

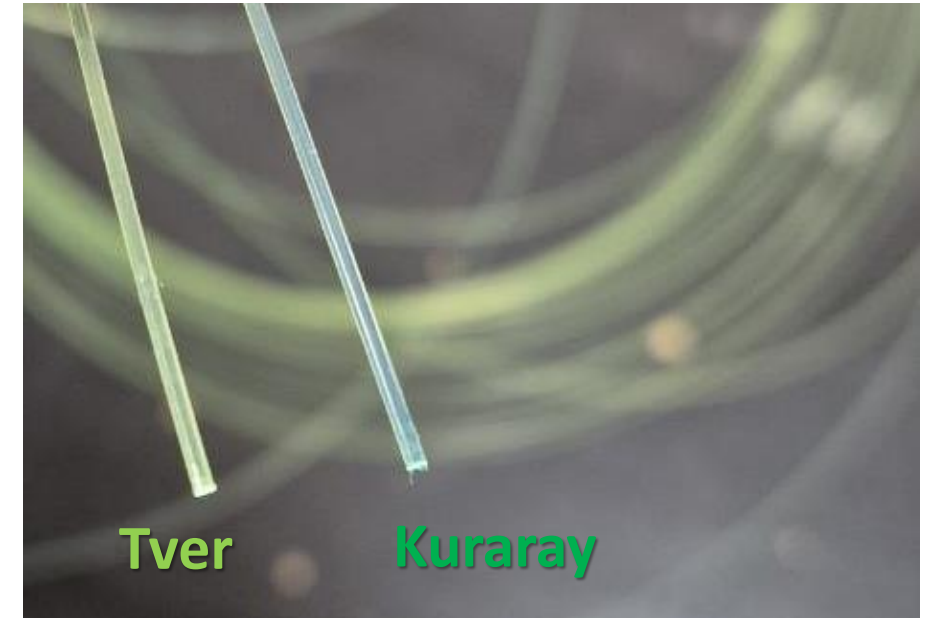
Tests with new Tver WLS

F. Dubinin

Materials & equipment

Single cladding shifters:

- ❖ Tver fiber with OSL8 dopant, cladding – fluoropolymer, $\varnothing 1\text{mm}$
- ❖ Kuraray Y11, $\varnothing 1\text{mm}$ – as reference
- ✓ polished with sandpaper of 1000 – 7000 greediness



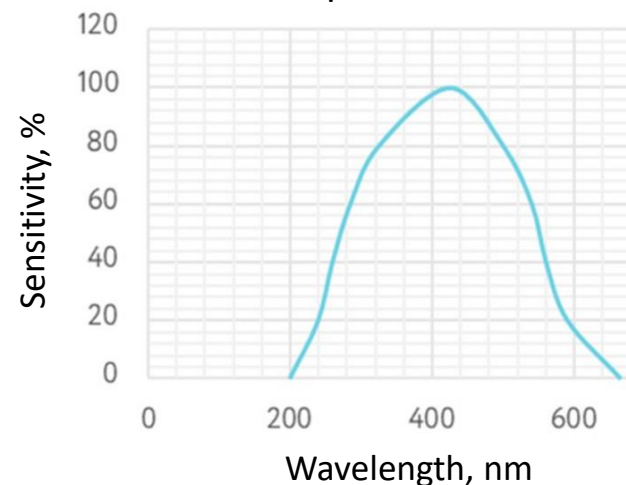
LED in pulse mode

- $t_p = 15 \text{ ns}$ (from pulse generator)
- LED wavelength = 400 nm

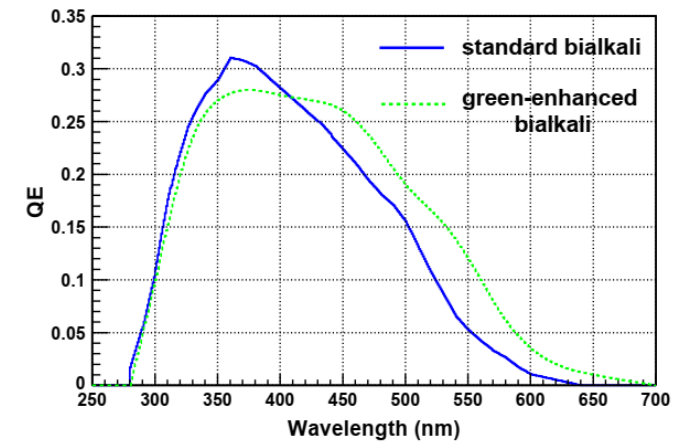
Photodetector – PMT-130 (-1500V)

