Summary of TIDC activities @ NTU

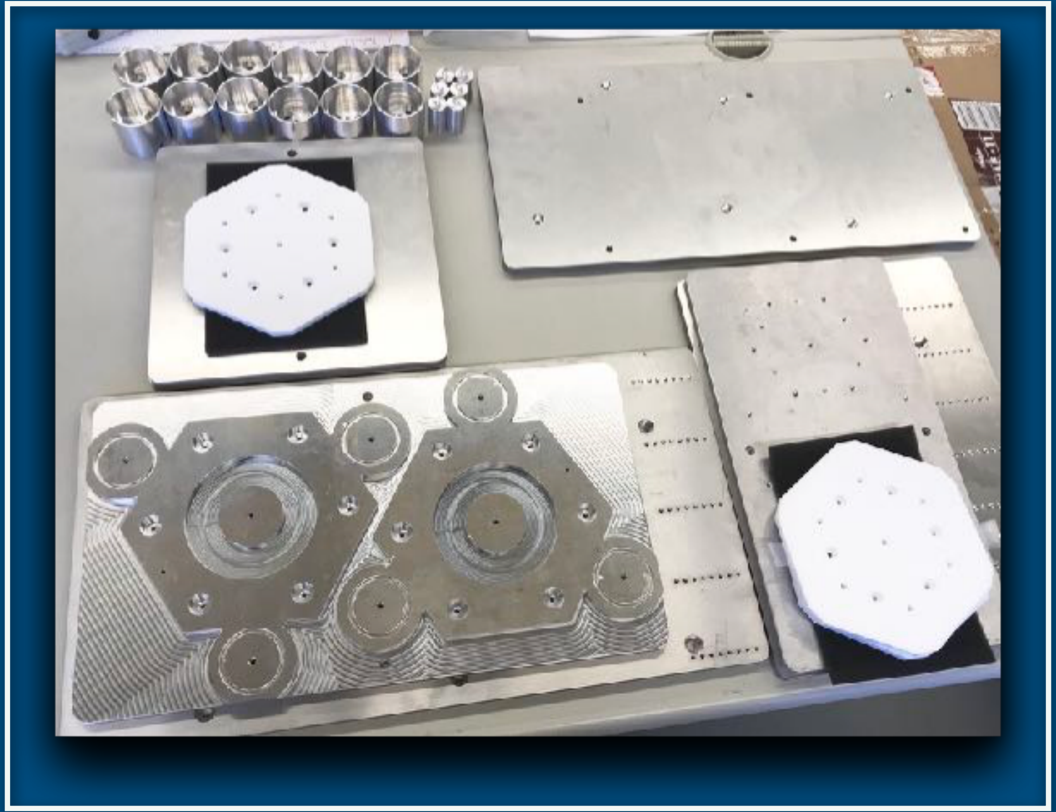
Hsin-Yeh Wu, Stathes Paganis

TW HEP meeting - 22 Jan, 2021

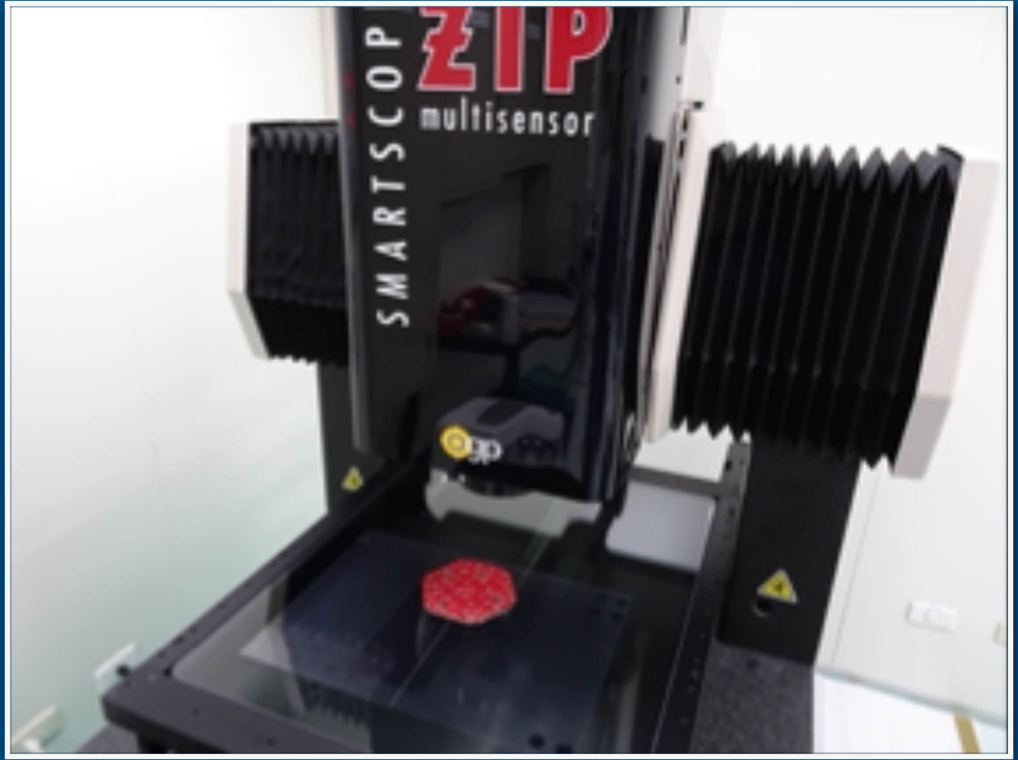
Silicon Detector Facility

Silicon Detector Facility

