

Abstract Submitted
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Timing resolution and detection efficiency of the St. George detector system¹ LUIS MORALES, JACQUES LAURENCE, SUNIL KALKAL, JERRY HINNEFELD, Indiana University South Bend, HYO SOON JUNG, MANOEL COUDER, University of Notre Dame — The St. George recoil mass separator at the University of Notre Dame will be used to study (α, γ) reactions of astrophysical interest. A detection system was developed for the St. George recoil mass separator by Indiana University South Bend that will utilize energy and time-of-flight to separate reaction products from residual unreacted beam particles. The detection system utilizes two transmission detectors in which secondary electrons produced by the passage of an ion through a thin foil are deflected by electric and magnetic fields onto a microchannel plate (MCP) detector, which registers timing measurements. A silicon strip detector is used to measure the ion's kinetic energy. Measurements were conducted with an alpha source of Am-241 and Gd-148 to determine the MCP efficiency and timing resolution. The best values achieved to date are 75% for efficiency and 550 ps for timing resolution. The program SIMION was used to investigate further the effect of varying the voltages applied to the foil, the field-shaping electrodes, and the MCP detector, on the efficiency and timing resolution.

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