Pulse analyzer – Oscilloscope Lecroy 620Zi

Sb-K-Cs photocathode

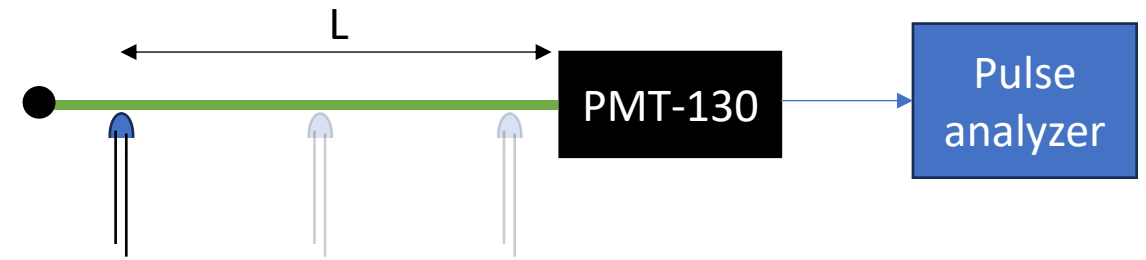
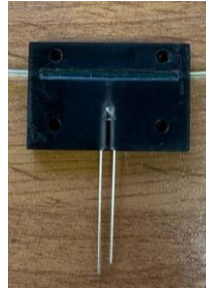


