OLYMPUS

STATUS OF TOF FLASH SYSTEM AND TESTS

- GMS LASER SYSTEM HISTORY
- NEW LED SYSTEMS AND PROPERTIES
- COUNTER TEST RESULTS
- CONCLUSION

GMS LASER SYSTEM HISTORY

- Two laser drives are suggested to use for GMS and timing testing of TOF counters;
- After arrival to DESY for one laser has been recognized cartridge absence, for the second one – HV module absence.

- Due to hard time schedule a new LED based option has been chosen – it is slower but easier to realize and cheaper!
- Fibers were absent too! New fibers have been ordered and purchased.

REQUIREMENRS TO LED

- **Brightness - >3000 mCd**
- **Wave length – close to 425 nm**
- **Lightening Acceptance 20^{o}**

The best LED with required parameters was type 7104 produced by KingBright.

LED DRIVE R&D

First designs (copied from DESY, Mainz and LANL) were unsuccessful –enough short but not enough powerful signal provides only ~50 mV amplitude from PMT.

- **Two new devices have been designed, fabricated and tested by Yorck Holler and Henrik Vardanyan.**
- **# 1 – rise time ~10 ns, amplitude from PMT ~1.2 V;**
- **# 2 – rise time ~8 ns, amplitude from PMT (with the same fiber) ~0.8 V**

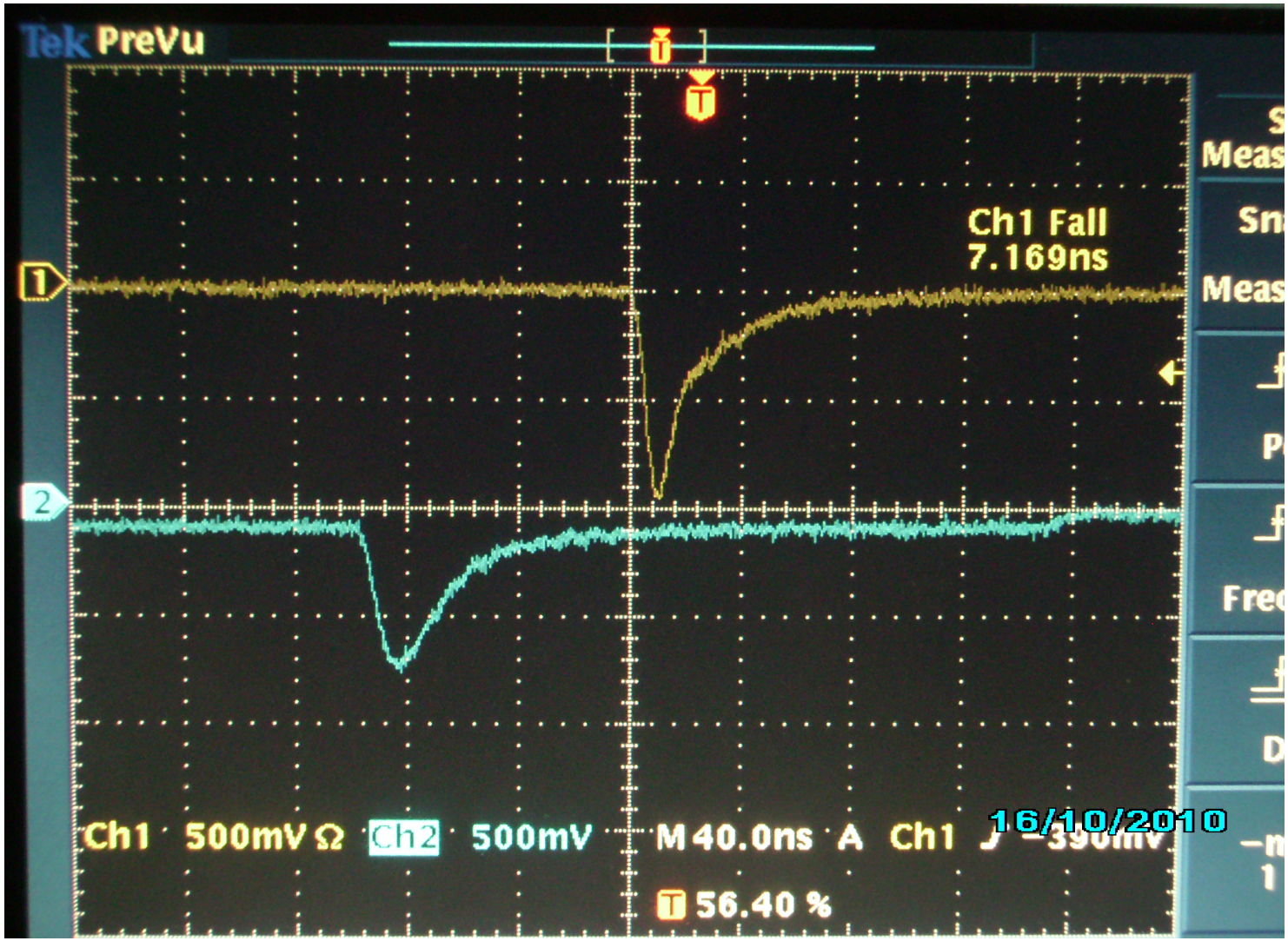
⟶ BOTH ARE OK!!!

