

Abstract Submitted
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Elemental Analysis using Pulsed Neutrons¹ ERIC HOUCHINS, PHILLIP WOMBLE, ALEXANDER BARZILOV, JON PASCHAL, IAN RICE, JEREMY BOARD, JOSEPH HOWARD, Western Kentucky University — Elemental analysis using pulsed fast neutrons is a method in which elemental compounds can be analyzed during neutron bombardment using a pulsed d-T neutron generator. The 14 MeV neutrons impinging upon a material create a plethora of nuclear reactions including (n,n'), (n,p), (n, γ), etc. Each isotope has a specific gamma ray pattern which leads to isotope identification and the intensity of each gamma ray can determine the relative amount of that isotope. From the elemental densities, the threat potential can be discerned. We will discuss the methodology as well as a recent examination of 53 naval ordnance items found in Yorktown VA.

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