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# THEORETICAL AND EXPERIMENTAL STUDIES OF TECHNOLOGY DEVELOPMENT OF LAUNCH VEHICLES (LV) WITH IMPROVED ENVIRONMENTAL CHARACTERISTICS ON THE EXAMPLE OF PROMISING LV LAUNCHED FROM THE BAIKONUR COSMODROME

**Abstract**

Theoretical and experimental studies of technology development of launch vehicles (LV) with improved environmental characteristics on the example of promising LV launched from the Baikonur cosmodromes V. Trushlyakov Omsk state technical university, Omsk, Russia B. Suimenbayev., Zh. Suimenbayeva B., Yermoldina G. Institute of Information and Computing Technologies, Almaty, Kazakhstan

The proposed project aims at a reduction of the possible environmental/ecological impact associated with LV from the Baikonur cosmodrome. This is obviously am important and potentially the proposed work appears as a novel approach, simply by introducing systems that will prevent residual rocket propellant to remain in the falling stages of the LV. If successful the work may have significant impact on the environmental/ecological consequences of the space activities not only from Baikonur but also in a more general sense. No doubt that the proposed results – if achieved – may contribute to a reduction of health problems that may be associated to space activities. The main idea of the development is based on the gasification of unused propellant residues in the tanks due to the combustion of injected propane gas and oxygen in the tanks. Completion of the design of the LV, the program for controlling the movement of the spent stage of the LV at the atmospheric part of the trajectory of descent is carried out on the basis of the recommendations of the modernized information and analytical system of the cosmodrome, which assesses the impact on the environment in the areas of the fall of the spent stages of the LV.