LED MONITOR

Individual channel for LED flash measurement using 2 different types of PIN diodes –

S1223(30 MHz)

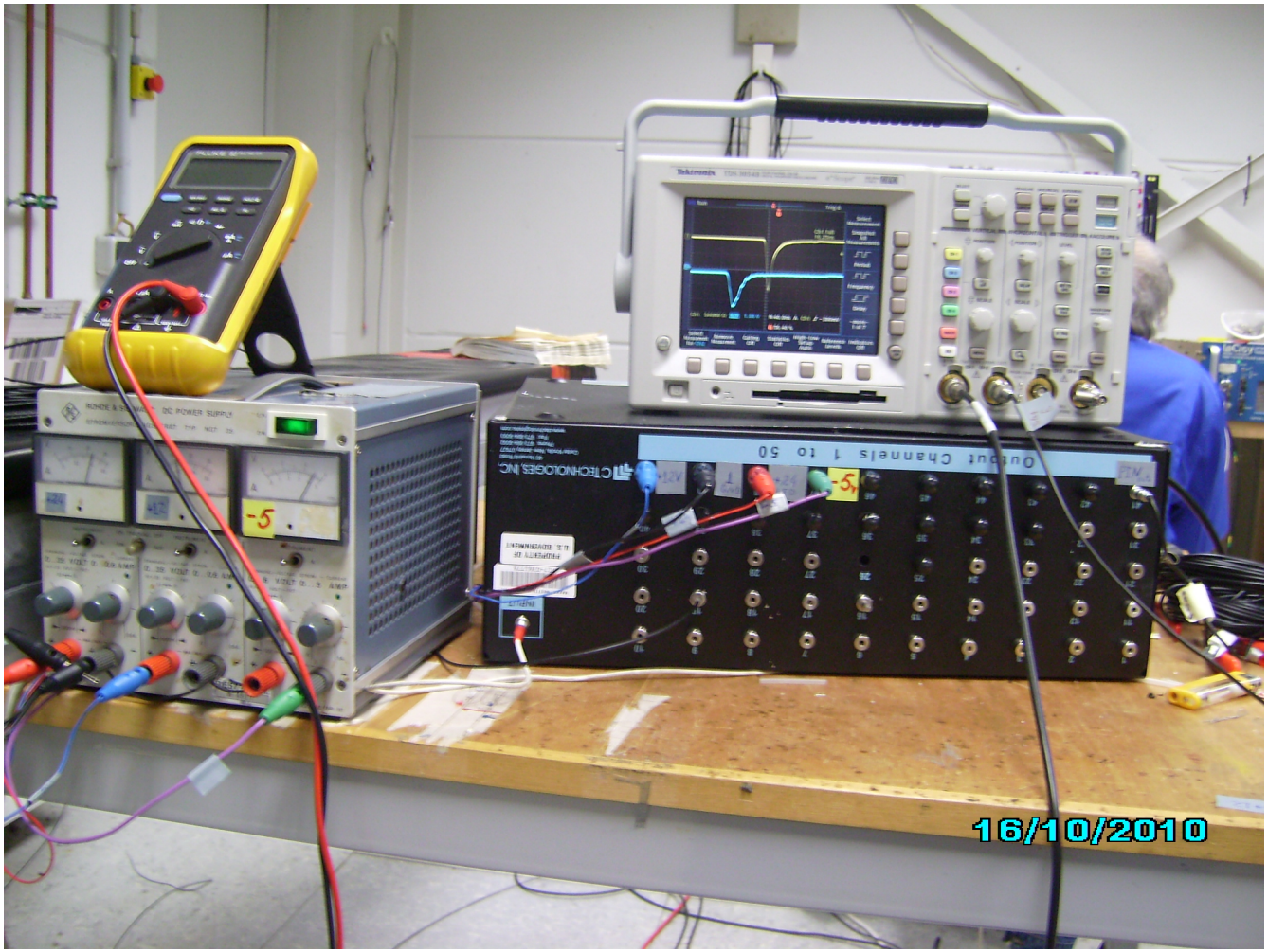
S5971(100MHz)

