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Multi - MW laser for new applications

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The analysis of the results achieved in the area of creation and practical use of the laser technology, rockets and space crafts, systems of flight control, and materials allows to develop a very wide complex of experimental, technical and technological works on the space vehicle prototype creation, able to be launched by laser propulsion mechanism and the laser system for launching as itself. The innovative project of such a works has received the name Impulsar Cooperation, which was not so long ago formed, includes many organizations of the rocket industry of Russia. Project of multi-module pulse-periodic CO_2 GDL system for launching with parameters: Specific energy value- 20-40kJ/kg, temperature of the gas-1800K and pressure- 4,0Mpa will be presented. Optical system of laser pulsed energy chain delivery and optical matrix of laser engine receiver will be discussed as well. In the report the basic characteristics of the engine will be compared with theoretical predictions and important stages of further technology implementation will be observed. Relying on the gigantic in its scale cooperation of different branches of science and industry organizations, first of all on the powerful experimental and production base, it is very possible to use the accumulated potential for full scale setup creation and for launching of such a Nano and Micro vehicles during the upcoming 3 years. Another very important task for such a laser is the orbital scale conductive channel in air and even vacuum development. Solar battery and ionospheric energy transmission from the space is the most valuable application for high repetition rate P-P GDL.

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