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**Time-Resolved 1-10 keV Spectrometer for the Z Machine at Sandia National Laboratory**

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Beamline(s): X8A

**Introduction:** We have designed and fabricated a fast, time-resolved 1-10 keV spectrometer for use at the Z machine at Sandia National Laboratory.

**Methods and Materials:** The instrument has two convex cylindrical crystals (PET and KAP), and provides continuous coverage from 1-10 keV in twenty spectral channels.

**Results:** We have performed initial testing of the spectrometer at the Pulsed X-ray Facility at the Bechtel Nevada Los Alamos Office, and beamline X8A at the National Synchrotron Light Source. The time response for each channel was measured, and 700 picosecond rise times were observed. Fluorescent emission from the KAP channel was observed above 3.6 keV, resulting in high background signals.

**Conclusions:** Design modifications will include pinhole apertures, detector collimation, customized channel filters, and background monitor detection. We plan to evaluate the modifications and calibrate the spectrometer in fiscal year 2002.