Bialkali photocathode

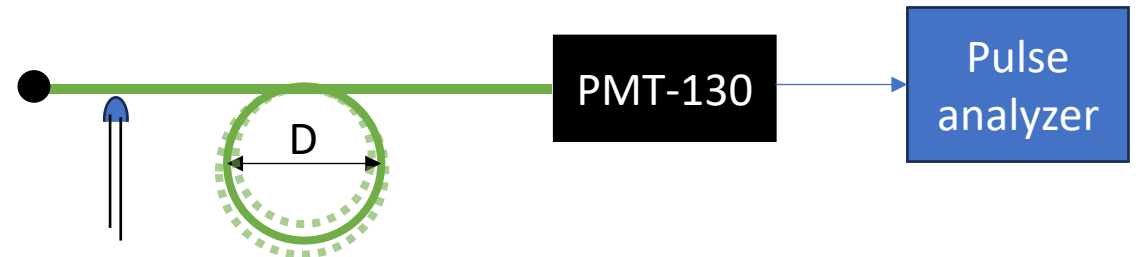


Experimental setups

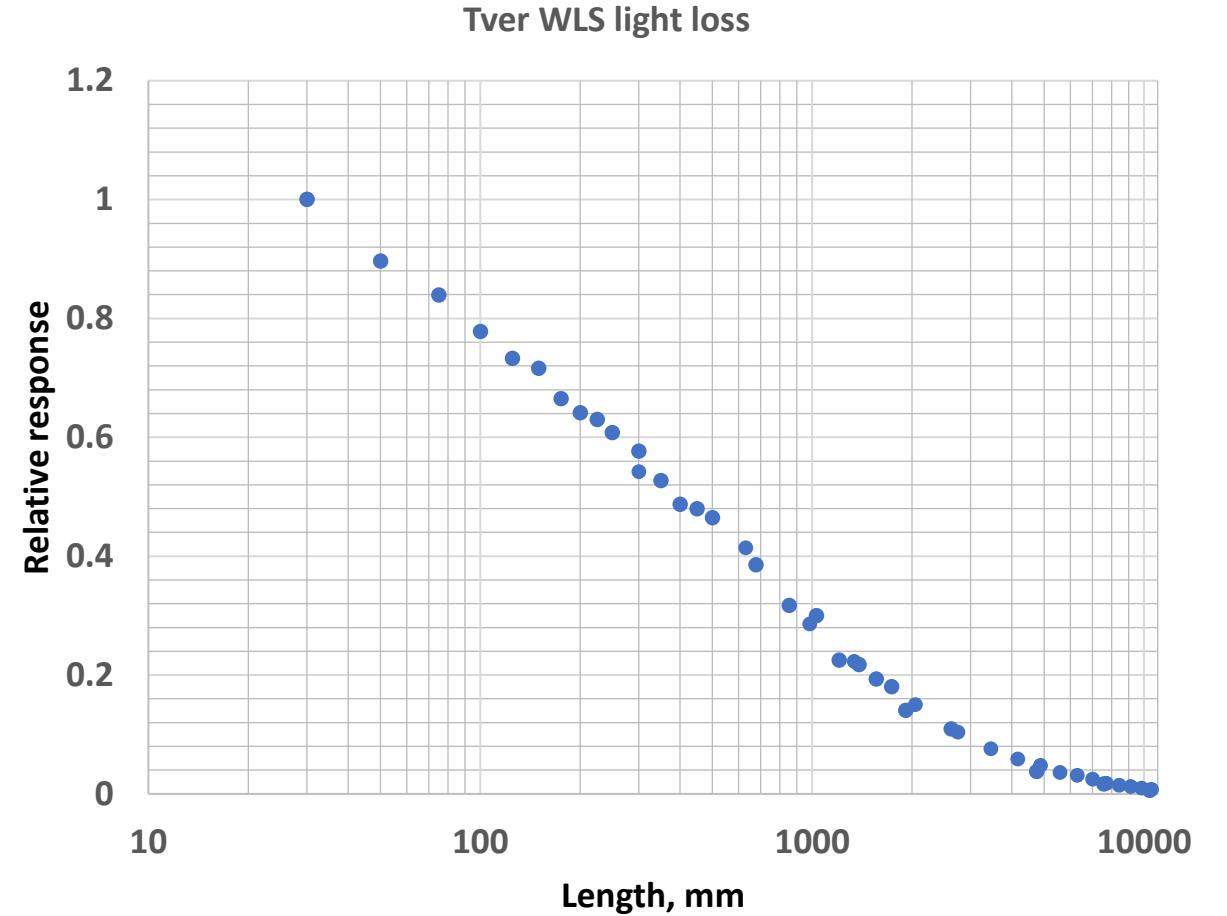
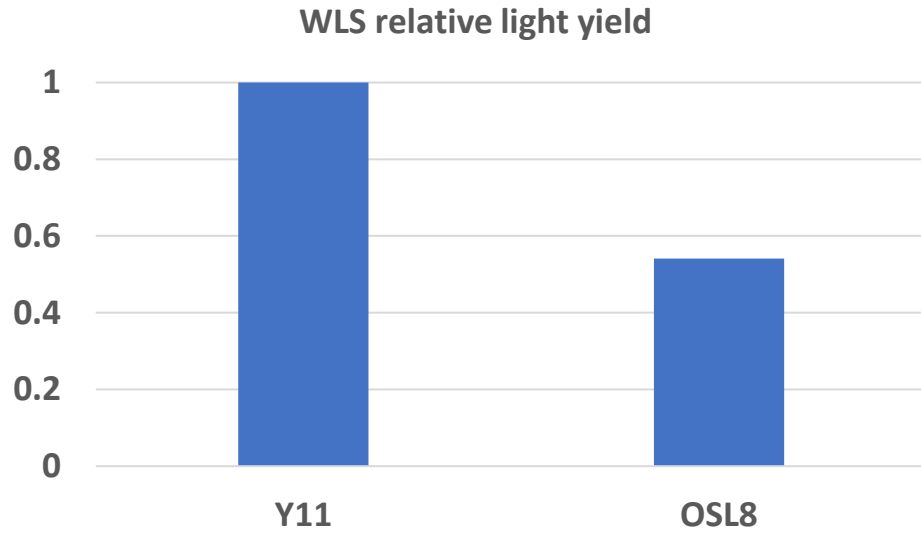
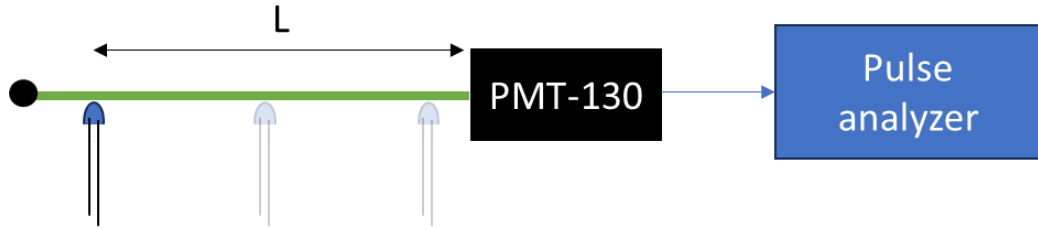
Relative light absorption
&
Light yield



