



Contribution ID: 103

Type: **Poster Presentation**

Data Acquisition System for Three Position-Sensitive-Counter Based Neutron Dosimeter

Neutron dosimeter is used to measure and analyze neutron dose. Because of the energy range of neutron radiation field is wide, single moderator with single counter dosimeter is hard to get a good energy response, while the multi-moderator with multi-counter dosimeter could provide a good energy response but a poor usability. Neutron dosimeter based on single moderator with multi-counter could balance the performance and usability, but there is no special measuring equipment for it in China. In this paper, a well performed data acquisition system (DAS) is presented for the neutron dosimeter which is based on single moderator with three ^3He position-sensitive counters. With the Digital Pulse Processing (DPP) techniques, six-channel waveform from the Analog to Digital Converter (ADC) is processed by digital time-coincidence and digital peak searching logics in Field-Programmable Gate Array (FPGA). A position information statistics of events which match the time-coincidence is given out by PC client. With electronics performance test and applicant test, it concludes that the DAS could provide a high resolution of position information at high counting rate, and it is a significant support for principle verification, detector performance verification and product development.

Key words: data acquisition, neutron dosimeter, position-sensitive counter

Author: Mr LIANG, Futian (University of Science and Technology of China)

Co-authors: Dr LI, Feng (University of Science and Technology of China); Prof. JIN, Ge (University of Science and Technology of China); Mr CHEN, Lian (University of Science and Technology of China)

Presenter: Mr LIANG, Futian (University of Science and Technology of China)

Track Classification: Trigger and Data Acquisition Systems