



LED notched fibre distributing system

Calibration system for SiPM

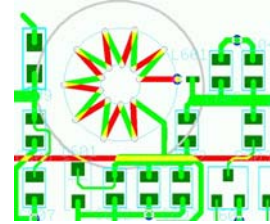
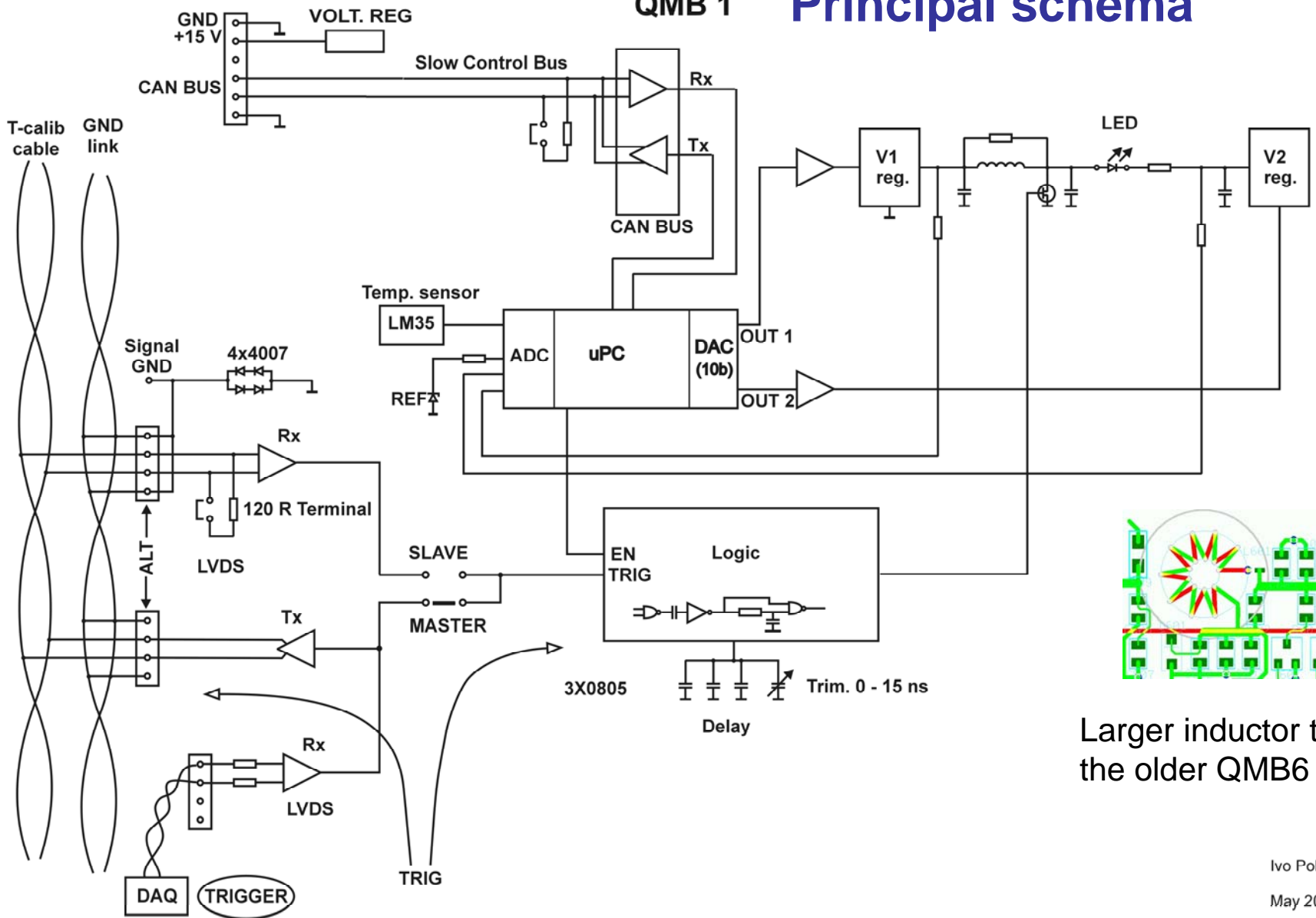
Ivo Polák, on behalf prague's group
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1. QMB1 performance
2. QMB1 with Toroidal inductor at PCB
3. Trigger distribution
4. Notched fibre light distribution systems 3x24
5. Resume

