Review of the project

"The Development of the Facility for Measurements with Electron Test Beams at the Laboratory for Nuclear Problems"

of the Joint Institute for Nuclear Research

The present project is devoted to the development of the linear accelerator for applied and scientific goals. The energy of the accelerator is 200 MeV with the opportunity to increase it up to 800 MeV and eventually up to 2 GeV. This project gives a general description, goals and purposes, advantages and disadvantages, as well as opportunities and threats. The peculiar characteristic of the facility is that the beam parameters can be changed within the following limits: duration 0,1-3 mcs, impulse current ~0-40 mA, pulse repetition rate 1-100 Hz.

The project authors define the necessity to calibrate detector systems as the key application of the future accelerator. This task is rather important as detecting systems are necessary for both scientific research and industry needs. Among scientific goals are nuclear physics and high energy physics. For industrial application, detector systems are necessary for x-ray facilities based on linear accelerators.

In addition to the above mentioned, another possible application of the accelerator can be mentioned. Electron beams of different intensity and duration can be used for electron-beam treatment of materials, generation of electromagnetic radiation including terahertz radiation for the investigation of ultrafast processes, etc. The developing LINAC-200 accelerator with its possibility to develop different working stations seems to be very promising for this tasks. It also should be noted that using this accelerator it is possible to develop different systems for beam diagnostics, which can be used in other projects based on accelerators of charged particles.

Special mention should be made of the application of the LINAC-200 project for study goals. At this facility it will be possible to gain experience with specific elements of the accelerator, control and diagnostic systems, accelerated electron beams, etc. This opportunity is unique for staff training not only in accelerators but also other directions.

Thus the LINAC-200 project seems to be promising and high-demanded. Its implementation provided it gets enough funding and staff goes without saying.

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