GEM test Update

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for the Weizmann Group

Some problems faced during the production with second batch of GEMS (#32 onwards).

---- 6 GEMS were glued --- but all of them showed discharges in Ar/CO2 at above 450 V.
One of them (GEM #34) looked alright, but it tripped once during the pad-gain measurement.

---- All these GEMS passed the intermediate checks during the stretching-gluing operations, where the leakage current tests are performed at three stages.

---- this being observed in the second batch, suspicion arose whether everything was O.K. with the second batch of GEM foils.

---- Reply from CERN was that ---- all GEMS were tested up to 600 V in air 35 % humidity.

---- Gluing of further GEMS was halted to investigate the reasons

---- Cleaned two these GEMS(GEM #36, #34) with water thoroughly.
They were tested at 500 V in air at 50 % R/H. Then carried out the Fe-55 test in Ar/CO2. NOW it showed normal behaviour. No discharges observed.

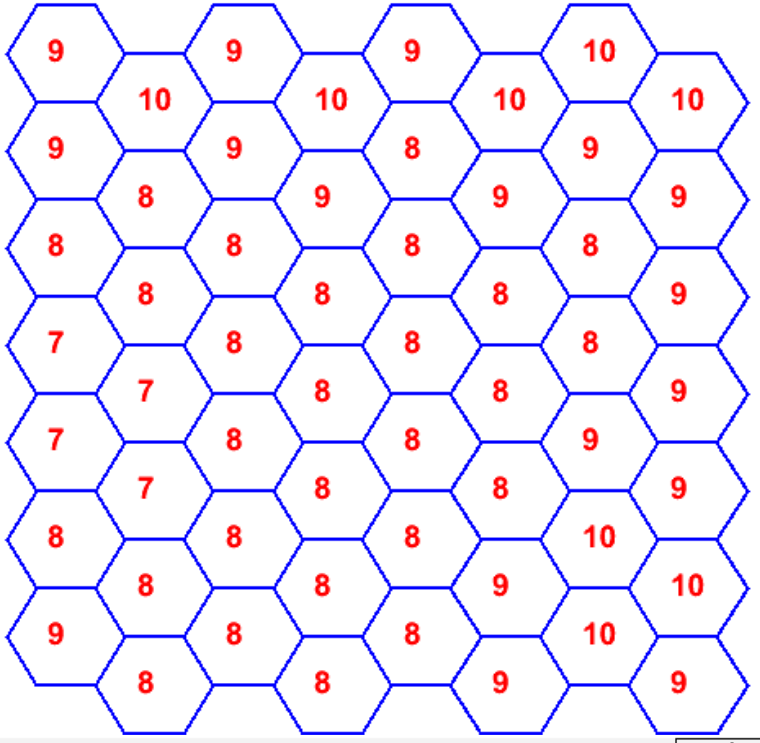
---- The remaining 4 modules from batch 2 will also be water cleaned.

---- Based on these -- some modifications introduced in the intermediate tests performed during the module production:

1. Any new GEM foil will first be tested upto 500 V in air in the clean room, instead of 100 V.

2. After all resistor soldering operations, the prepared module would again be tested at 500 V to ensure that no shorts developed during the course of gluing.

--- The GEM production resumed after a brief gap. Results for the two GEMS from the second batch after water treatment are shown:


9 9 9 10
10 10 10 10
9 9 8 9
8 9 9 9
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8 8 8 10
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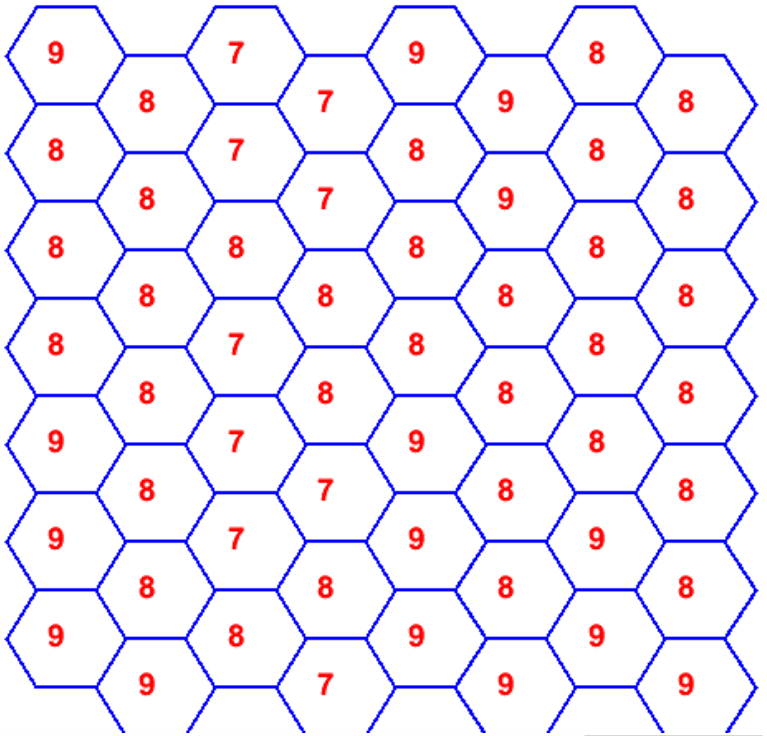
8 8 9 9