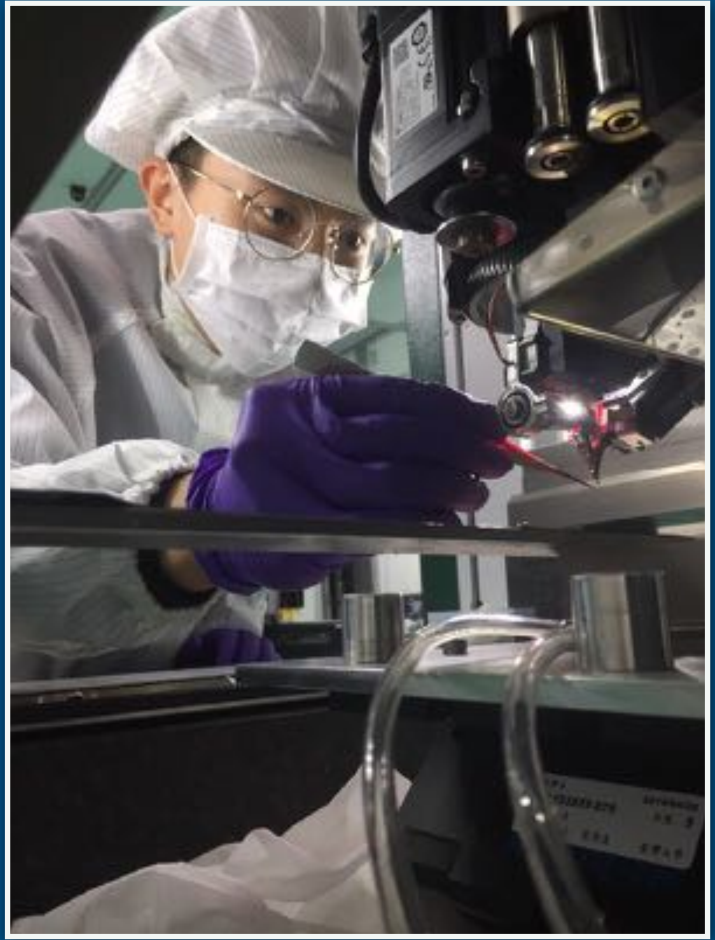
Prototype

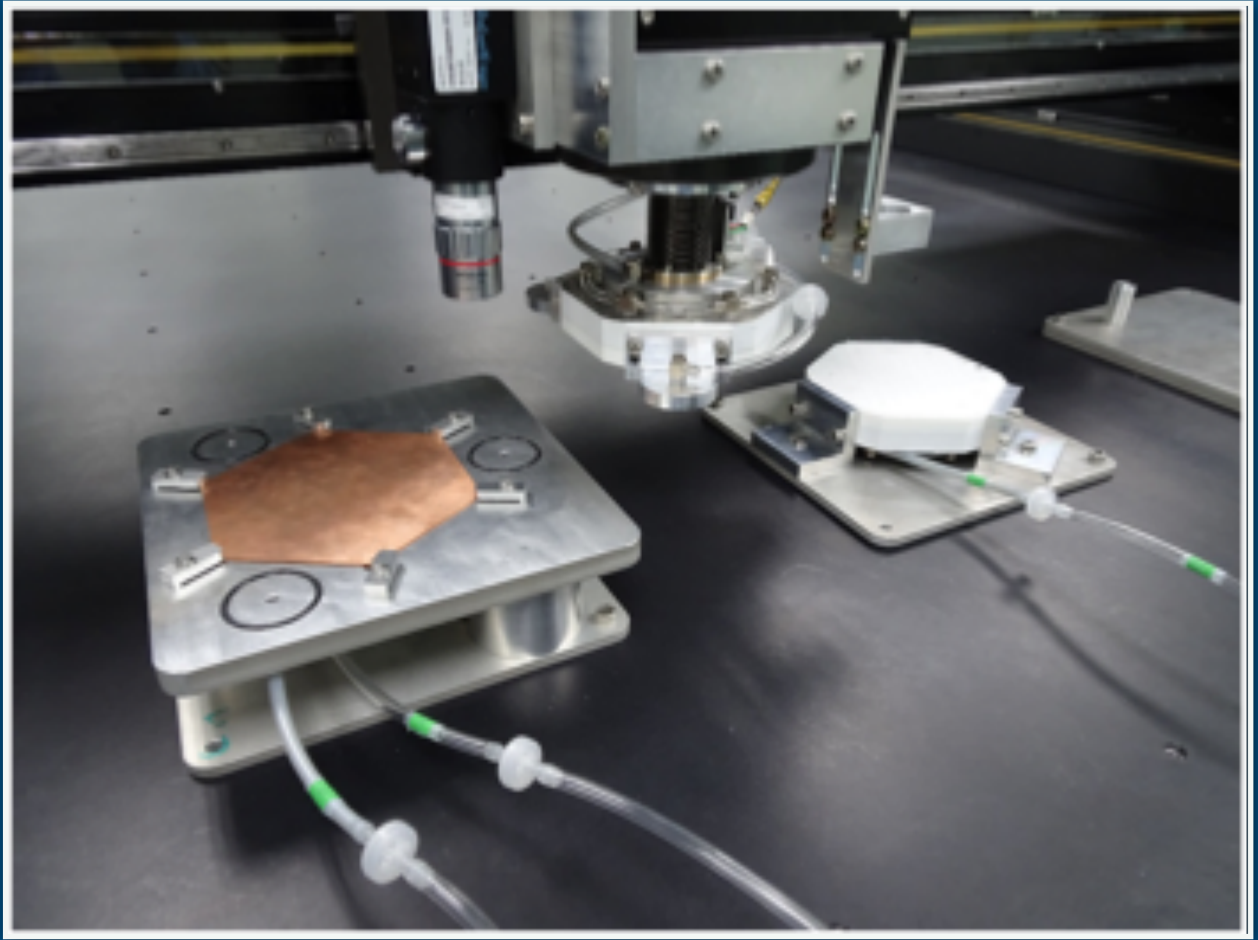


QC

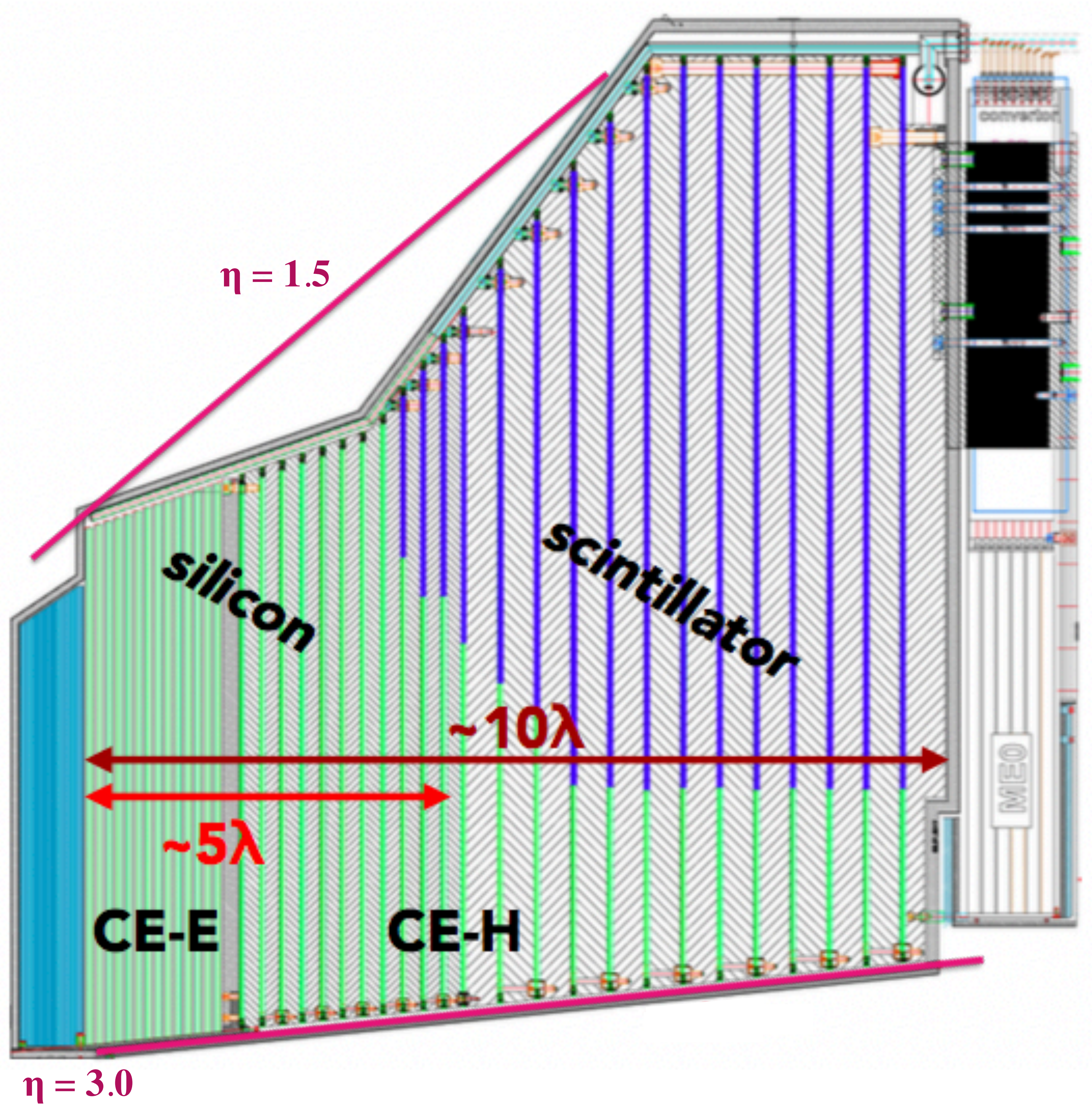


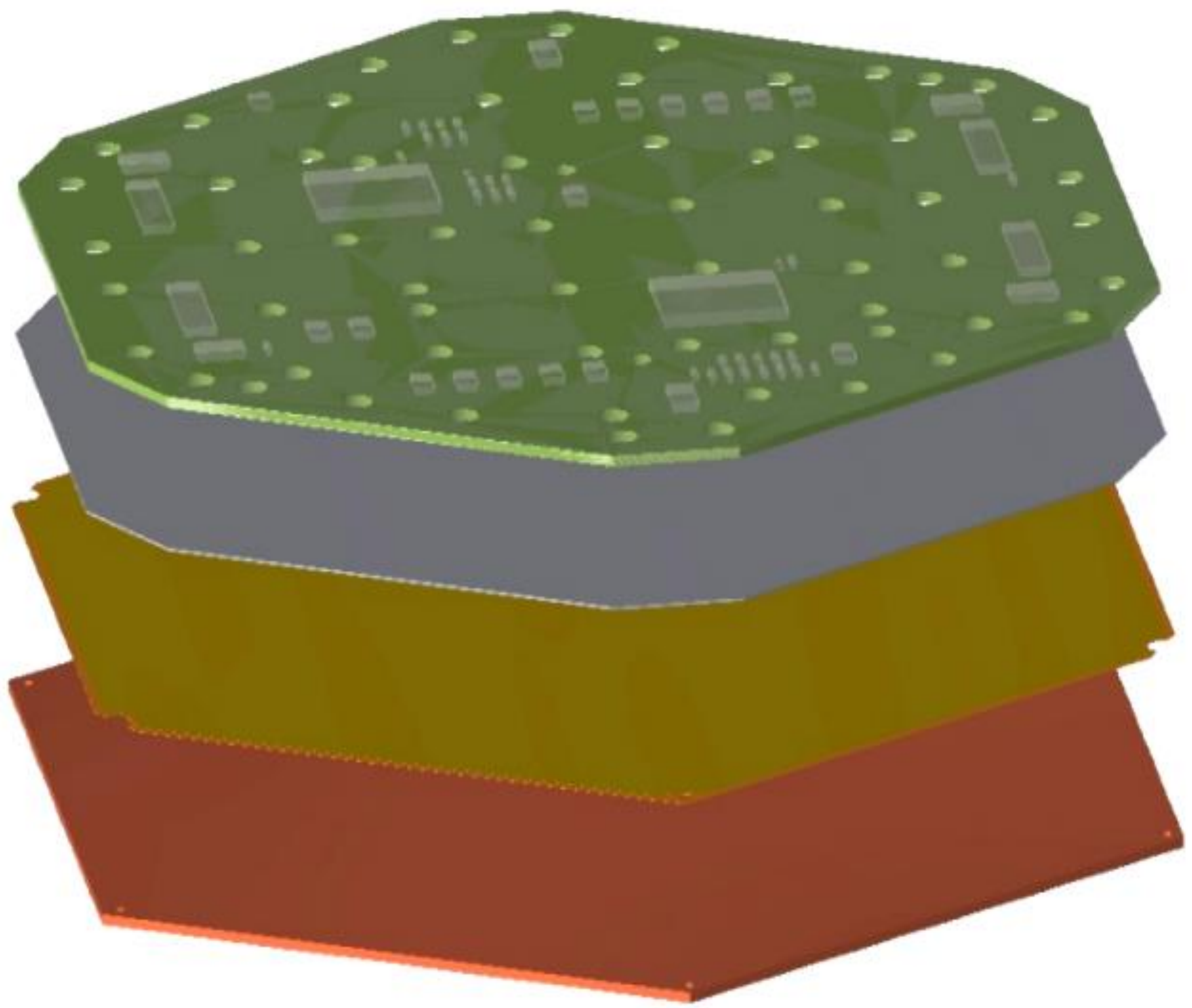
Production





CMS High Granularity Calorimeter (HGCAL)

