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Application of Microchannel Plate System for Mass Spectrometry Measurements MISGANAW GETANEH, University of Tennessee at Martin, KEN GRABOWSKI, DAVID KNIES, CATALINA CETINA, GRAHAM HUBLER, SCOTT TUMEY, Naval Research Lab, Washington, DC — A microchannel plate (MCP) detector module with active area of 10 x 2 cm^2 is used as a position detector for mass spectrometry. The MCP detects electrons scattered by an MeV ion beam as it goes through a thin Carbon foil which is placed at a 45° angle with respect to the beam. The scattered electrons' transverse motion is restricted by application of uniform electric and magnetic fields parallel to the axis of the MCP. The charge that is amplified by the MCP is deposited on a double-delay line anode. Differential timing and charge partitioning are used to determine the horizontal and vertical positions of the ion.

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