

Abstract Submitted  
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**Characterization of the deuterated scintillator EJ-315 for neutron energies from 5-30 MeV<sup>1</sup>** JAY RIGGINS, MICHAEL FEBBRARO, FREDERICK BECCHETTI, RAMON TORRES-ISEA, University of Michigan, ALAN HOWARD, University of Notre Dame, CHRISTOPHER LAWRENCEW, University of Michigan, JAMES KOLATA, University of Notre Dame — Deuterated scintillator neutron detectors have shown to give superior performance in applications including nuclear reaction studies and homeland security. Characterization of the response of such deuterated detectors is needed for further determination of suitable applications. In particular the asymmetry of the (n+d) differential cross section, in comparison to the differential (n+p) cross section, allows for spectrum unfolding to extract information on the incident neutron energy spectra without need for time-of-flight. Characterization of the deuterated-benzene scintillator EJ-315 has been conducted at the Institute for Structure and Nuclear Astrophysics at the University of Notre Dame. Pulse shape discrimination (PSD), light response, detector resolution, and intrinsic efficiency have been measured via (d,n), and (<sup>3</sup>He,n) reactions. The applications to stable and exotic beam reactions involving neutron physics, as well as homeland security regarding the detection of special nuclear materials will be presented.

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