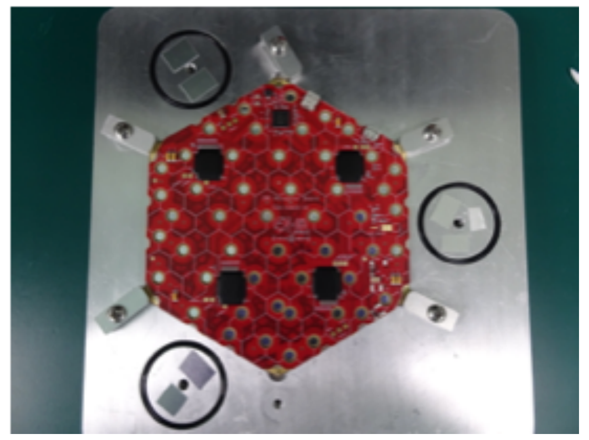
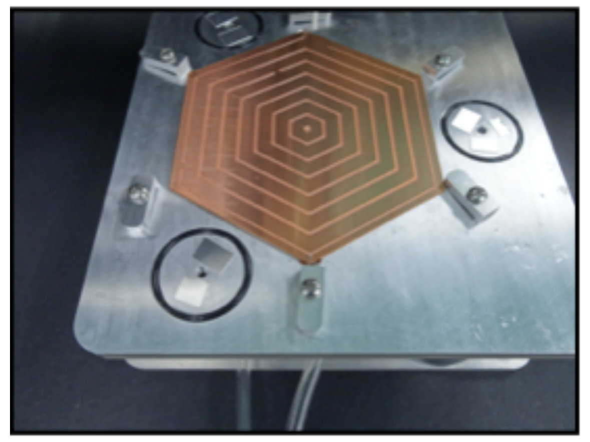
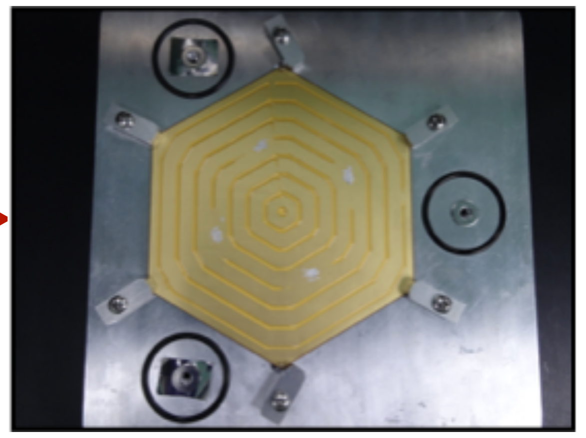
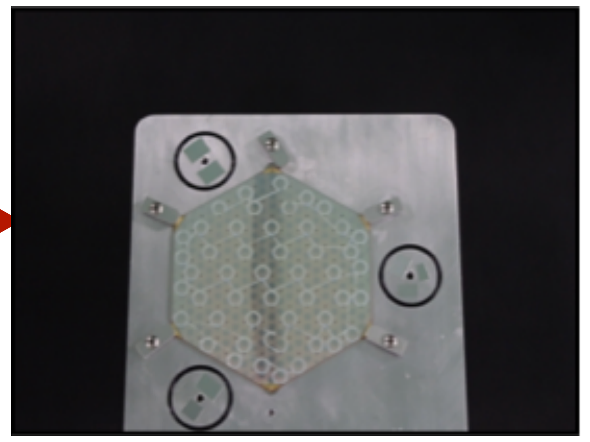




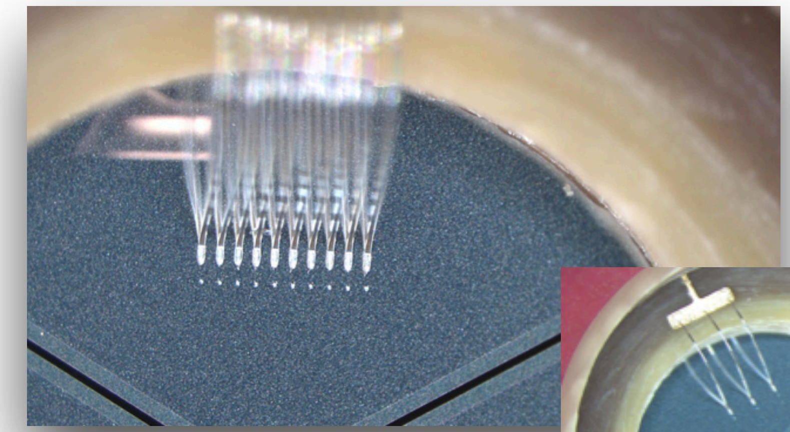
NTU Mission : 5000 Silicon modules in 2 years

HGCAL prototype

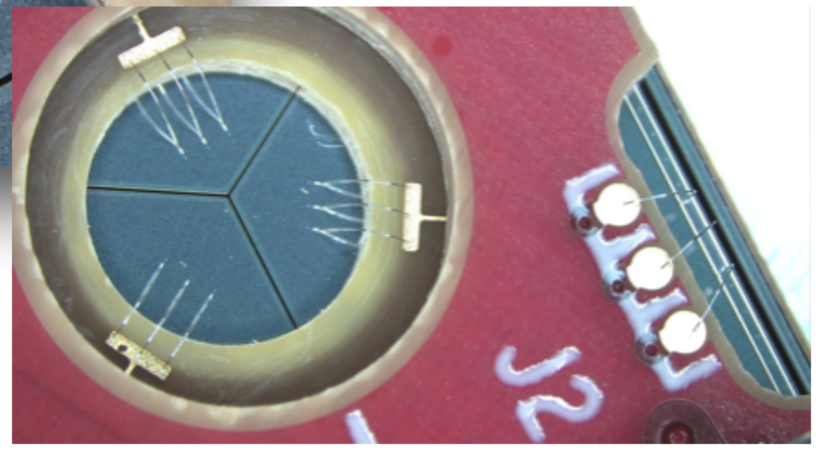
- **First 6 inch Module Assembly**
  - Cu BasePlate + gold-Kapton film + 400µm Silicon Sensor + Skiroc Chip V3 PCB

