**SYLA – RUSSIAN 4TH GENERATION SYNCHROTRON**

V. S. Dyubkov1,3, S. M. Polozov1,3, E. D. Tsyplakov2,3

*1National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia; 2Moscow Institute of Physics and Technology, Moscow, Russia; 3National Research Center «Kurchatov Institute», Moscow, Russia*

E-mail: vsdyubkov@mephi.ru

For more than 40 years synchrotron-based x-ray sources as well as free-electron lasers based on linear accelerators have been widely used in materials science, spectroscopy, crystallography, research of fast processes, medicine, molecular biology and biochemistry, medicine, and other applied and scientific tasks. Nowadays state-of-art technologies make it possible to design and develop specialized synchrotron that is especially aimed to generate SR by means of insertion devises, such as ondulators or wigglers. Such specialized circular electron accelerators have been called SR sources of the 4th generation. Currently, there are already several operating [1-3] and a number of such specialized SR sources are under design [4-6]. A number of 3rd generation light sources are under modernization up to 4th generation nowdaus. In order to advance the development of the research infrastructure of the Russian Federation, by Decree of the President of the Russian Federation No. 356 of 25.06.2019, a storage synchrotron (the 4th generation SR source) with an energy of 6 GeV and an equilibrium value of the horizontal emittance of the electron beam of no more than 70 pm∙rad (SYLA, former USSR4) is being developed on the basis of NRC KI [7,8]. This paper presents the results of the development of the machine lattice as well as top-up linac injector.

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