

Abstract Submitted
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A Novel Design of a High-Resolution Hodoscope for the Hall D Tagger based on Scintillating Fibers RICHARD JONES, IGOR SENDEROVICH, CARL NETTLETON, University of Connecticut, GLUEX COLLABORATION¹ — The tagging spectrometer designed for Hall D is instrumented with two hodoscopes, a low-resolution array spanning the full photon energy range from 3 to 11.6 GeV, and a high-resolution “microscope” covering just the region of the primary peak in the coherent bremsstrahlung spectrum in the range 8.4 - 9.0 GeV. The microscope is constructed of a two-dimensional array of square scintillating fibers several cm in length, whose axes are aligned with the tagging electron trajectories. The motivation for the segmentation in both x and y is presented. Various components of the detector have been prototyped and tested on the bench, including in particular the silicon photomultiplier (SiPM) that will be used to detect the scintillations. Custom electronics for this readout have been designed that are adapted to the peculiar features of the SiPM devices. A small-scale prototype of the microscope is under construction, to be tested in an electron beam in the near future.

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