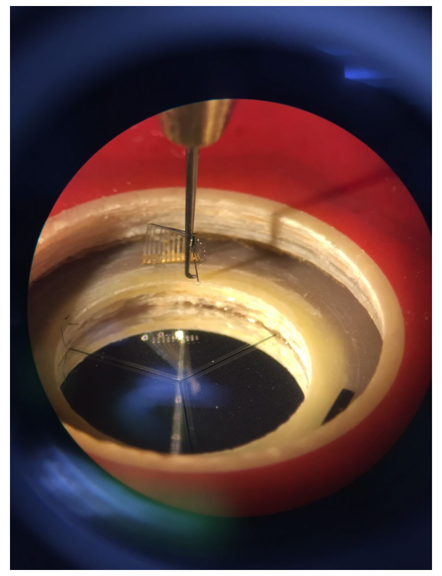
- **Wirebond**



Pull Test

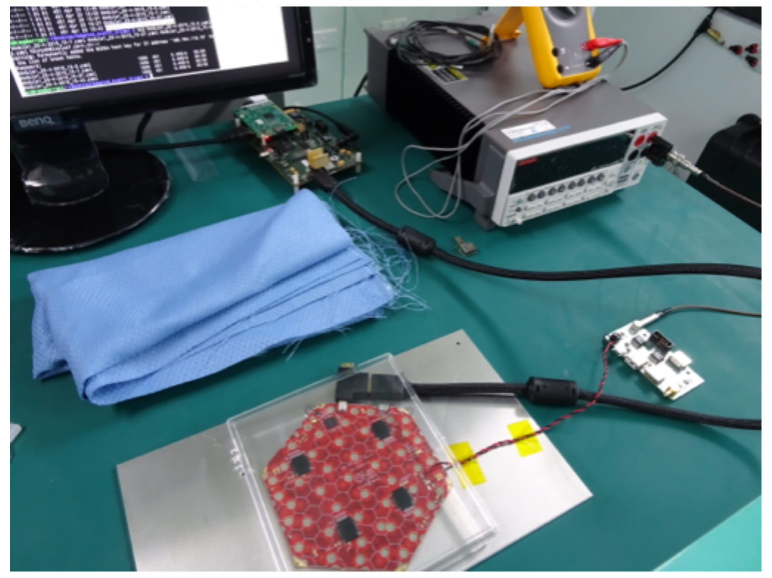


Step hole & Guard ring

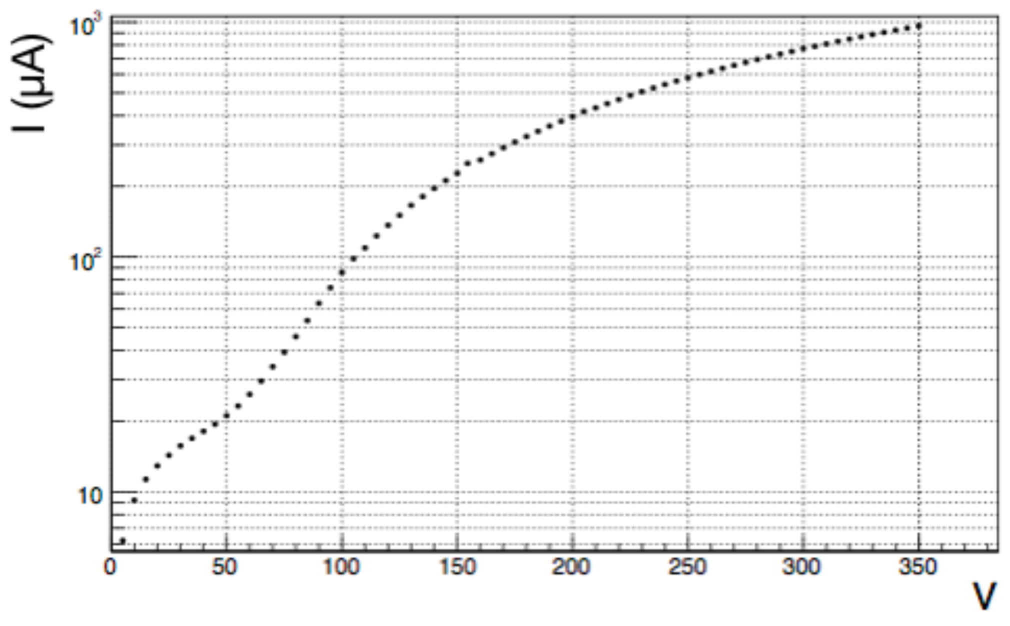


Pull Test

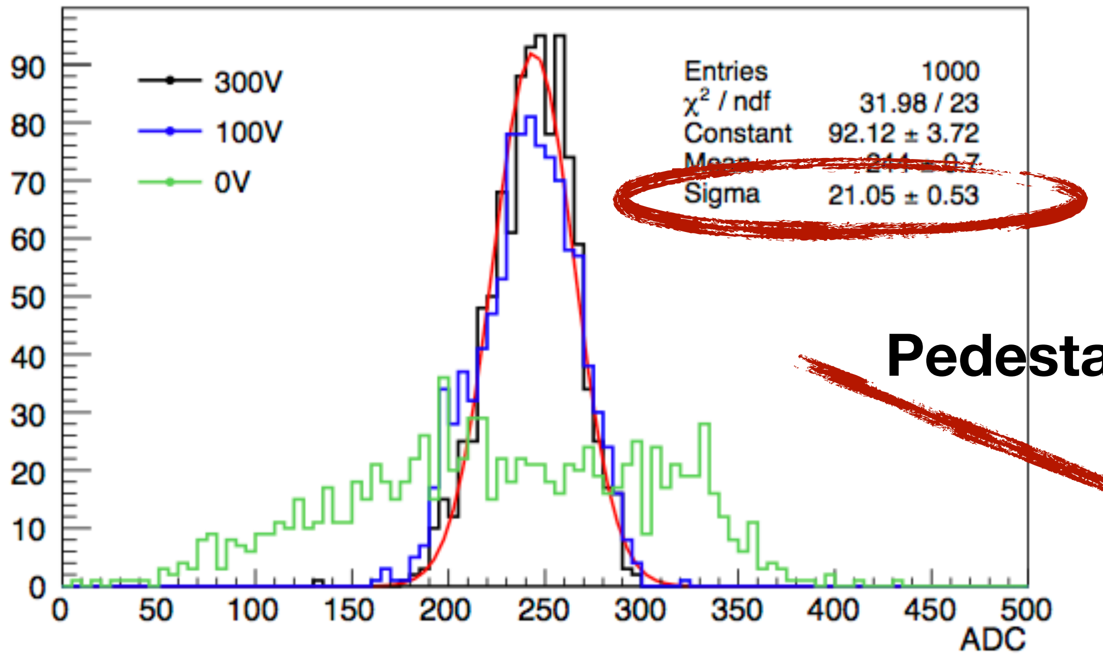
- **Test Results**



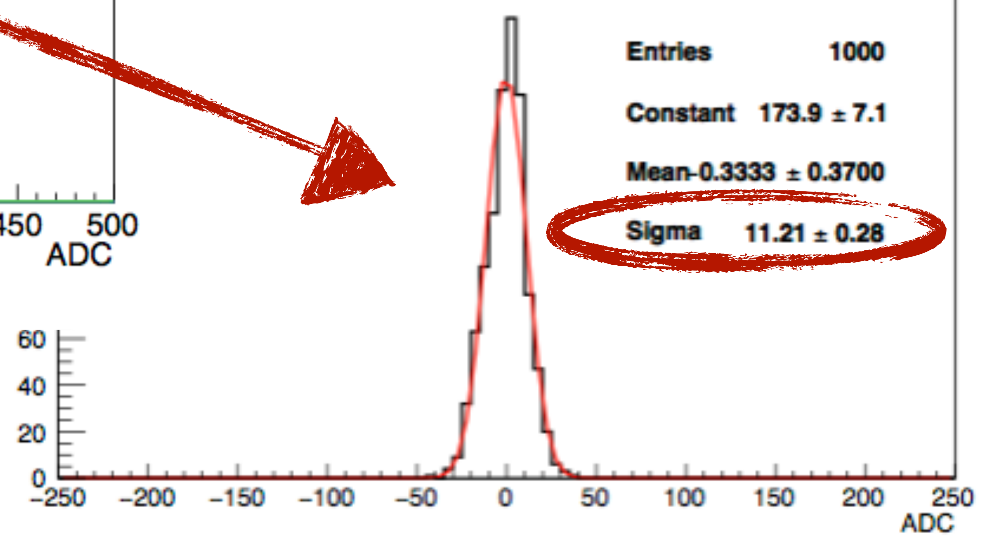
