

## Status of the FLNR DRIBs Project

*Monday, 2 December 2013 10:20 (25 minutes)*

The goal of the DRIBs project is to provide more possibilities for the effective study of the properties of heavy and light exotic nuclei at the Flerov Laboratory of Nuclear Reactions. In the course of the project, physical tasks will be shared among three specialized accelerators.

The realization of project DRIBs provides for:

- ☒ creation of a Superheavy Element Factory,
- ☒ modernization of the existing cyclotrons U400 and U400M,
- ☒ creation of new generation experimental set-ups.

The DRIBs project should be realized at simultaneous implementation of the SHE research program of the FLNR.

The Superheavy Element Factory will be based on the high-current ( $A \leq 100$ ,  $E \leq 10$  MeV·A,  $I \leq 10$   $\mu$ A) universal DC-280 cyclotron. This accelerator is constructed in a new experimental hall equipped according to radiation safety class II. At the SHE Factory, the synthesis and study of properties of superheavy elements, a search for new reactions for the SHE synthesis, and the study of the chemical properties of new elements will be performed. The construction and assembly of the cyclotron magnet have begun.

The U400 cyclotron is used as a stand-alone accelerator for the synthesis and study of nuclear and chemical properties of superheavy elements and as a post-accelerator for the production of exotic nuclei beams. The modernization of the accelerator and its experimental hall is scheduled for 2016–2017. Subsequently, the accelerator will be used for the study of fusion-fission, quasi-fission and multi-nucleon transfer reactions, nuclear spectroscopy of heaviest isotopes, and exotic nuclei structure and reactions.

The modernization of the U400M cyclotron is almost completed. It will operate in stand-alone mode and as a driver accelerator for the study and production of light exotic nuclei.

New experimental set-ups are under development.

**Primary author:** Dr POPEKO, Andrey (Flerov Laboratory of Nuclear reactions, Joint Institute for Nuclear Research)

**Co-authors:** Mr GULBEKIAN, Georgy (FLNR JINR); Prof. ITKIS, Mikhael (JINR); Prof. DMITRIEV, Sergey (FLNR JINR); Prof. OGANESSIAN, Yury (FLNR JINR)

**Presenter:** Dr POPEKO, Andrey (Flerov Laboratory of Nuclear reactions, Joint Institute for Nuclear Research)

**Session Classification:** Structure Session I