

Abstract Submitted
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Deuterated Organic Scintillators for the Absolute Normalization of Gamma Beam Flux¹ AIDAN WALSH, Oak Ridge National Laboratory, University of Surrey, MICHAEL FEBBRARO, STEVEN PAIN, Oak Ridge National Laboratory — The measurement of the absolute photon flux is a challenging task and can contribute to large uncertainties in gamma-ray beam experiments. Currently, flux determination relies on either Compton scattering at low energies or the photodissociation of deuterium at higher energies. The latter method requires the detection of neutrons, which is tied to the uncertainties and inefficiencies of neutron detectors. To reduce these uncertainties it would be desirable to detect the recoil proton rather than the neutron. To accomplish this the source of deuterium must be active. To this extent we are developing deuterated scintillator tiles, for determination of absolute photon flux. Efforts are underway to produce thin tiles in a minimal loss procedure, due to the high cost of the deuterated monomer. Tiles have been successfully produced and their characterization with gamma-ray sources will be presented. Applications toward beam diagnostics for current and upcoming gamma-ray beam facilities will be discussed.

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