

Focal Plane Detectors for Recoil Mass Spectrometers*

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The recoil mass spectrometer has proved itself to be the instrument of choice for modern proton radioactivity experiments. At the focal plane, properties of the separated reaction products such as M/Q (mass/charge), energy loss, and time of arrival are measured using a thin transmission detector. Behind this detector the ions are implanted into a second detector where the energy, velocity, and physical location are determined. Proton decay takes place inside this detector, so it must be able to measure the energies of charged particles over a range between several hundred keV and several hundred MeV.

Current systems using parallel grid avalanche counters, micro-channel plate detectors, and silicon strip detectors will be described. Future prospects for improved systems will be discussed.

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