**Referee’s report on project GALS**

Presented in this report is a status update on the GALS(GAs cell and subsequent resonance Laser ionization and Separation by magnetic field) setup currently being developed at FLNP, whose purpose is for the synthesis and study of new neutron rich heavy nuclei formed in a low-energy multi-nucleon transfer reactions. This will help in enhancing our understanding of the astrophysical nucleosynthesis and r-processes, which have received wide attention from recent developments in multi-wavelength astronomy following the detection of gravitational waves from a kilo nova explosion which yielded rich information about several nuclear astrophysical processes that could be studied in great detail in earth-bound nuclear physics experiments using radioactive beams such as those of the Flerov laboratory. This is against the backdrop of the new research directions which this proposal seeks to address.

The authors report on progress with regard to the development of the laser systems (TiSa and Dye lasers, beam diagnostic, doubling optics etc.) which will be ready for the test experiment in 2019.All other equipment ranging from the front- end system, magnet separator manufacturing, gas cell and tape station design have been completed. Furthermore, the testing experiments and real on-line run on gamma-spectroscopy of Yb isotopes which have were performed.

In the proposal, a layout of the three year program leading to experiments on production and study of properties of new heavy neutron rich nuclei at the cyclotron U400M of FLNRis presented.The construction, compositing and successful launching of this facility will open a new field of research in low-energy heavy-ion physics and therefore is highly commended.

Irecommend support for the instrumental and experimental program foreseen for the 2019-2021 duration of the project.

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