IV



HG Pedestal with different bias

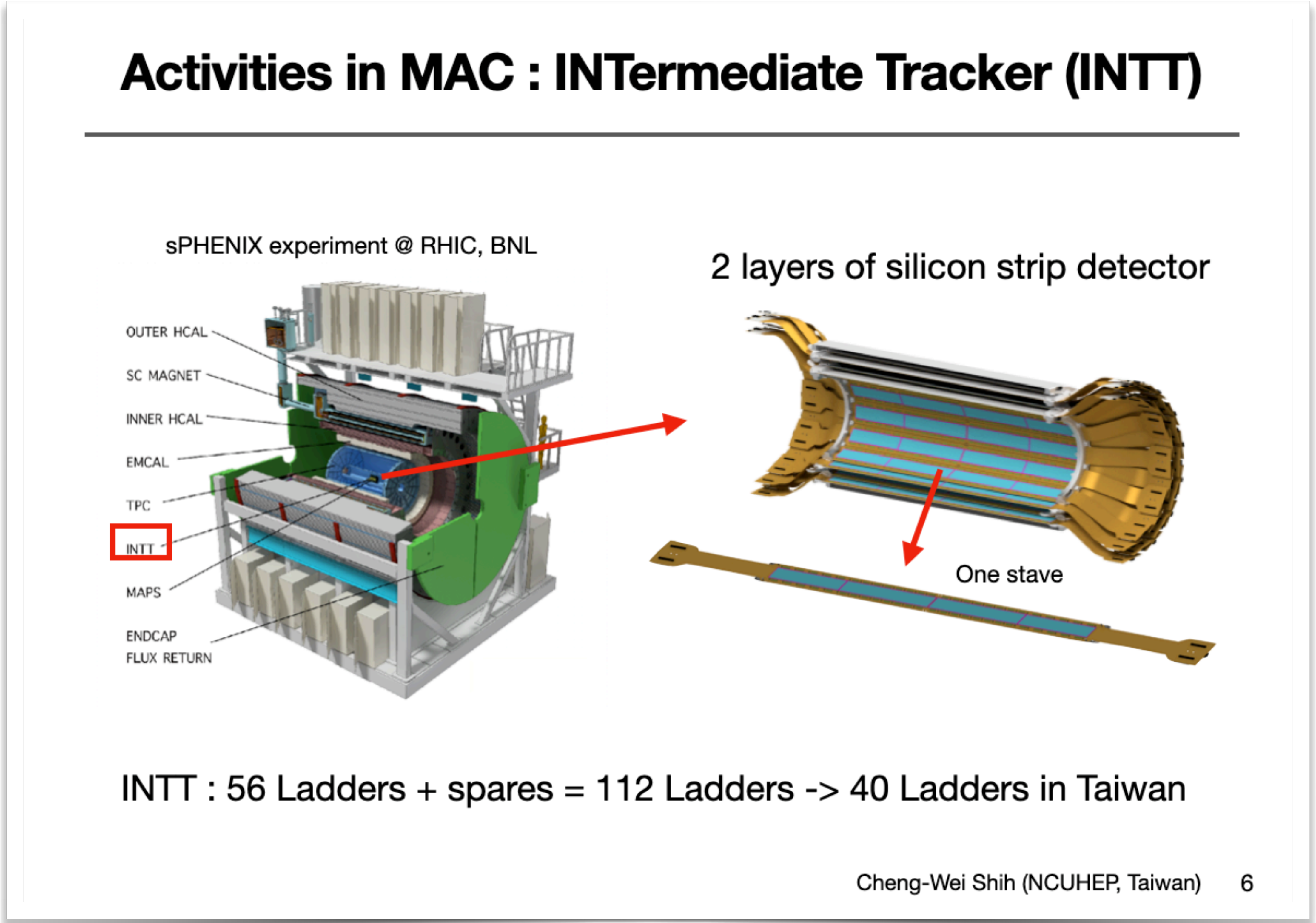


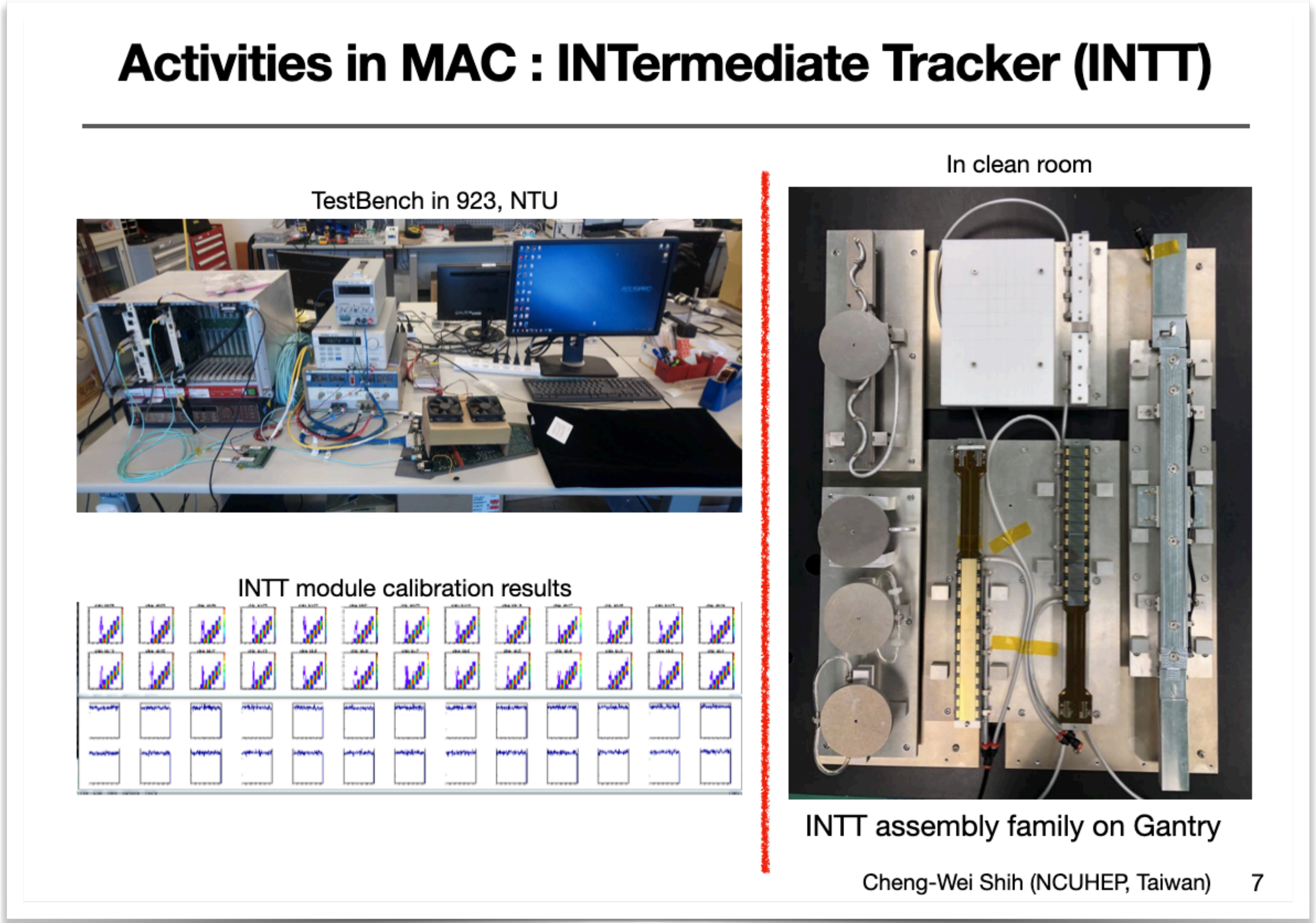
Pedestal & Common mode Subtracted



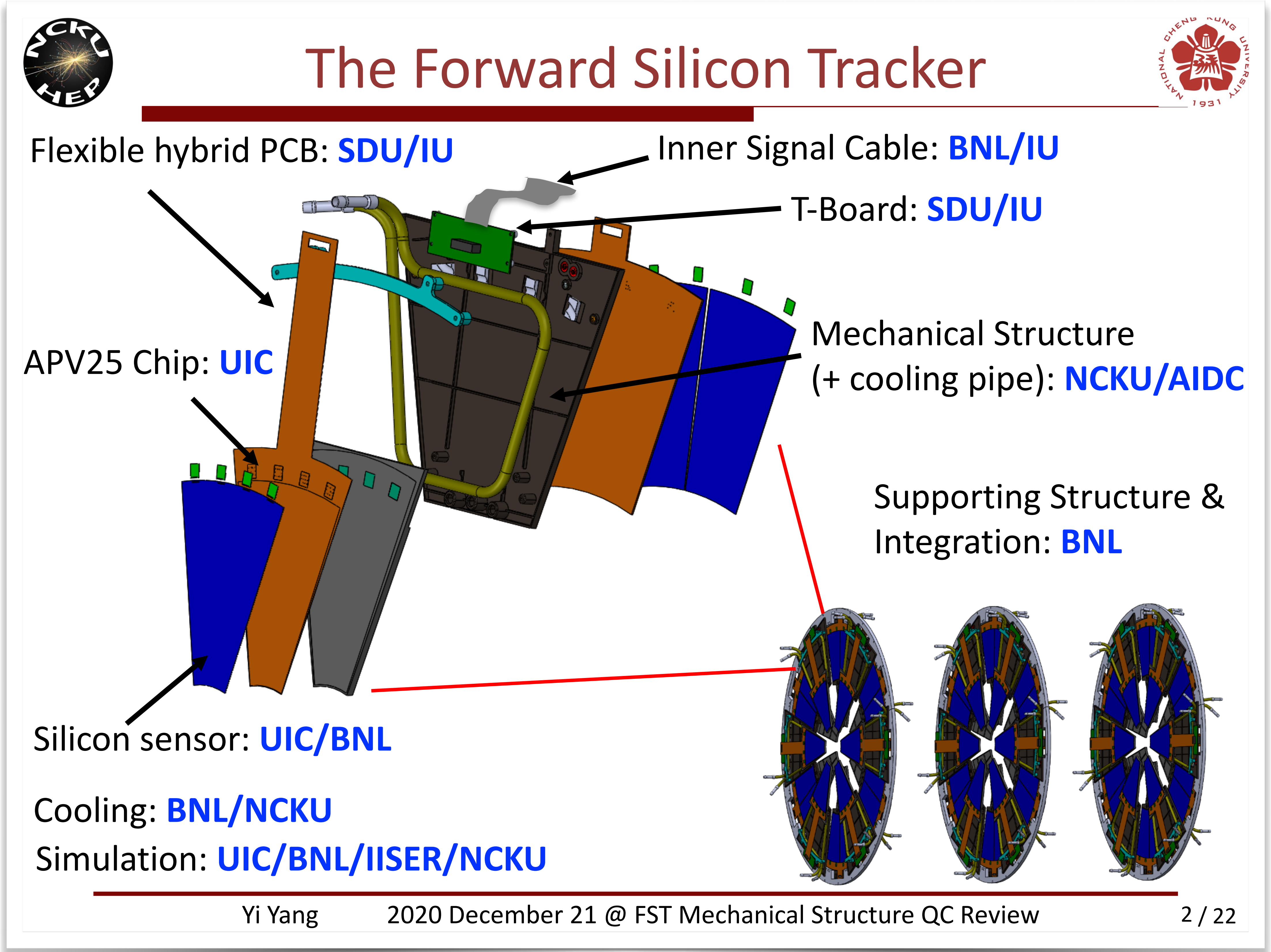
First Module successfully built, wirebonded and tested

