## Abstract Submitted for the DNP12 Meeting of The American Physical Society

Fast Neutron with  $Cs_2LiYCl_6^1$ Spectroscopy NATHAN D'OLYMPIA, P. CHOWDHURY, C. GUESS, T. HARRINGTON, E. JACKSON, S. LAKSHMI, C.J. LISTER, University of Massachusetts Lowell, J. GLODO, R. HAWRAMI, K. SHAH, U. SHIRWADKAR, Radiation Monitoring Devices Inc. — In the field of neutron detection,  $Cs_2LiYCl_6:Ce$  (CLYC) has recently attracted attention as a thermal neutron/ $\gamma$ -ray scintillator. Recent studies of fast neutron response of CLYC at the UMass Lowell 5.5 MV Van de Graaff accelerator has revealed the capability of directly measuring fast neutron energy spectra through the <sup>35</sup>Cl(n,p) reaction. This detection mechanism, previously unreported in literature, yields discrete peaks with an average resolution of 9%, making CLYC a promising candidate for fast neutron spectroscopy without resorting to time-of-flight techniques. MCNPX simulations corroborate our findings and explore the nature of the response function for energies up to 20 MeV. Plans for the unique capabilities of CLYC in the form of a versatile array will be presented.

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Nathan D'Olympia University of Massachusetts Lowell

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