9 7 9 8
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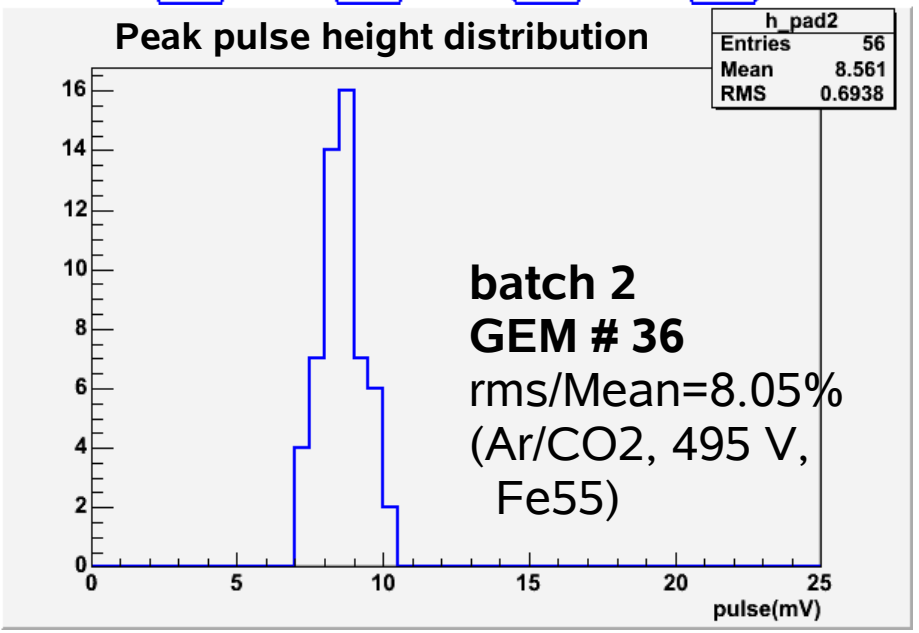
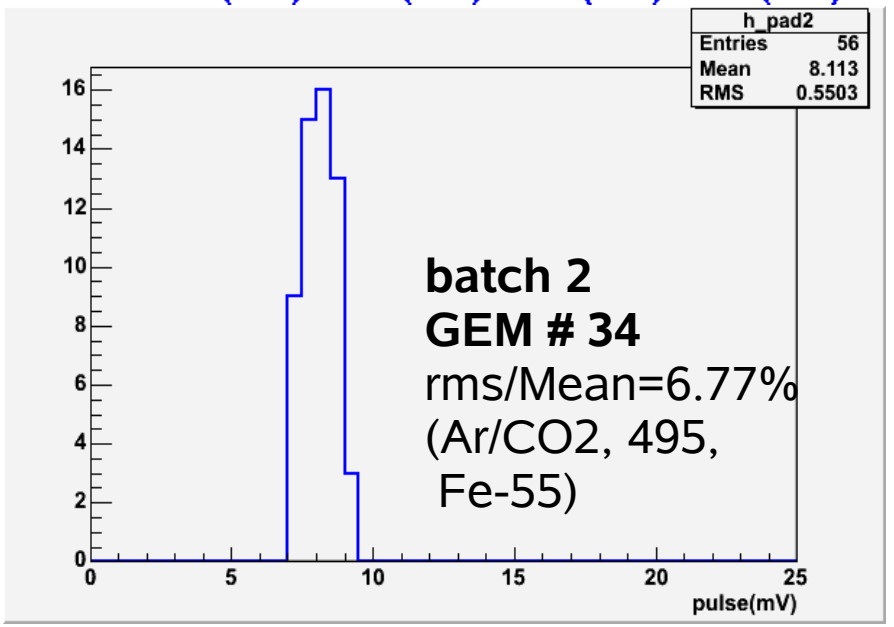

Peak pulse height distribution
h_pad2
Entries 56
Mean 8.561
RMS 0.6938
batch 2
GEM # 36
rms/Mean=8.05%
(Ar/CO2, 495 V,
Fe55)
pulse(mV)


h_pad2
Entries 56
Mean 8.113
RMS 0.5503
batch 2
GEM # 34
rms/Mean=6.77%
(Ar/CO2, 495,
Fe-55)
pulse(mV)