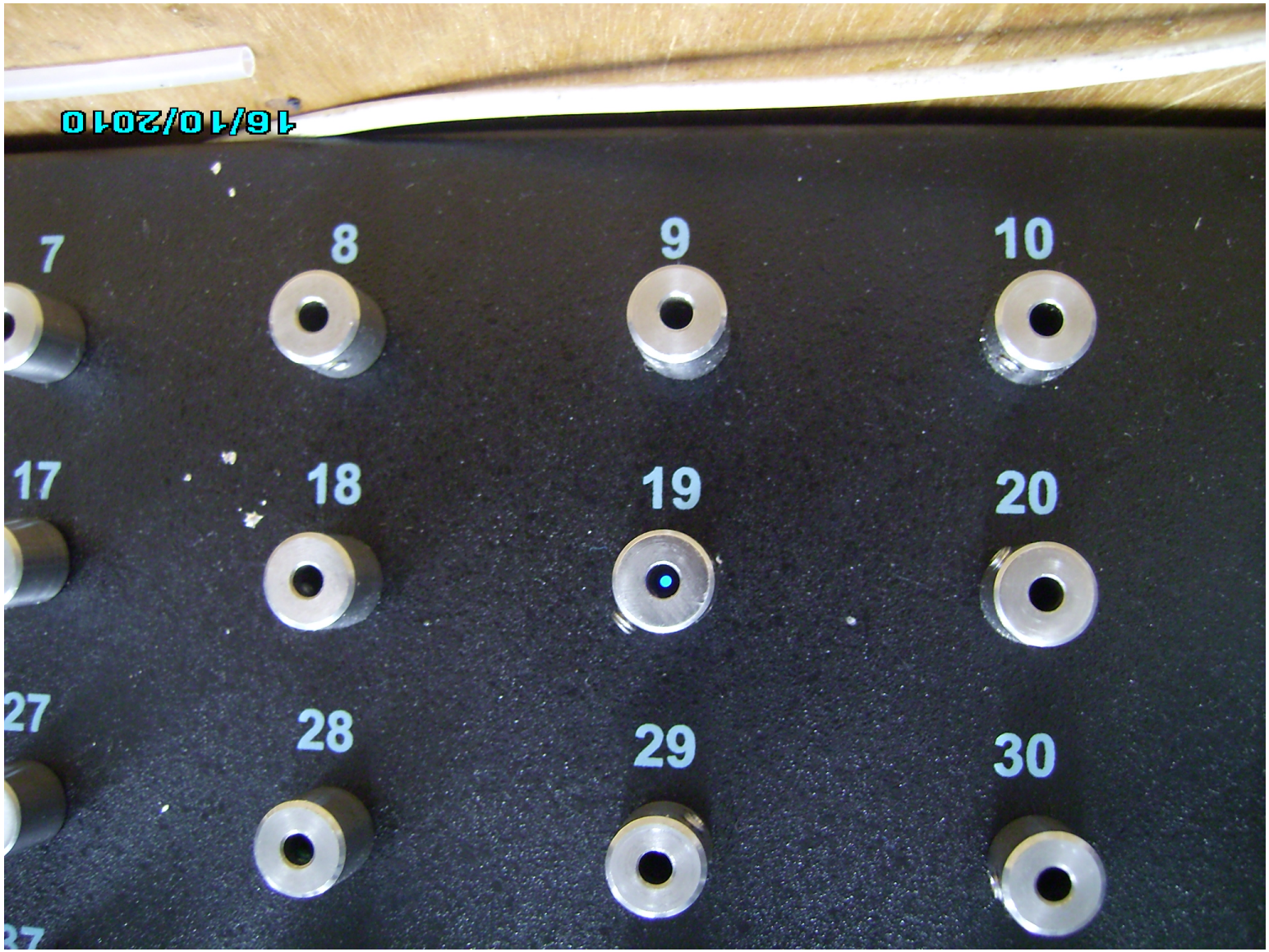


Top yellow pulse – from PMT
Bottom blue pulse – from PIN diode

A new bundle of 37 fibers has been designed and constructed

The light distributor previously been used on laser based monitoring system has been tuned for LED based one.

