

Abstract Submitted
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Tagger Microscope Development and Construction for the GlueX Experiment ALEX BARNES, JAMES MCINTYRE, RICHARD JONES, University of Connecticut, GLUEX COLLABORATION — The GlueX experiment will use a 9 GeV linearly polarized photon beam to search for mesons with gluonic excitations, and measure their spectrum and couplings. To create a polarized photon beam, the 12 GeV electron beam from CEBAF will pass through a $20\mu\text{m}$ thick diamond wafer and undergo coherent bremsstrahlung. In order to know the energy of the photon the post-bremsstrahlung electron energy is analyzed in a dipole spectrometer. A highly segmented tagging detector called the microscope will intercept the electrons within the region 3.0-3.6 GeV, to permit tagging of photons in the region of the coherent peak 8.4-9.0 GeV at rates up to 10^8 γ/s . These electrons are incident on scintillating fibers which provide 4 MeV energy resolution and propagate the signal to Silicon Photomultiplier (SiPM) sensors that are mounted on custom high speed circuit boards. The scintillating fibers and electronics are under construction at the University of Connecticut. The development and construction of the Tagger Microscope and the electronics will be presented.

Alex Barnes
University of Connecticut

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