

Abstract Submitted
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Development of digital electronics for VANDLE¹ MIGUEL MADURGA, S. PALAUSKAS, R. GRZYWACZ, S. PADGETT, UTK, D.W. BAR-DAYAN, ORNL, J.C. BLACKMON, LSU, J.A. CIZEWSKI, P. O'MALLEY, Rutgers U., S.N. LIDDICK, LLNL, C. MATEI, W.A. PETERS, C. RASCO, ORAU, F. RAIOLA, F. SARAZIN, Mines — The proposed Versatile Array of Neutron Detectors at Low Energies (VANDLE) will be used in reactions and decay studies with exotic nuclei. VANDLE will consist of plastic scintillator modules for neutron energy measurement in the range between 100 keV and 10 MeV using time of flight (TOF) technique. TOF measurements require a sub-nanosecond electronic timing resolution in order to achieve good energy resolution. It is proposed to use a digital data acquisition system to instrument VANDLE. Series of tests have been performed with elements of the prototype detector and a digital data acquisition system. The data indicate that even with the fast scintillator signal sampled with relatively low (100 MHz) frequency one can achieve a low neutron detection threshold and desired timing resolution.

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