

Performance of Triple GEM Detector in X-Rays and Beta Particles Imaging

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A triple gas electron multiplier (GEM) detector with an active area of 10x10 cm² was constructed and tested for x-rays imaging using a 256 channel 2D x-y strips readout. The study includes optimization of GEM operating high voltage, x-ray tube distance, x-ray tube high voltage, the best x-ray filter, best ratio of Ar/CO₂ gas mixture. A ⁹⁰Sr beta source also was used. The result of the study shows a good ability of GEM detector for x-ray 2D imaging and beta particles tracking.

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