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RESUME BY LED BASED FLASH MONITOR SYSTEM

Thanks to

York Holler (DESY)

and

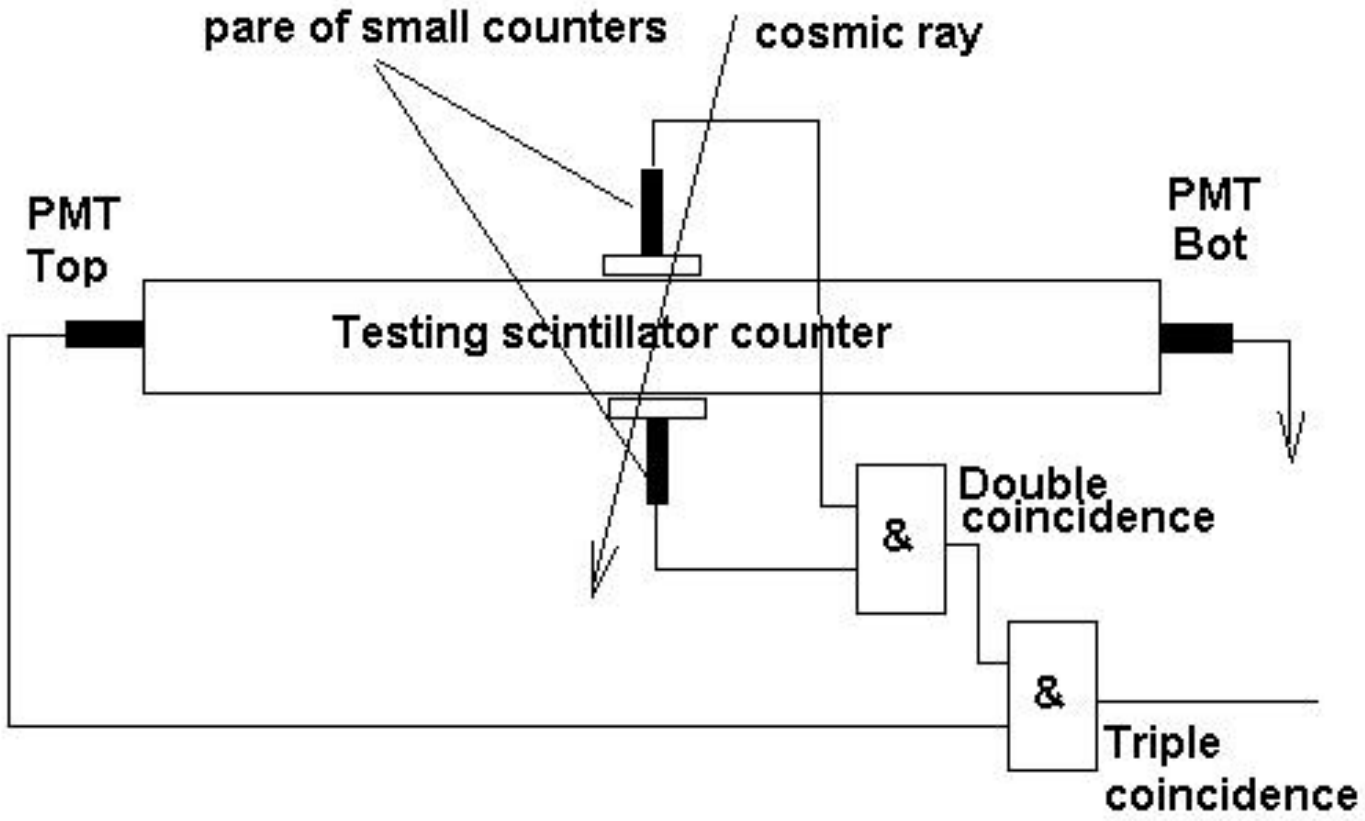
Henrik Vardanyan (Yerevan)

prototypes of a new system of LED based flash system are completely ready to use!