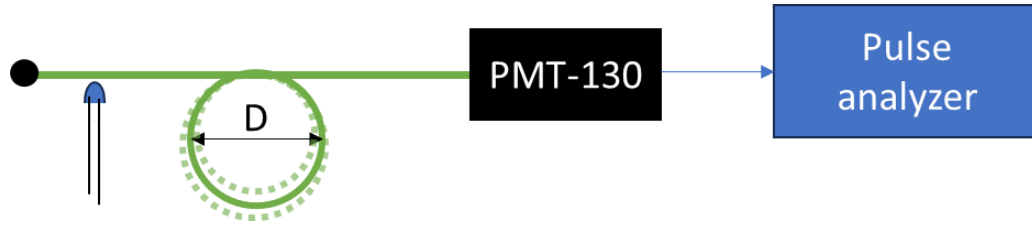
Bending loss measurement



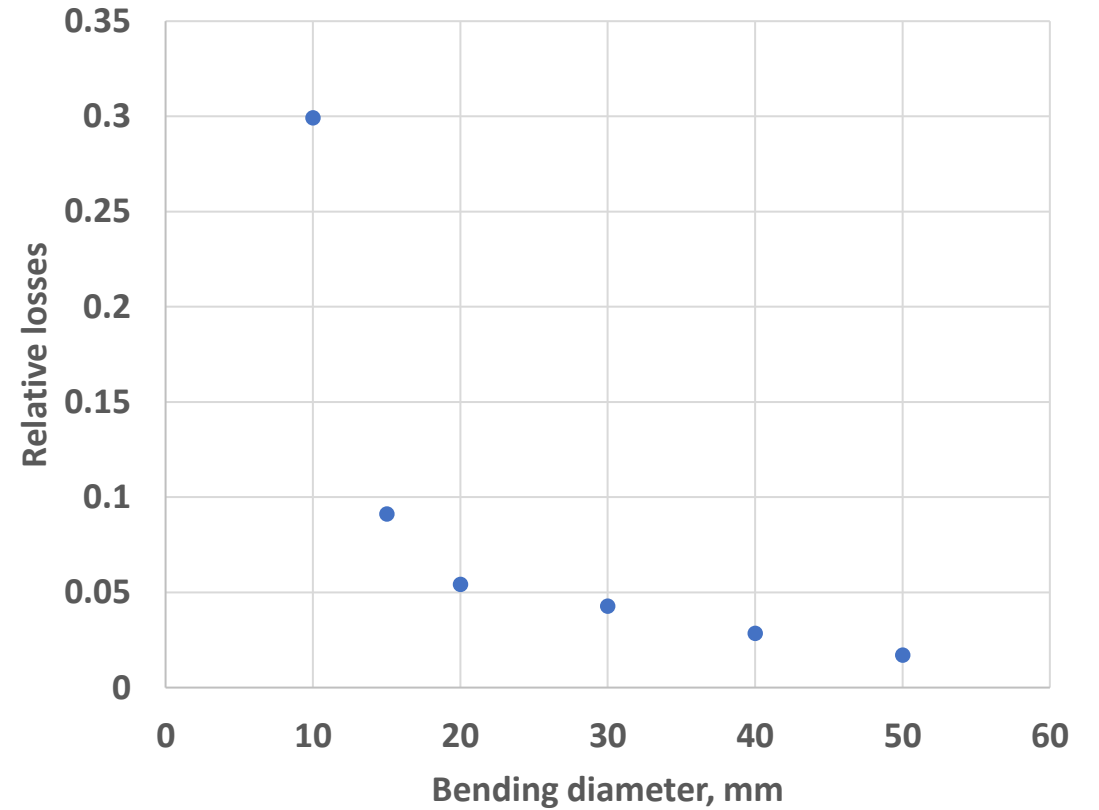
Relative light absorption



Bending losses



- Single loop
- Light path length = 130 cm



Summary

	Y11, Ø1mm	BCF-92, Ø1mm	Tver OSL8, Ø1mm
Light yield	1		0.54
Bending loss @ D30mm	10%	8%	4%
Light absorption @ 1m	60%	50%	70%
Trailing edge, ns	24	12	19