

Referee Report Project MPD

“Multi-purpose detector (MPD) for studying the properties of hot and dense baryonic matter at the NICA Collider complex”

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The MPD apparatus is a 4π detector capable of identifying a large number of particles including many hadrons, electrons and photons in heavy-ion collisions in the energy range around $\sqrt{s_{NN}} = 11$ GeV. Because of the high acceptance, high event rate, and excellent particle identification capabilities it is eminently suited for the physics programme it will cover.

The energy range of the NICA research program covers the region of the maximal baryon density where the production rates of nuclear clusters with strangeness are predicted to be enhanced considerably. It will also play a major role in clarifying the production mechanism of photons and electron pairs inside the hot nuclear matter being produced.

The proposal is excellent and truly world-class. It will have a major impact on our present understanding of high-energy physics. It is no surprise that the project has the very solid support of the international community with almost 500 scientists from 11 countries participating.

The assembly and construction of the different components of the MPD detector are making good progress. The Inner Tracking System (ITS) poses a special challenge due to its technical complexity, the support from the different institutes collaborating on this component is proving to be a big boost to its final realization.

This is a large undertaking for the JINR and will contribute to maintaining the JINR at the forefront of research on an international scale.

I support this project very strongly.

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