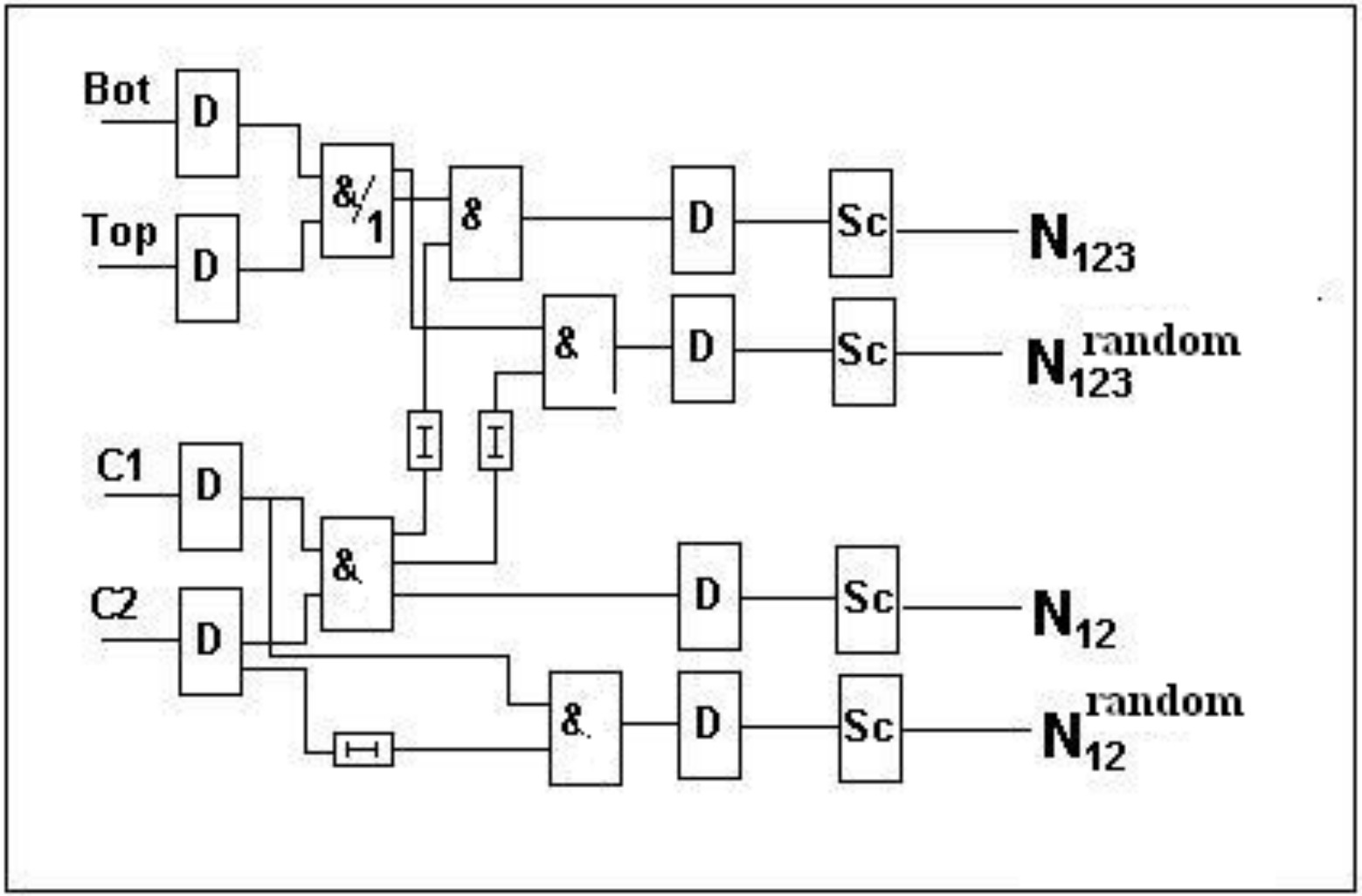
COUNTERS TEST

***The block-diagram of counters efficiency measurement has been designed and optimized by Vlad and Garry (Yerevan) and then the real measurements (with participation also by Maru) on cosmic rays has been performed*.**

