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Scintillator Detector Development at Central Michigan University DAVID MCCLAIN, ALFREDO ESTRADE, SHREE NEUPANE, Central Michigan University — Experimental nuclear physics relies both on the accuracy and precision of the instruments for radiation detection used in experimental setups. At Central Michigan University we have setup a lab to work with scintillator detectors for radioactive ion beam experiments, using a Picosecond Laser and radioactive sources for testing. We have tested the resolution for prototypes of large area scintillators that could be used for fast timing measurements in the focal plane of spectrometers, such as the future High Rigidity Spectrometer at the Facility for Rare Isotope Beams (FRIB). We measured the resolution as a function of the length of the detector, and also the position of the beam along the scintillator. We have also designed a scintillating detector to veto light ion background in beta-decay experiments with the Advanced Implantation Detector Array (AIDA) at RIKEN in Japan. We tested different configurations of Silicon Photomultipliers and scintillating fiber optics to find the best detection efficiency.

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