QMB1

- Quasi resonant Main Board
 - Modular system, 1 LED per board
 - DAQ + CANbus control, or stand-alone mode
 - LVDS Trigger distribution system
 - Variable amplitude, zero to maximum smooth
 - Pulse width fixed to abt. 5ns (UV or blue LED)
 - Voltages and temperature monitor
 - Width of PCB 30mm, depth TBD {100 to 150mm}

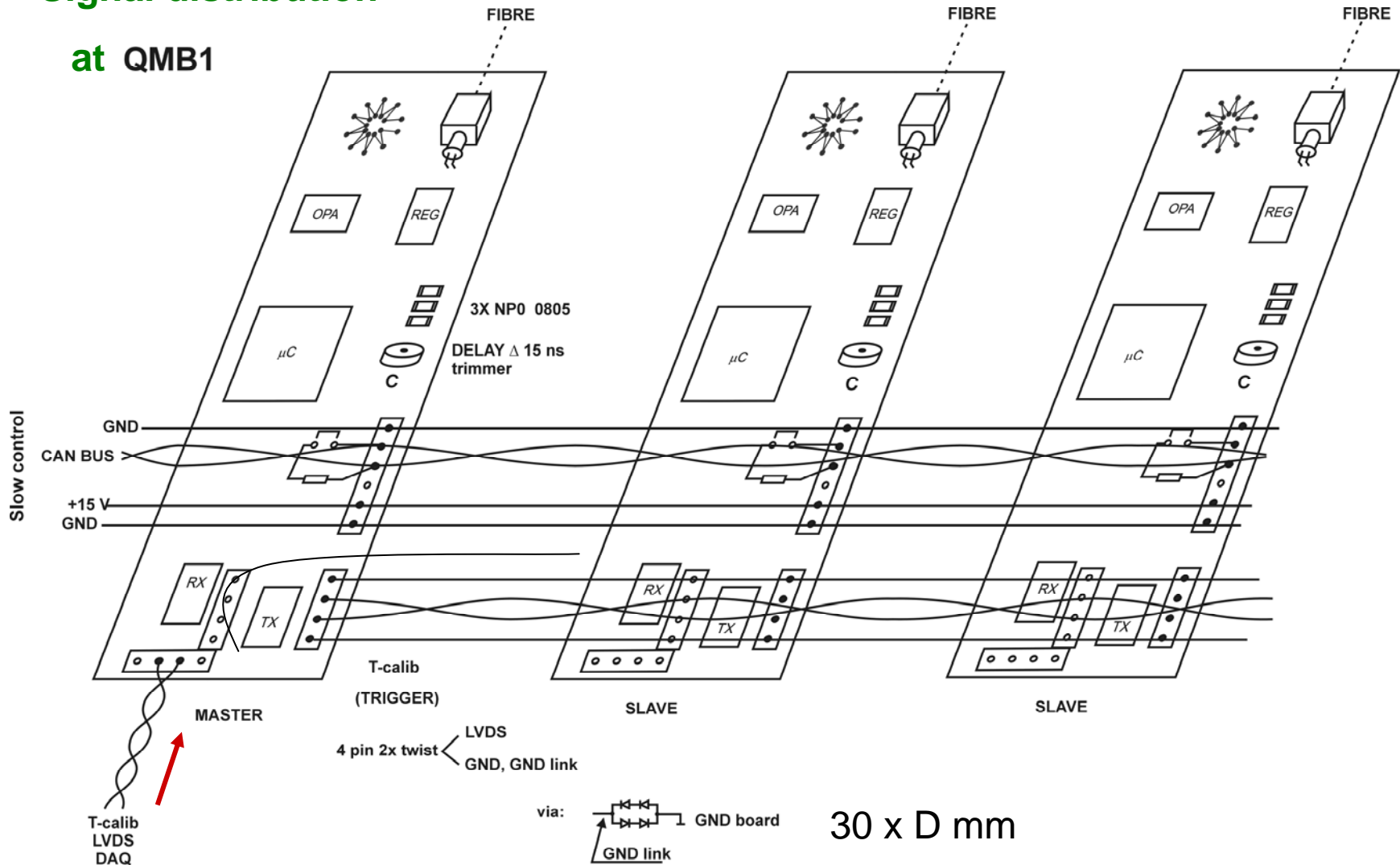
QMB 1 Principal schema



Larger inductor than the older QMB6

Signal distribution

