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FPGA-based real-time n/γ Discrimination for a CLYC Scintillation Detector

In this paper, we implement a n/γ discrimination algorithm in a low power Flash FPGA for CLYC scintillation detector. In order to make the whole algorithm more suitable for the real-time radiation detection applications, pile-up rejection and noise discrimination are also implemented in FPGA logic. the power dissipation of the data process board (including 250 MS/s 12 bit ADC and front amplifier modules) equipped with the FPGA program is less than 2.4 W. Test results shows that the gamma energy resolution was 4.86%@662 keV, and the FOM value was 3.31.

Minioral

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