

There has been an increased demand for very high granularity calorimetry for precise determination of the reaction final state. For this purpose, we have been developing a small-tile tile/fiber calorimeter and a scintillator-strip array EM calorimeter for linear collider experiments.

The T545 experiment was carried out as a collaboration with a group from JINR and a group from DESY. Two types of tile/fiber EMC modules were constructed; one by Niigata University group, and the other by JINR group. Figure 1 shows a scene during the beam test where Director General Totsuka was discussing in front of the JINR EMC module on the tile fabricated by JINR group using injection-mold method.



Figure 1: Director Totsuka discussing with Dr.Evtoukhovitch, Prof.Mjavia (JINR), Dr.Garutti (DESY) and Prof.Takeshita (Sinshu).

Plastic-scintillator-based fine-granularity calorimeters require huge number of optical readout channels. We have been studying variety of photon sensors for years. At T545, APDs, an HAPD and an EBCCD as well as SiPMs brought from DESY were integrated into detectors and their performances were examined. Figure 2 shows an example of reconstructed image of EBCCD data with five-fiber readout. We expect hundreds of fibers can be read out with one EBCCD.

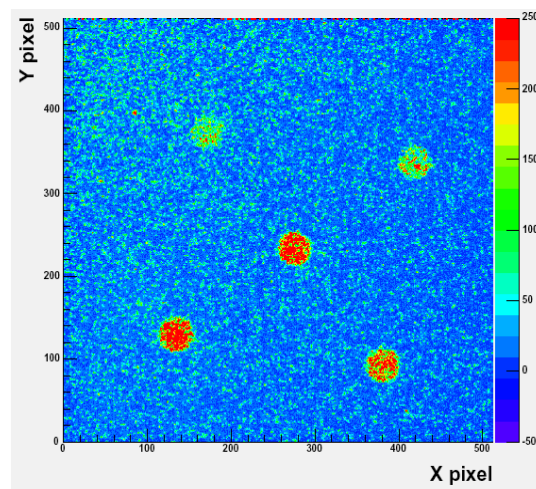


Figure 2: Image of fibers measured with EBCCD.