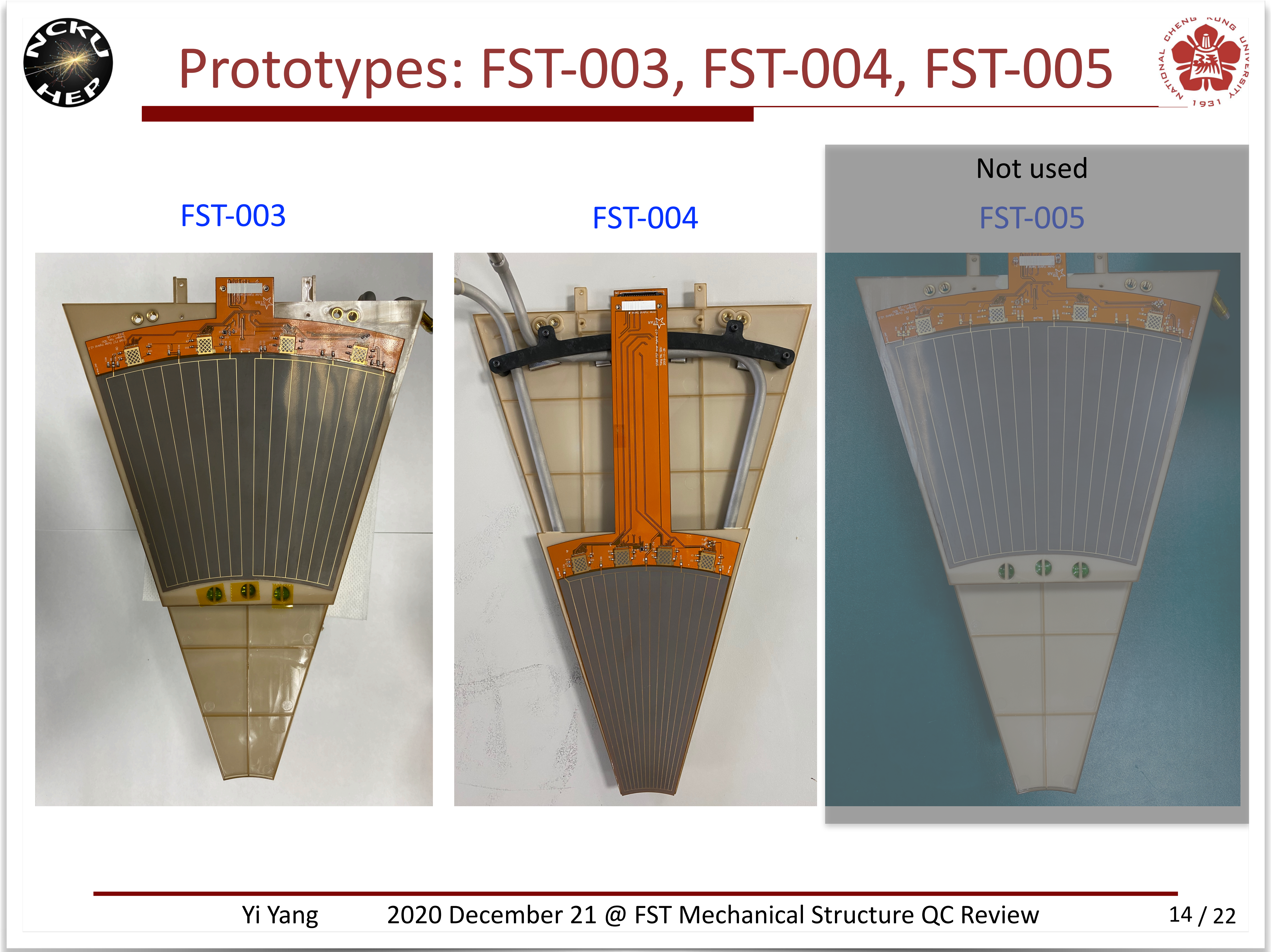
NCU < SPHENIX INTT >





NCKU < STAR FST >

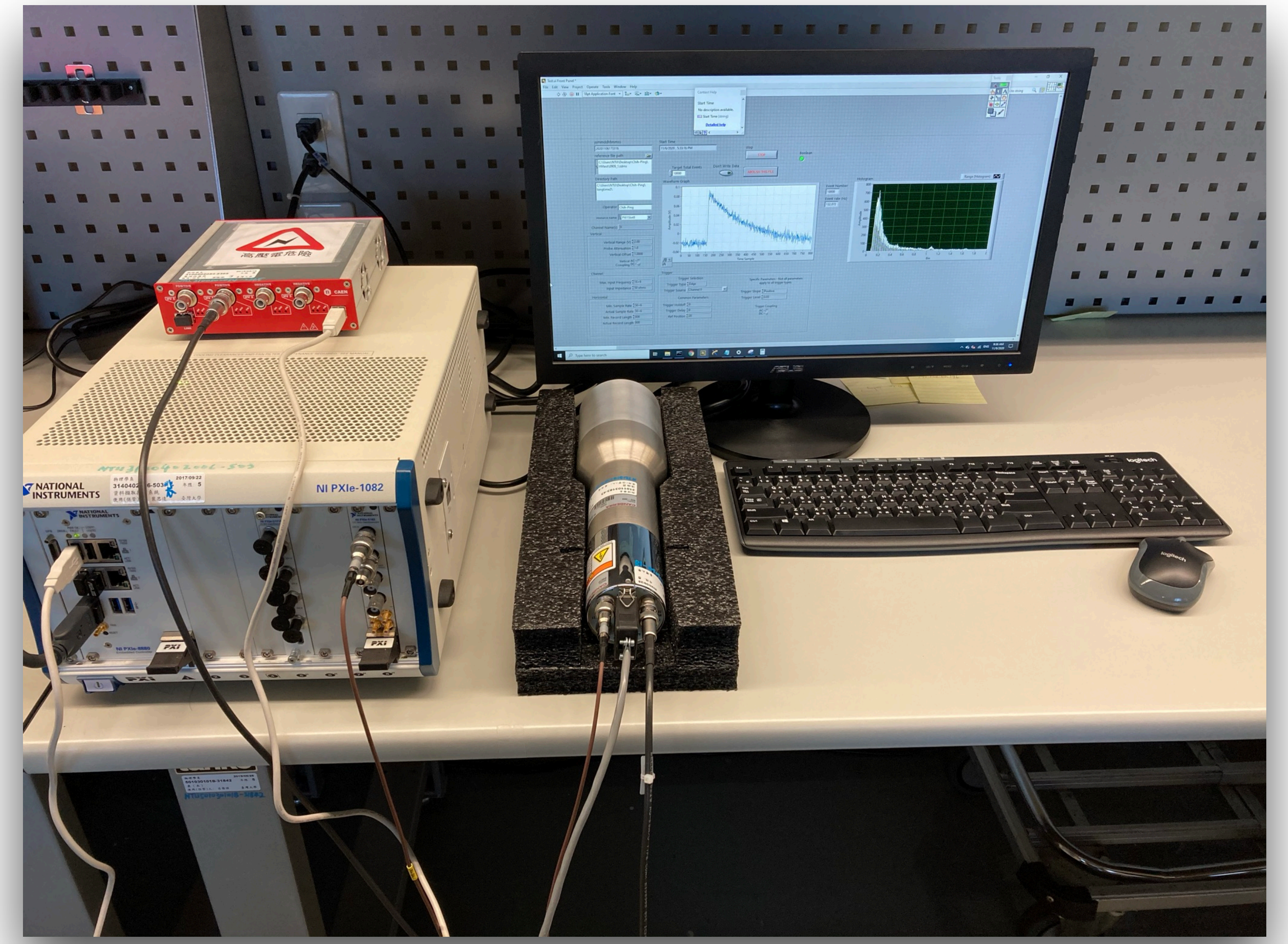


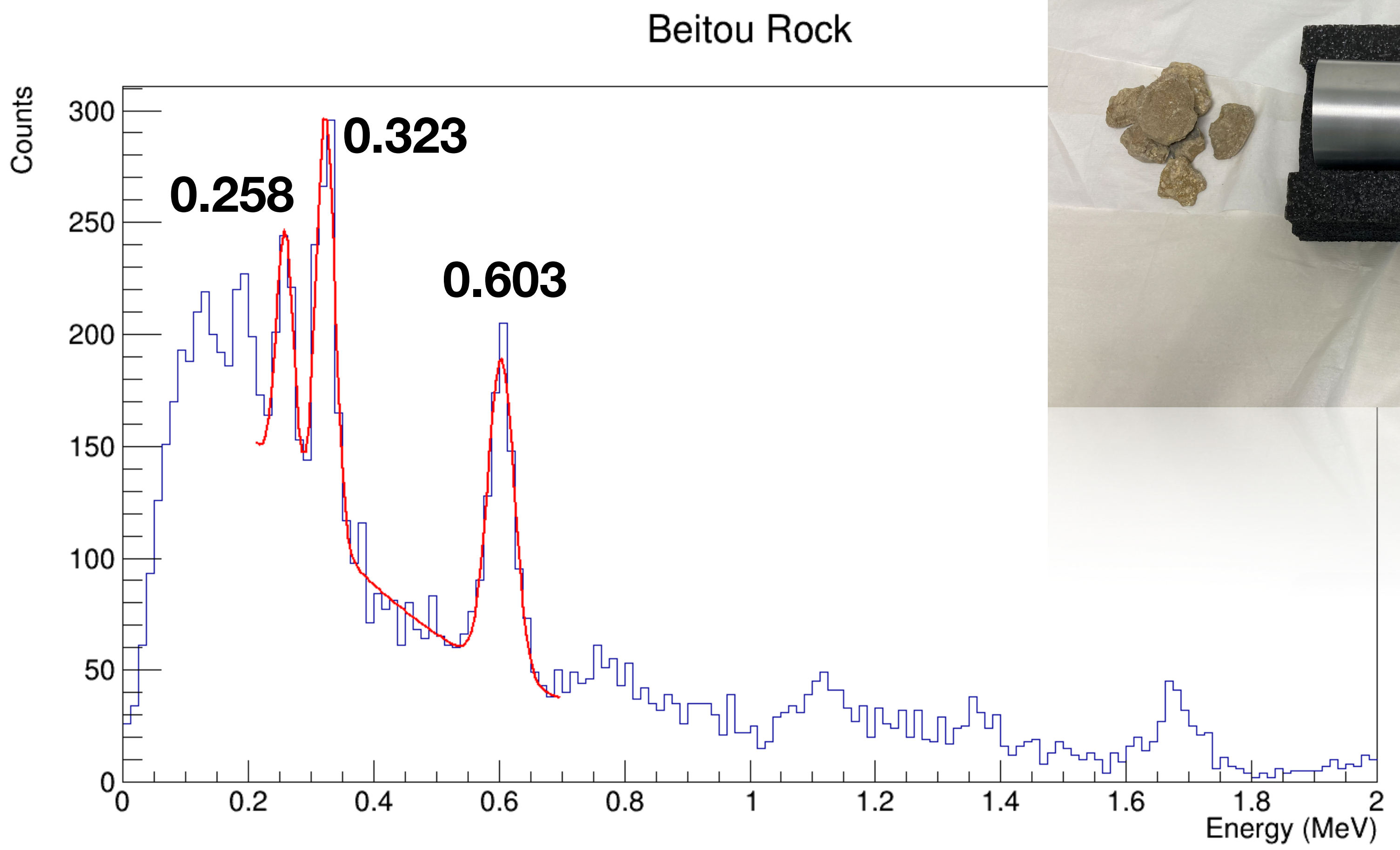


EQ Detector

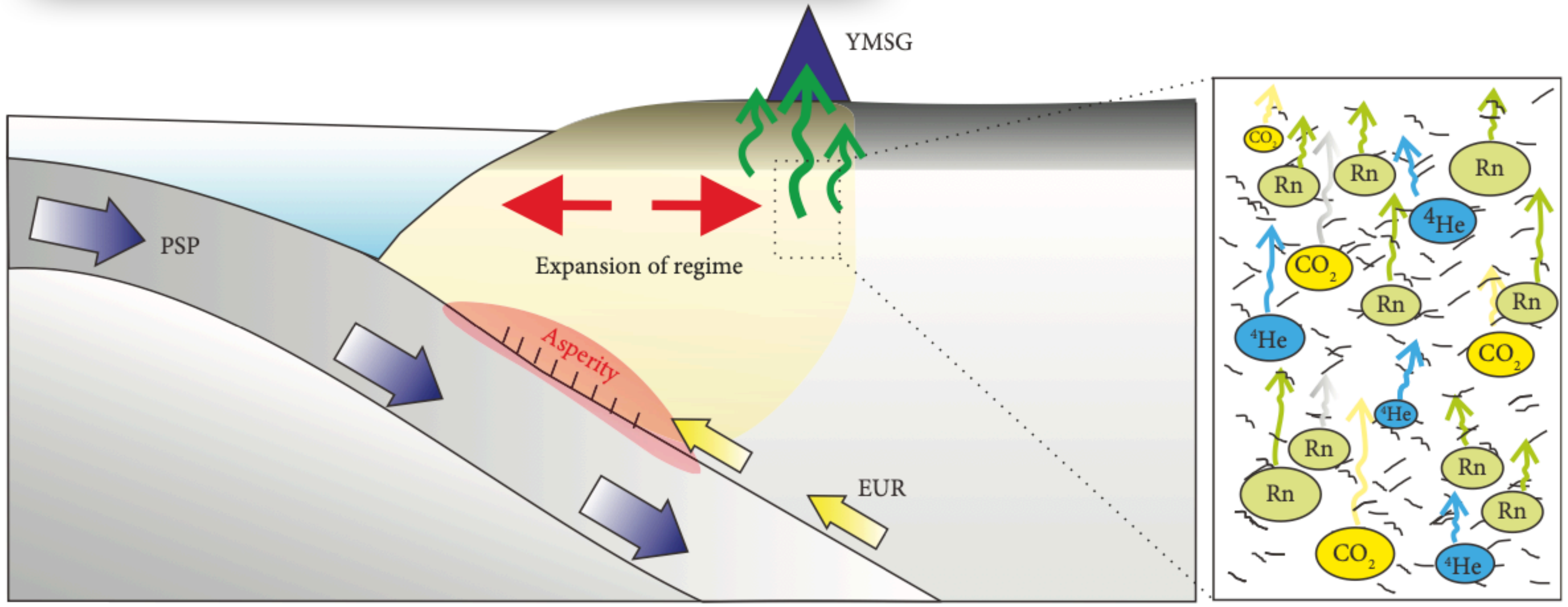
Earthquake detector

γ ray detector system





