

Abstract Submitted
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A multipurpose test stand for scintillator decay lifetimes¹ TY-MOTHY MANGAN, Oregon State University Los Alamos National Lab, P-23, NEUTRON SCIENCE AND TECHNOLOGY TEAM — We built a prototype test stand in order to measure novel scintillator materials' decay lifetimes. Radiography and imaging are valuable diagnostic tools for studying dynamic experiments, thus new scintillator materials are needed to improve the resolution of the current observational systems. A collaborative effort by the neutron imaging and x-ray radiography teams is underway to study the novel scintillator materials developed at LANL and by outside collaborators. Decay lifetimes are an important characteristic of a scintillator material and so by developing this prototype we have provided an avenue to further scintillator development. We confirmed the effectiveness of this prototype by comparing known scintillator decay lifetimes of LYSO and polystyrene samples. In our proof-of-concept prototype we use an 80 Gs/s oscilloscope. With future implementation of a fully developed test stand, we will use a digital data acquisition system to record complete waveforms to conduct a post-processing analysis of the decay times. Results of the prototype test and potential improvements to final test stand design will be presented. LA-UR-16-25229

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