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Development of THGEM-based detectors for Nuclear Fission Studies

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To optimize the exploration of Super Heavy Elements (SHE), the key challenge is to understand the dynamics of fusion-fission reactions through the measurement of mass and angular distributions of the fission fragments. For the detection of the fission fragments, position-sensitive Multi-Wire Proportional Counters are usually used due to their high gain, good temporal and position resolutions. However, these detectors use fragile anode wires having a diameter of only 10 microns and therefore are not portable. In the present work, a detector based on robust THick Gaseous Electron Multiplier (THGEM), has been proposed. In the presentation, a numerical demonstration of THGEM-MultiWire hybrid detector technology as a possible candidate for new generation low energy fission studies and their evaluation as a function of different possible geometric and electric configurations in low-pressure Isobutane gas will be discussed.

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No, this is an entirely new submission.

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