at QMB1



Two flat cables,
Twisted pair for Trigger

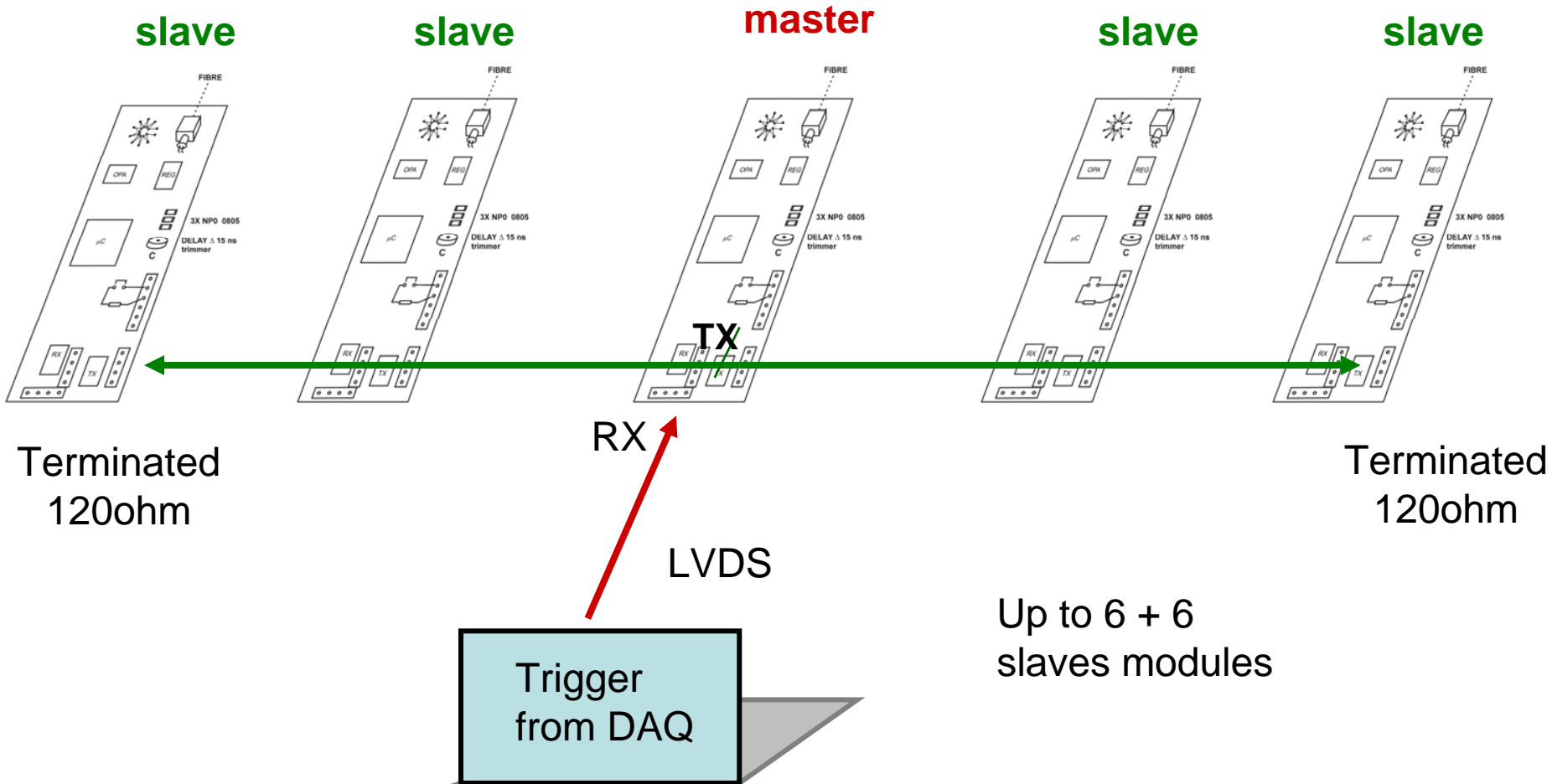
30 x D mm

D { 100 to 150 mm } TBD

Ivo Polák

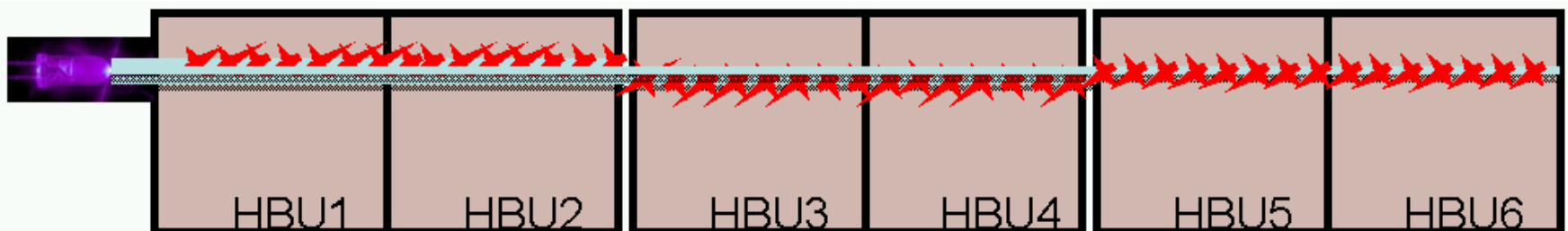
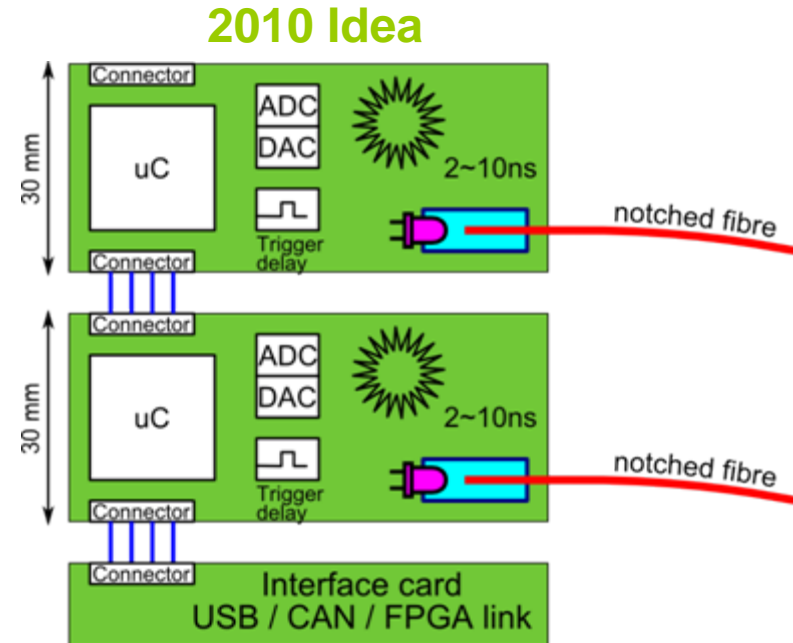
May 2011

