

Referee report on «**Letter of intent to open a new project Modernization of EG-5 accelerator and development of its experimental infrastructure**».

Electrostatic generator EG-5 at FLNP is a flexible instrument for a broad range of scientific studies and applications, when a few MeV/nucleus energy is sufficient. Its advantages include steady beams, high intensities and high stability of energy of the accelerated charged particles.

In particular, with helium ions (Rutherford backscattering spectroscopy) and protons (elastic recoil detection), one studies the distribution of elements in the surface as a function of depth. The method is sensitive to all chemical elements. With these properties and parameters, EG-5 has a well-established set of useful applications. It can also serve as a source of energetic neutrons for nuclear physics.

At the generator was build a long time ago but keeps providing important possibilities for research, it needs modernization.

The goals of modernization are given (3.2 MeV/nucleus with current 50-100 μ A, infrastructure, staff etc).

The project organization and methods of modernization are clearly explained.

New research and organization methods are going to be applied in the framework of this modernization program (micro-beams, radiocarbon analysis, studies of nano-powders, new collaborations).

Requested resources look reasonable. I find important for the JINR management to see a better developed project plan with justification of costs.

Otherwise, I fully support this project and hope it will provide an increase in the overall scientific output of FLNP.

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