Chih-Ping, Wu



Goal : Pre-earthquake indication

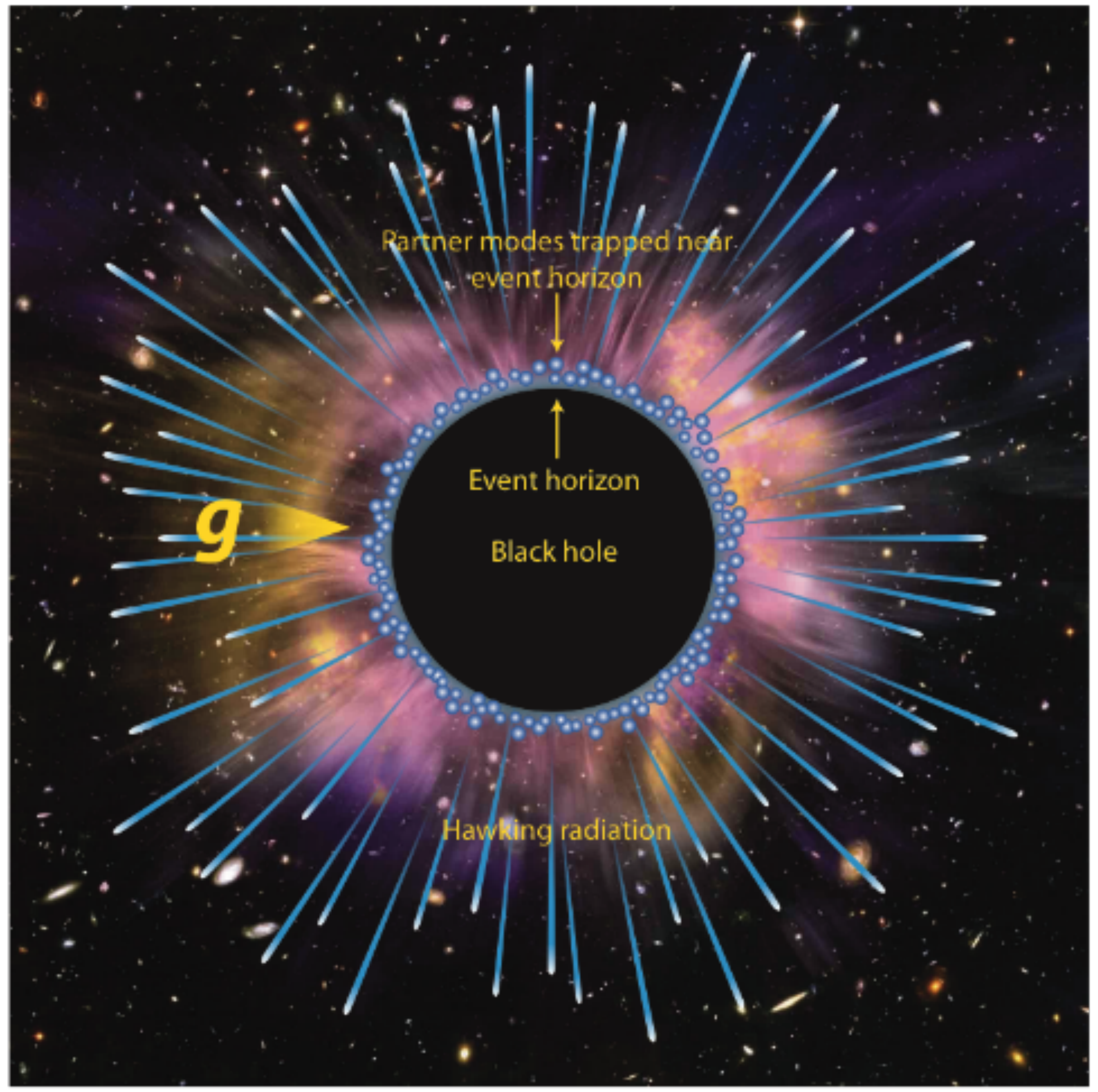
[1] "Gamma Ray and Radon Anomalies in Northern Taiwan as a Possible Preearthquake Indicator around the Plate Boundary", *Geofluids*, vol. 2019, Article ID 4734513, 14 pages, 2019.