TRIGGER (T-calib) LVDS distribution to QMB1

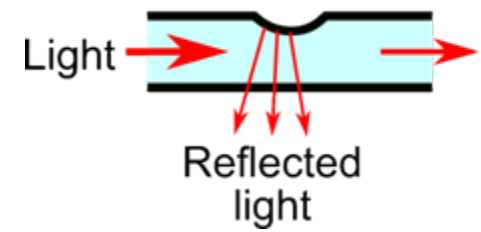


work at 2011

- **QMB1 (1-channel LED driver):**
 - Fixed
 - Topology
 - Communicating bus (CAN)
 - CPU (Atmel AVR)
 - Trigger distribution (LVDS)
 - Trigger delay can be tuned by C trimmer (~10ns)
 - Free to adjust: **will be discussed at DESY in July calib meeting**
 - Mounting holes (fixation to support/HBU)
 - Fibre(LED) position
- Set of **notched fibers**, **semiautomat machine** under development
 - Set: 3*fibre with 24 notches, creating a line of 72 notches.
 - 3 sets will be delivered



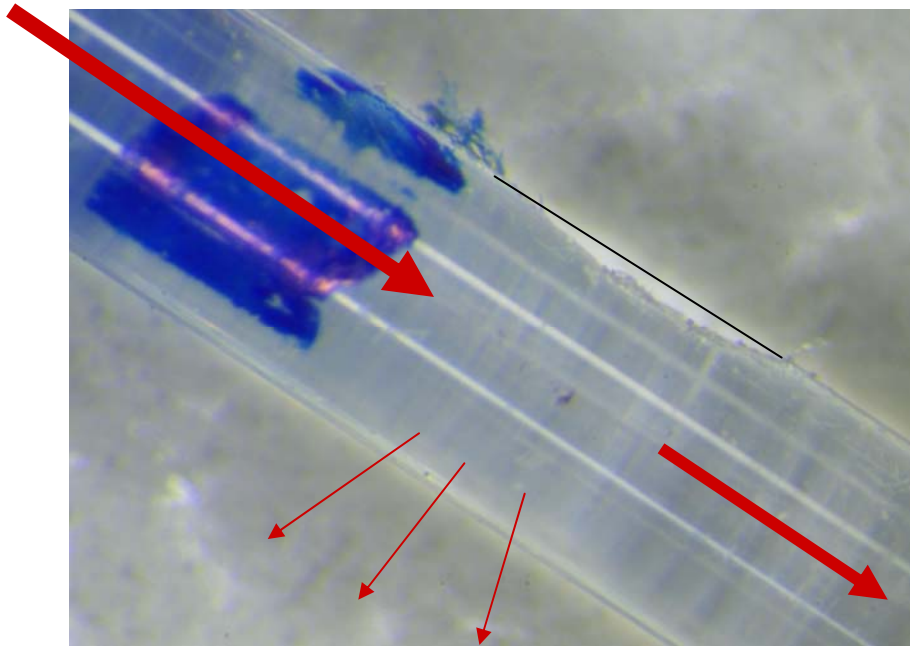
Notches at one long fibre (24 notches total)



