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Neutron/gamma discrimination by plastic scintillator (EJ299)

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Recently a new generation plastic scintillator (polyvinyltoluene PPO) has been developed and has shown an efficient pulse shape discrimination (PSD) neutron/gamma rays.

These techniques used to distinguish between the pulses from neutrons and the pulses from gamma rays on the differences in the pulse shapes produced.

The goal of this research effort was to test the ability of a polyvinyltoluene research sample to produce recordable, distinguishable signals in response to gamma rays and neutrons.

The results have been performed by using an Am-Be source and have been compared with different scintillators.

Pulse shape analysis allowed the definition of a new Factor of Merit (FoM) as an indicative parameter for the neutron/gamma discrimination.

The results of such separation are shown for EJ301 and EJ299.

Selected session

Accelerators and Instrumentation

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