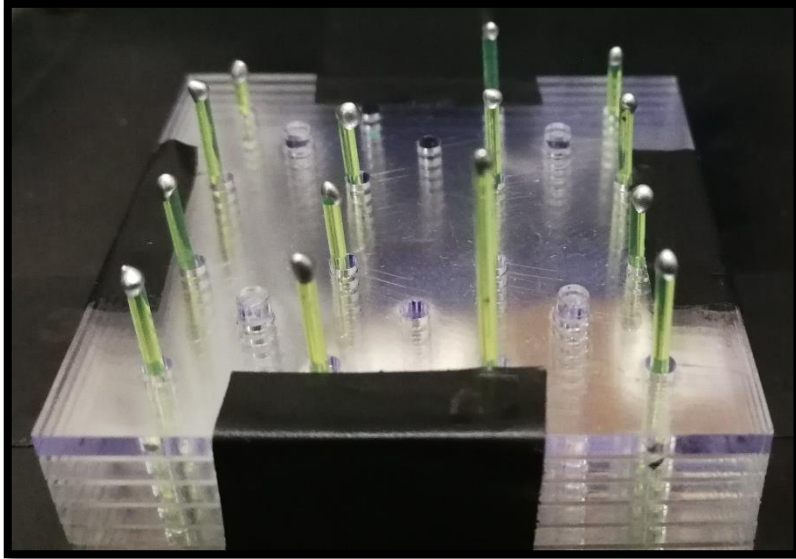


position	Voltage (mV)
The fiber slightly exposes the scintillator	38.5
The fiber is exposed to the scintillator 3mm	39
The fiber exposes the scintillator to the greatest extent (~1cm)	41

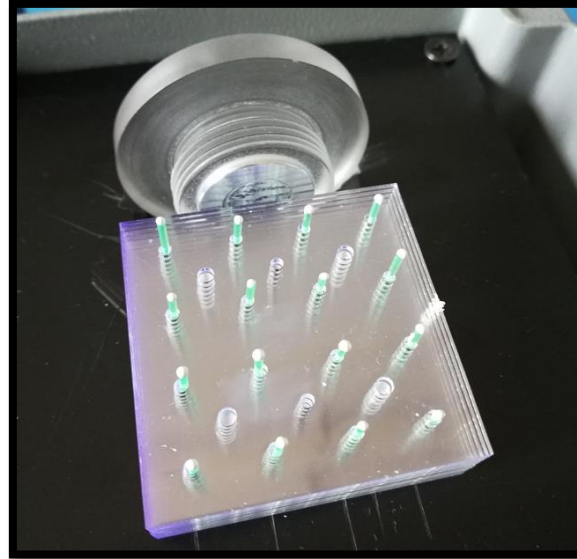
The results show that the slight change in position of the fibers has little effect on the experiment.

Test result

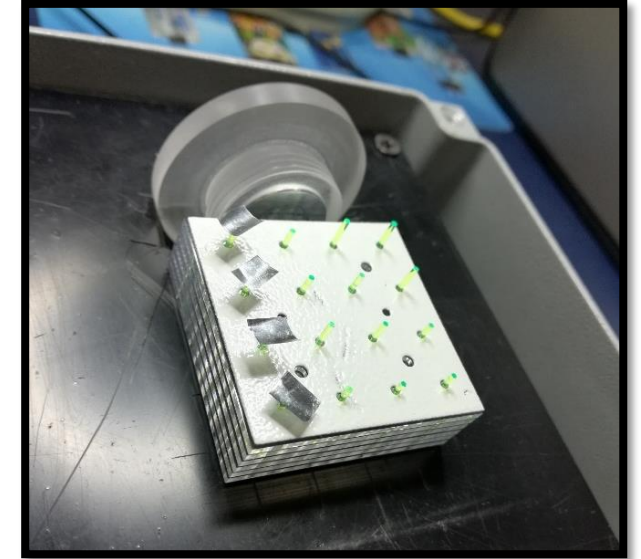
Silver ink: Silver Shine 415001
6 scintillator



TiO₂ + Epoxy Resin
6 scintillator



Silver tape
6 scintillator + 1 powder lead



No Source	Source	Voltage (mV)
Without ink		3
With ink		3
	Without ink	45.5
	With ink	55 (+21%)

No Source	Source	Voltage (mV)
Without TiO ₂		3
With TiO ₂		3.5
	Without TiO ₂	45
	With TiO ₂	63 (+42%)

No Source	Source	Voltage (mV)
Without tape		3
With tape		3
	Without tape	45
	With 4 tapes	50.5 (+13%)
	With 8 tapes	59 (+33%)
	With 12 tapes	66 (+50%)
	With 16 tapes	72 (+64%)

Next to do

- *Continue to find different materials for fiber reflectivity test.*
- *If silver tape is adopted, we must look for a fixed method.*

By the way, We will look for similar silver tape in China.

- *We will test the reflective materials used to wrap the module with the same setup, such as Tyvek paper, silver paper, TiO_2 +glue*
- *After that, we will assemble other 2 modules (THU3 and THU4).*