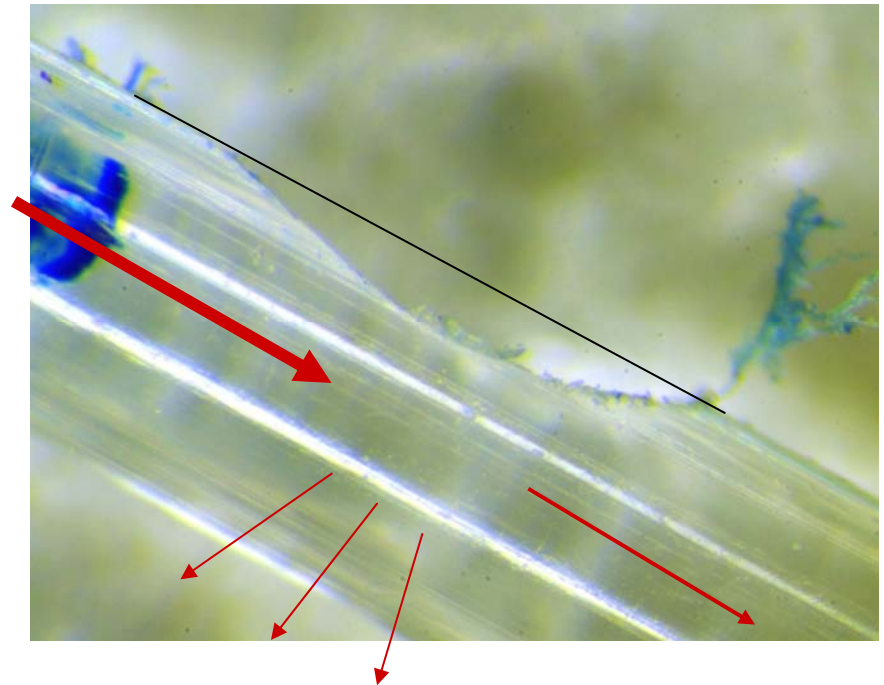
LED side

Notch # 4

Notch # 24 last one, biggest

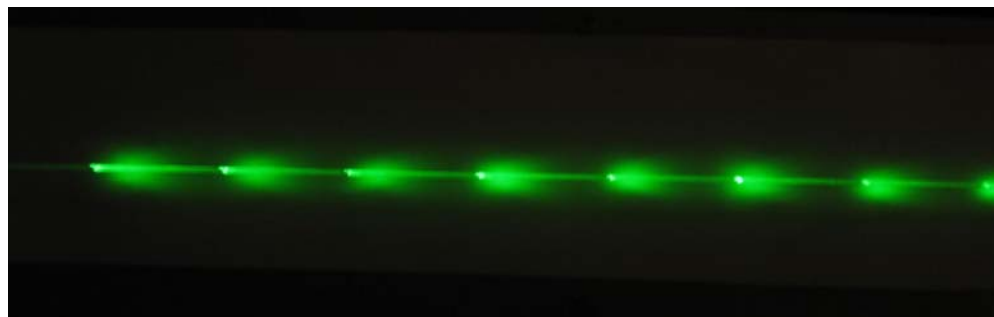
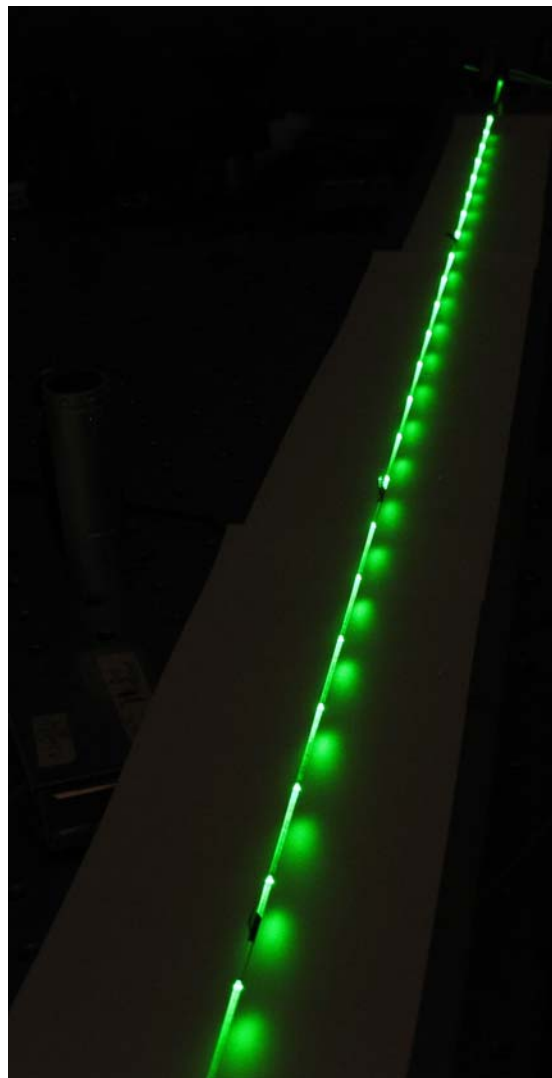


Light coupled from tap



Taken on microscope with zoom ~50

Notched fibre illuminated by green laser pointer



2011 - May - 20

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Resume

- QMB1 is in PCB design stage
 - Exact position of PCB holes to be defined
 - Exact UV-LED position, coupling to fibre to be defined
- QMB1 in hand with fw - expected in autumn
- Notched fibres sets can be expected in autumn
- semiautomat machine is under development