Reference Report on the project “Modernization of the EG-5 accelerator and development of its experimental infrastructure”.

Electrostatic generator EG-5 currently operates for solving a wide range of current scientific problems of nuclear physics, condensed matter physics, and biology and medical physics and remains the most effective and convenient nuclear physical tool at the DNP of the FLNP since 1965.

The aims of this project are to carry out a scientific program to study the processes of interaction of high-energy particles with the matter within the framework of the JINR Roadmap and the JINR Problem Thematic Plan (PTP). In order to do that the main technical task of this project is to restore the technological parameters of the EG-5 accelerator: Energy of accelerated particles is 4.1 MeV with ion beam current up to100 μA. The scope of the project includes the creation of industrial infrastructure to support the accelerator operability for 20 years, including the rise of personnel potential, the intensification of international scientific and technical cooperation, the formation of an Expertise Center in the field of electrostatic accelerator technology based on FLNP JINR with formation of associated methodological base.

I found that the contents of the new project are well described in detail the scientific program, implementation plan, SWOT analysis for various options and the timelines of the new facility. Modernization of the EG-5 accelerator will be a flexible scientific tool used for a wide range of scientific and industrial tasks. The plan to buy a new accelerator at the second stage during the period of 2024-2030 is also well explained. To purchase of a new accelerator, authors must demonstrate plentiful scientific results using the modernized EG-5 accelerator as well as the building up on its basis of a complete working team both in Dubna and in collaborating institutes and countries.

I am sure that the new project “Modernization of the EG-5 accelerator and development of its experimental infrastructure” will be solved a wide range of FLNP scientific problems. I therefore recommend this project without hesitation.

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