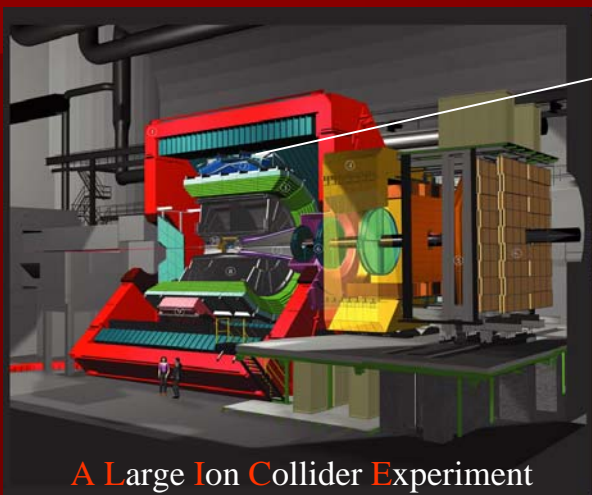


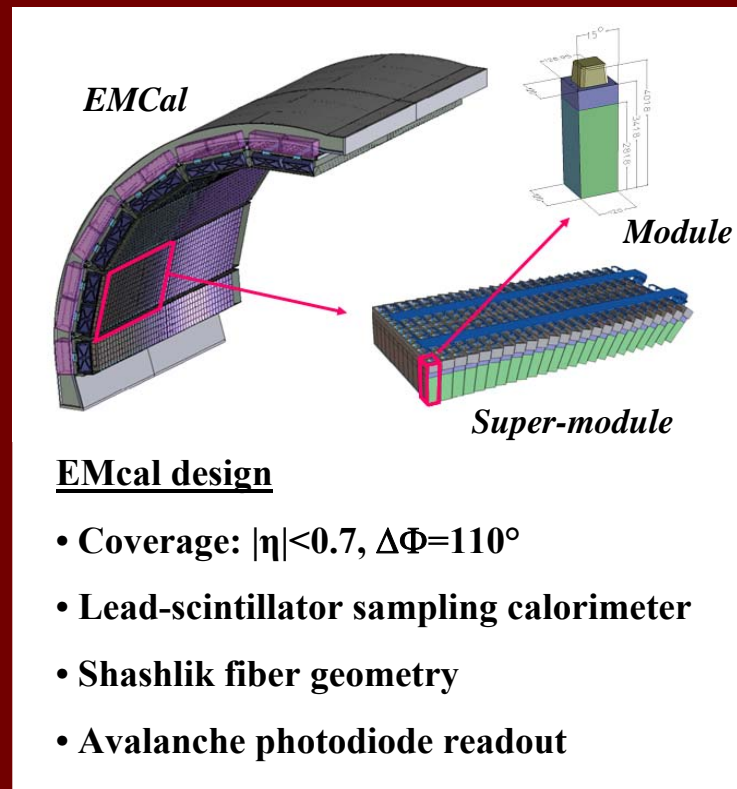
# Prototype and mass production tests of Avalanche Photo Diodes for the Electromagnetic Calorimeter in the ALICE experiment at LHC

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A new  
Electromagnetic  
Calorimeter (EMCal)  
is being installed in  
ALICE

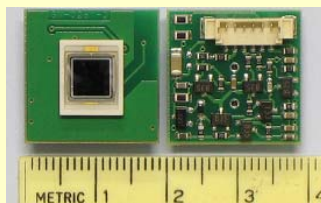


## Optical System and Photo Sensors

The light collected by the optical fibers is read by Avalanche Photo Diodes

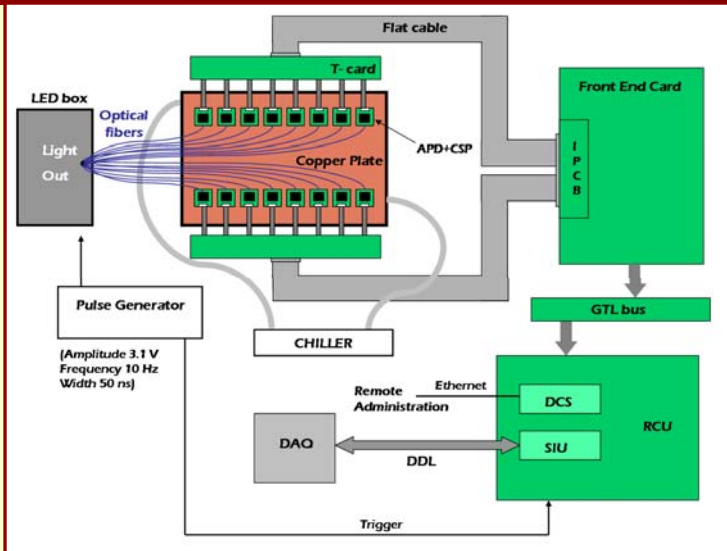
Hamamatsu S8148 APD

~ 13K APDs to be tested



# Test procedure and results

EXPERIMENTAL

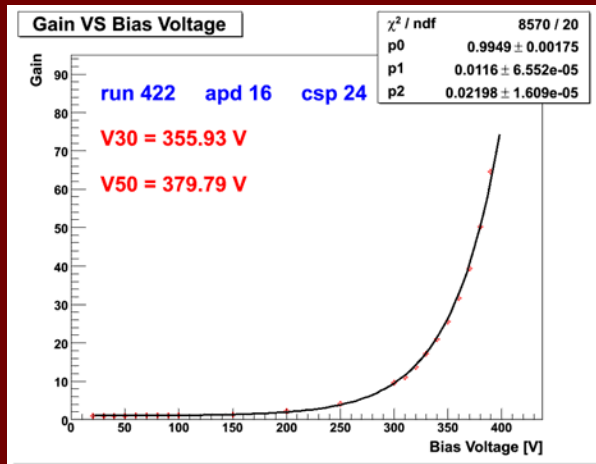


SET-UP

## Tasks

- Selecting APDs according to their performances
- Measuring the APD gain dependence on the bias voltage (Voltage Coefficient  $dM/dV \times 1/M$ )
- Evaluating the nominal voltage setting for the APD to obtain gain  $M=30$
- Measuring the APD gain dependence on the operating temperature (Temperature Coefficient  $dM/dT \times 1/M$ )

## Gain dependence on the bias voltage



## Temperature coefficient $1/M \times dM/dT$