AnaBHEL

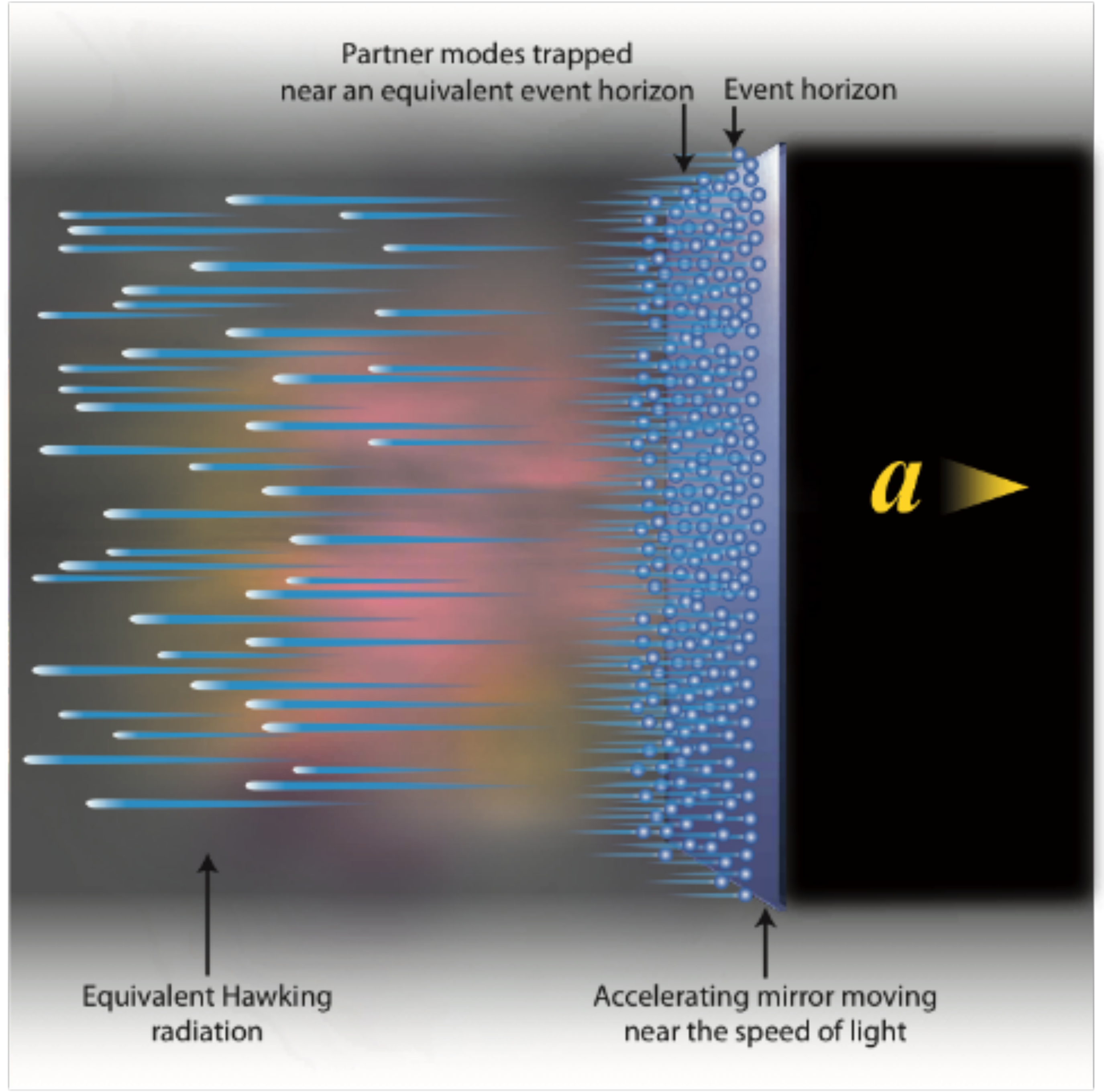
Analog Black Hole

SIMULATING A BLACK HOLE ON A TABLE

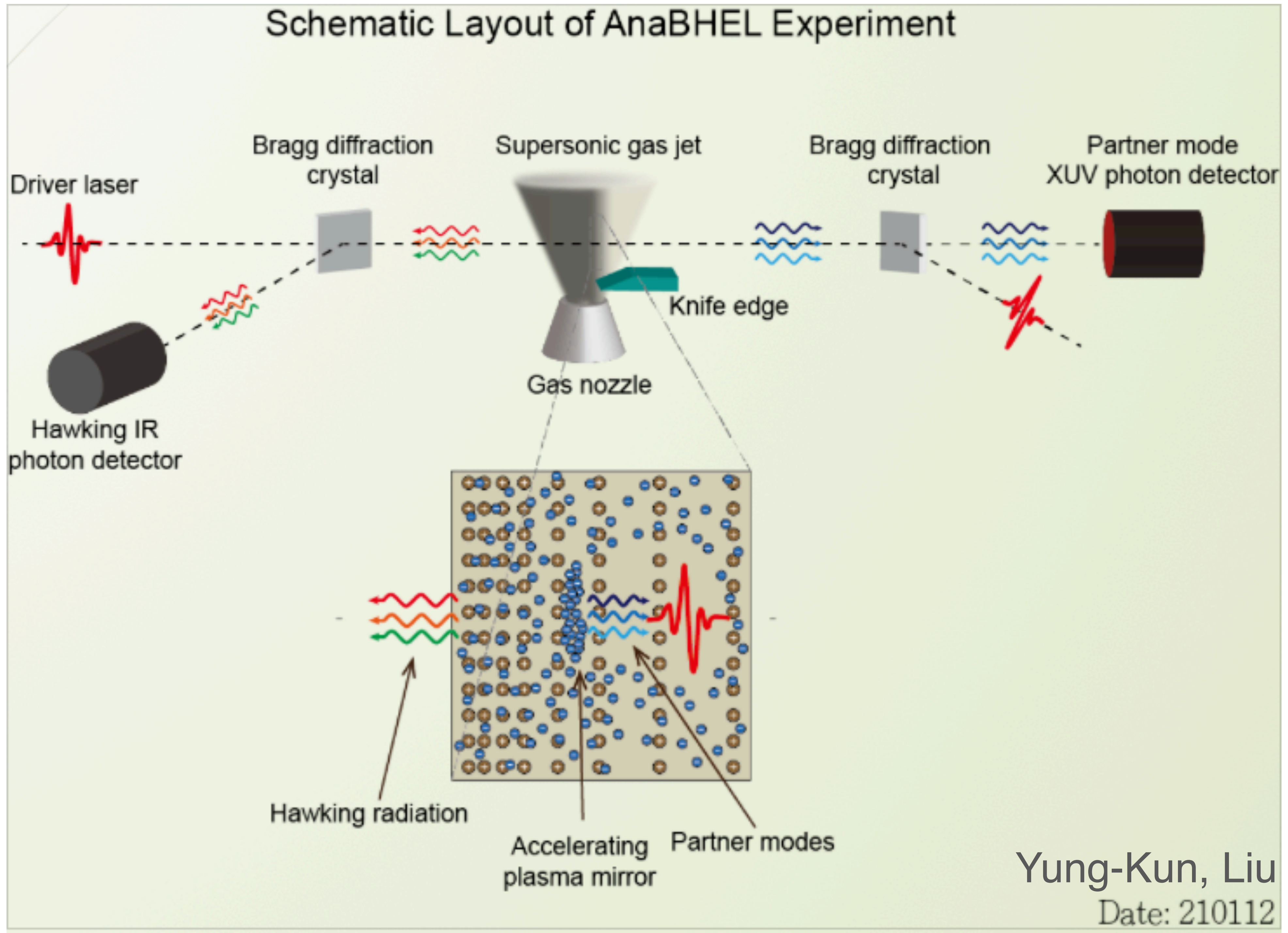
New black hole simulator may shed more light on a contradiction in fundamental physics



Black hole Hawking evaporation



Accelerating mirror as an analog black hole



Goal : detect the Hawking photon pair