Development of hardware-software complex for carrying out of nuclear reaction experiments on the VNIIEF electrostatic tandem accelerator

Hardware-software complex was used at electrostatic tandem accelerator EGP-10 (RFNC-VNIIEF) [1] for measuring the energy and angular distributions of charged particles produced in nuclear reactions [2]. Renewal of ΔE–E telescopes and modernization of signal registration spectrometer channels were performed.

The new ΔE–E telescope developed at Ioffe Institute RAS, St.-Petersburg includes charge-sensitive amplifiers which are situated in the telescope body near to the silicon detectors. This telescope scheme results to noise decreasing and increasing of spectrometer channel energetic resolution.

Modernization of spectrometer measuring line consisted in renewal of amplifiers and measuring devices. The used amplifiers were replaced by special 8-channel "8-Chann SA-MUX"type amplifiers produced in "Tekhinvest"Ltd., Dubna. The used analog-to-digital converter was replaced by "PA27n"type 2-channel analog-to-digital converter produced in "Tekhinvest"Ltd., Dubna. Spectrometric measuring channels based on these devices are more high-speed. It helps to increase the speed of spectrometric information collection.

1. S.N.Abramovich // VANT, Ser.Phys.Nucl.React., special issue, TIYaS-XI, 1997, P.4.

2. O.P. Vikhlyantsev, L.N. Generalov, A.V. Kuryakin, I.A. Karpov, N.E. Gurin, A.D. Tumkin, S.V. Fil'chagin // Nucl.Phys. and Engineering. 2016. V. 7. № 4. P. 326–335.

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