was measured simultaneously using p+^{12}C elastic scattering at angles where the analyzing power is very nearly unity.[2] Since only the normally polarized beam was available, the U/D polarimeter was rotated 90° into a L/R polarimeter for calibration. The measured analyzing powers of the phoswich online polarimeter are 0.433 ± 0.006 for 200 MeV incident protons and 0.399 ± 0.007 for 186 MeV protons. The reals:accidentals ratio for 10 nA of beam incident on a 1.7 mg/cm^2 CD_2 target is at least 100:1. The rate capability of this polarimeter is also significant. Tests have been performed up to a beam current of 80 nA. The current polarimeter will be used in E336 and E337 production runs this fall.

1. J. Arvieux and J.M. Cameron, Adv. Nucl. Phys., **18**, 107 (1989).
2. E. Stephenson, *et al.*, (private communication).

ISiS: A 4π DETECTOR SYSTEM FOR COMPLEX FRAGMENTS

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The investigation of hot nuclear matter formed in central collisions between intermediate-energy projectiles and heavy target nuclei demands a highly versatile detector system. This condition is imposed by the complex spectrum of fragments produced in such collisions—which span a broad range in mass, charge and kinetic energy. At the same time, the multibody nature of these events is such that determination of fragment multiplicities and spatial relationships on an event-by-event basis is essential for understanding the salient reaction mechanisms. Thus, full solid-angle coverage with good granularity is a prerequisite for such studies.

ISiS is a 4π detector currently under construction that will be employed in such studies at IUCF and other high-energy light-ion accelerators.

The detector (Fig. 1) will consist of 162 detector telescopes arranged in a honeycomb network that will surround a target. It will cover about 86% of the total surface of a sphere around the target. Each detector telescope will have three elements: (1) A gas-ionization chamber for low velocity fragments; (2) a 500 μ-thick ion-implanted passivated silicon detector for intermediate-velocity fragments, and (3) a 28 mm CsI scintillator with photodiode readout for energetic light ions. Each telescope will be able to measure fragments with energies between 0.5 to 90 MeV per nucleon (e.g., $\approx$ 2 to 360 MeV for ^{4}He

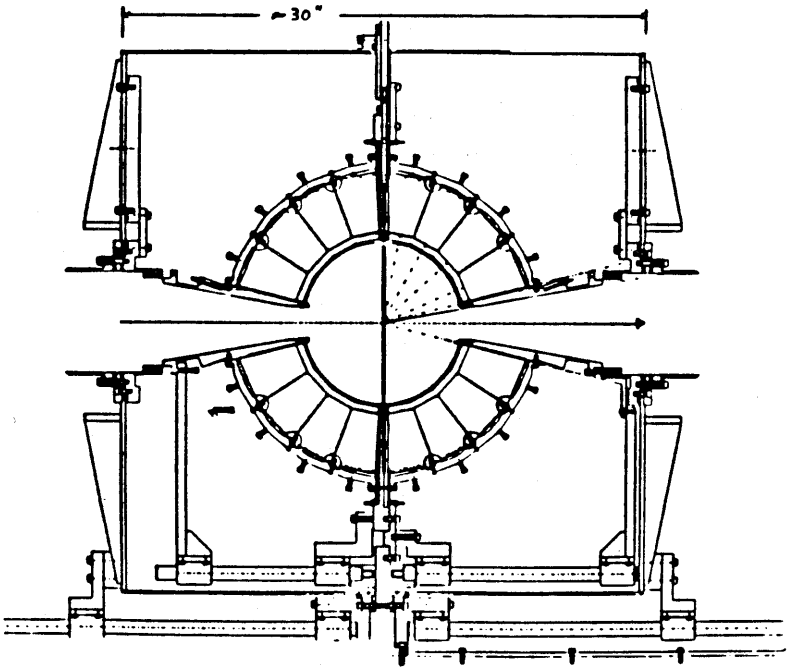

Figure 1. Schematic diagram of ISiS detector array.

ions), as well as identifying fragment charges up to Z $\cong$ 14. With this configuration we will be able to determine the properties of all fragments and their angular relationships, which will permit us to reconstruct both light charged-particle and multifragment events formed in intermediate-to-high-energy collisions.

The construction of ISiS is being funded primarily by a $400K grant from the Department of Energy with additional support from IU and IUCF. All detector components (silicon, CsI and photodiodes) will be delivered this summer. Mechanical design is nearly completed, except for some detailing. The trapezoidal detector cans which form the honeycomb network have been completed in the chemistry mechanical shops and assembly of individual telescopes is in progress. Design for the electronics ($\approx$ 500 channels of preamp/shapers and $\approx$ 160 channels of constant fraction discriminators) are in the final stages; the 500 ADC channels are on order. Data acquisition will be handled via CAMAC/VME. The present goal is to complete the detector by the end of 1991.

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