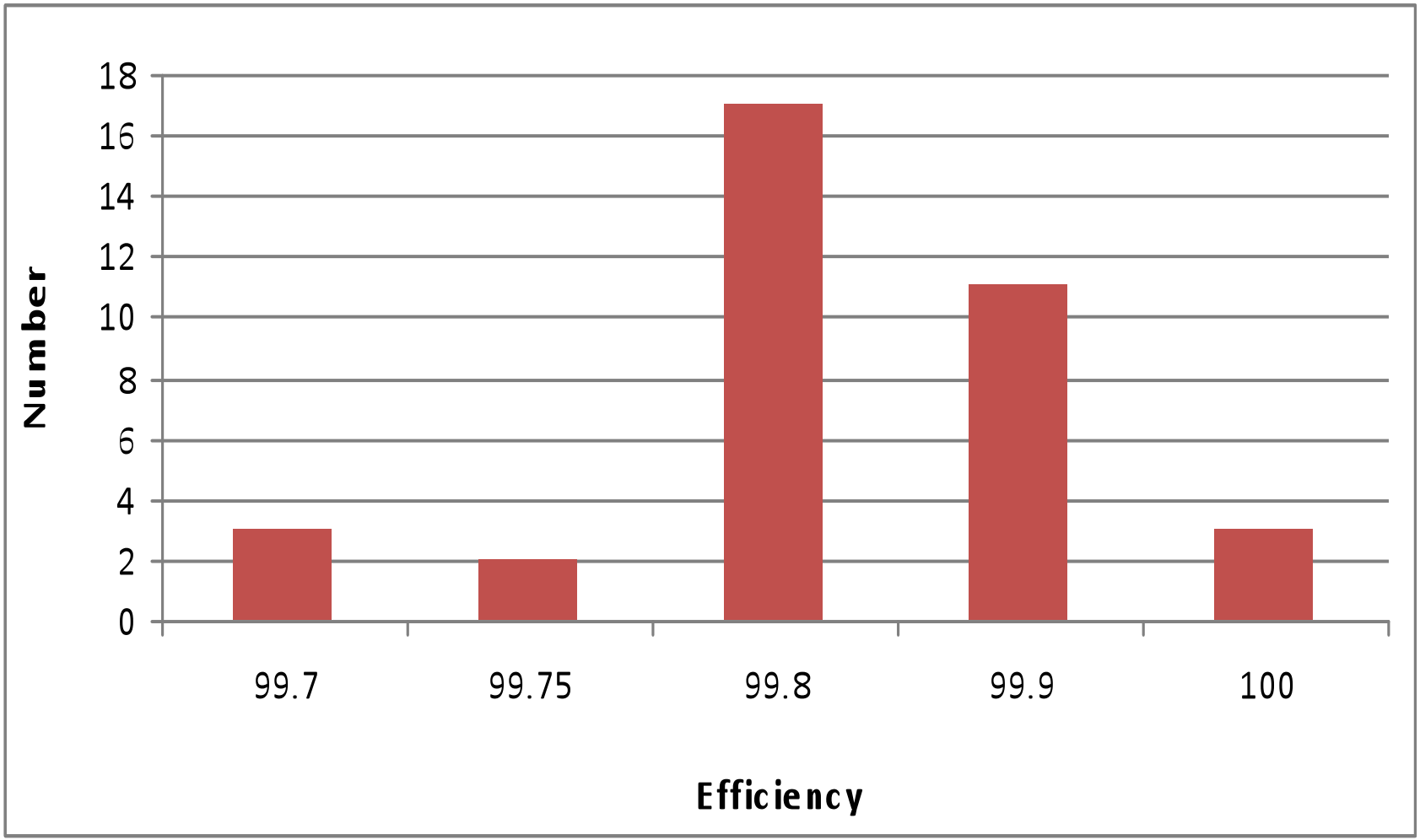
Diagram of efficiency measurement



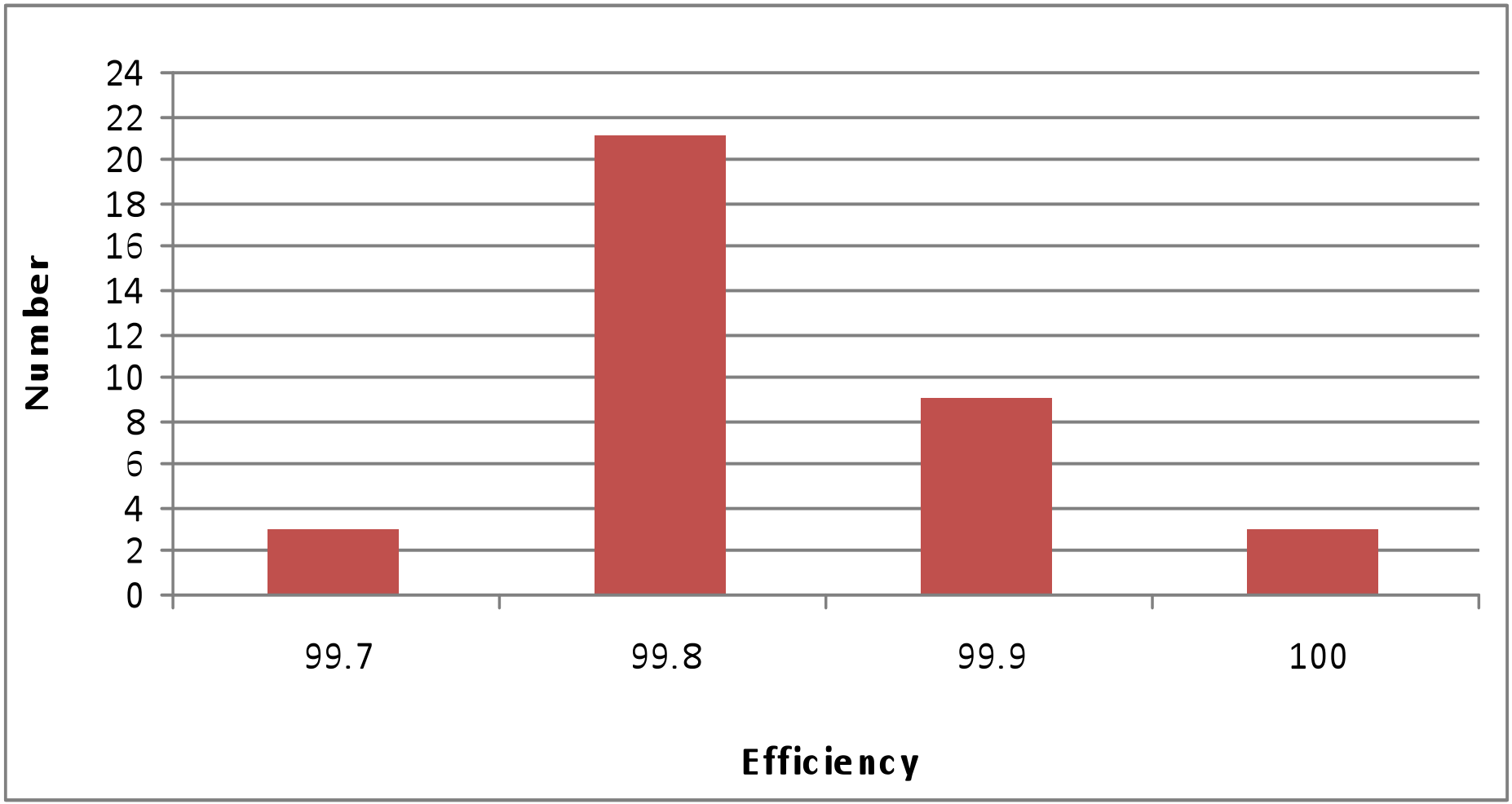
Electronic block-diagram



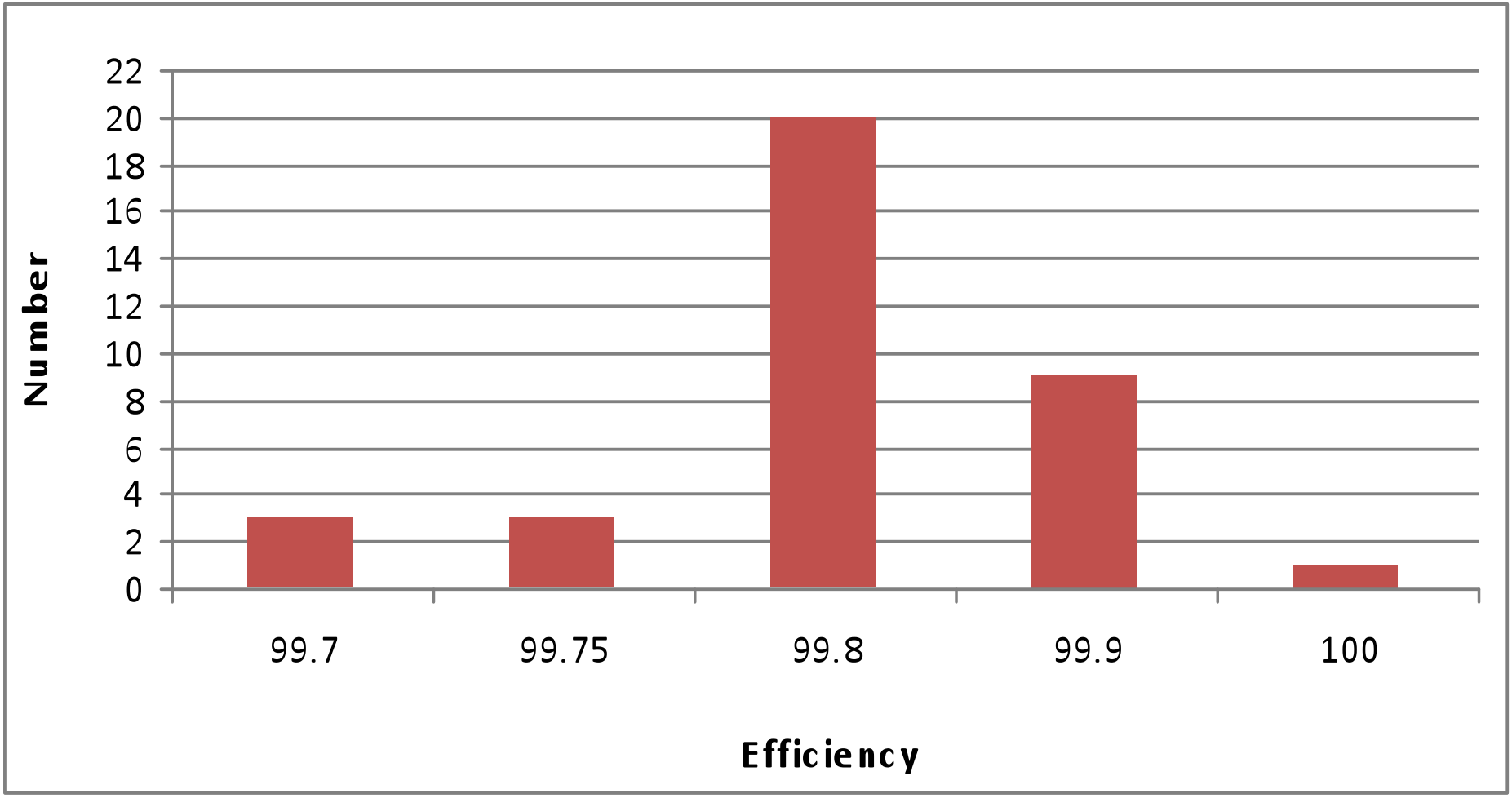
Efficiency distribution BOT



Efficiency distribution TOP



Efficiency distribution FULL



RESUME

All scintillator counters have been tested and their registration efficiency has been measured under cosmic rays. Distribution shows high level of efficiency – most part of counters has efficiency $\varepsilon \geq 99.8$ %.