

Referee Report

“Status of the Factory of Superheavy Elements: 4.2. Ion Source”

For previous 7 years period and also for period of 2017-2023 one of the main objective in the development of the research infrastructure in JINR is the project DRIBs-III (Dubna Radioactive Ion Beams) as a priority task in Laboratory of Nuclear Reactions (FLNR). It includes three main parts: i) construction of cyclotron DC-280 to provide accelerated ions (expected ion beam intensity is 10 pμA for ions with masses < 100); ii) reconstruction of cyclotron U400M and iii) reconstruction of cyclotron U400. Cyclotron DC-280 should provide 5000 of working hours in year 2018. The most important task of SHE at FLNR is the research of super heavy elements with Z=113-118 and accelerating ions of ^{50}Ti , ^{54}Cr or ^{58}Fe allowing to reach Z=119, 120.

Based on the brief information in the report “Status of the Superheavy Elements Factory”, a new all-permanent magnet 14 GHz ECR ion source DECRIS-PM has been developed (cooperation of JINR and ITT-group, Moscow) to be used at the high voltage platform above the DC-280 cyclotron magnet yoke. The ion source is under tests at the test bench providing the intense beams of Ar^{8+} , Ar^{11+} , Ar^{12+} and Kr^{15+} . A superconducting ECR-ion source will be finally installed on the second HV platform of the DC-280 cyclotron.

It is clear, that there is a necessity to finish the construction of ion source for SHE facility. I recommend the continuation of the activities of the ion source group.

I would like to ask to provide the following information:

- 1) The planned budget for construction of ion source and already spent budget.
- 2) The payment to external organizations (e.g. ITT-group).
- 3) The expected date of the full operation of ion source.

Prague, 7.6.2017

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