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**Title:** RESPONSE FUNCTION MEASUREMENTS OF AN NE102A ORGANIC SCINTILLATOR USING AN AM-241-BE SOURCE

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**Source:** NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT 345 (3):514-519 Art No. ISSN 0168-9002 1994

**Times Cited:** 8

**Abstract:** The response function of a 125 mm diameter NE102A organic scintillation detector has been measured over the 2.7-14.8 MeV neutron energy range. The detector response function was derived from the light output for monoenergetic neutrons and gamma rays. The light output of the detector for monoenergetic neutrons was measured by selecting narrow gates in the time-of-flight (TOF) spectrum for a Am-241-Be neutron source. In order to provide check points on the data, the detector light output was also measured for monoenergetic neutrons from the D(d, n) and T(d, n) reactions. The response function of the NE102A detector is in good agreement (within 1-5%) with the published data of Cecil et al. [Nucl. Instr. and Meth. 161 (1979) 439].