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Some advances of thinner-THGEM

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Thinner-THGEM, which has 0.2mm thickness, 0.1mm~0.15mm hole diameter, 0.3mm pitch and 5~20um rim has been manufactured successfully. Two methods have been investigated for the manufacture: drilling and laser. The performance has been studied and it shows that 1.0X10^4 gain for one layer and 16% energy resolution for 55Fe source can be achieved. The spatial resolution of thinner-THGEM with 0.3 mm pitch strip-anode has been measured with centroid and center of gravity method, respectively. The influence of anode strip pitch on the extremity of hole-pitch has been researched in detail. A resistive-WELL type thinner-THGEM has been tested at Beijing Electron Positron Collider (BEPC) test beam with 0.1~1GeV proton and pion beam. Abhout 99% and 94% efficiency for proton and pion, has been obtained respectively. The ion feedback effect is studied for a TPC prototype requirement. In respect of application, for one dimensional readout, a curved parllax free with large open angle of 48°,diffraction meter has being tested for TiO2 and SnO2 with good angular resolution of 0.14°, and a linear diffraction meter with 512 channel digital readout for outside mineral sample test is in using. For two dimensional readout a 20×20 cm2 and smaller one with 128 channels strip and a pexel readout have been used for α/β pollution and dosage measurement.

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