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Neutron Detection using Lithium Glass Scintillator ADAM WALLACE, Brigham Young University, LAWRENCE REES, BART CZIRR — We have developed a neutron detector using a thin sheet of lithium-6 glass scintillator. Lithium-6 has a high capture cross-section for neutrons, giving high neutron detection efficiency. One of the difficulties of neutron detection is discriminating between neutron and gamma radiation. We have measured the gamma sensitivity of our detector to be one in 10,000. For nuclear non-proliferation applications, radioactive sources may be shielded. Unlike most neutron detectors, lithium glass detectors are more efficient at detecting neutrons if the source is shielded. We are testing different configurations to optimize the detector's neutron capture efficiency.

Adam Wallace
Brigham Young University

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