

The standard gamma-ray detector observes the center of the electromagnetic shower. Its typical position resolution is 10 mm. We are developing a new gamma-ray detector to measure the start point of electromagnetic shower. Our detector consists of inorganic scintillator plates, WaveLength Shifting Fibers and pixelated photon detectors. Our detector consisted of 30 layers. Each layer consisted of 10 times 10 scintillator plates. The size of each scintillator plate is 30 mm times 30 mm times 1 mm. 144 WLSFs cover top and bottom surface of each plate to measure the position of charged particles. 15 plus 14 WLSFs are attached on each side surface of plate to measure the light yield. When an electron and positron pair is created, assuming energy in the plate of the reaction point is between 0 to 2 MeV. That of the next plates has clear peak at 2 MeV. The reaction plate is identified from the light yield measurement. GEANT4 simulations shows 87 % of gamma-rays are detected with a position resolution of 0.1mm, 9% of gamma-rays pass through and 4% of gamma-rays occur multi-scattering in first or second plate. We are constructing the prototype detectors and we will perform the test beam experiment in this Autumn. The result will be shown in this conference.