

SPACE PROPULSION SYMPOSIUM (C4)  
Propulsion System (1) (1)

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CREATION OF FAMILY OF LPRE FOR ADVANCED RUSSIAN AND FOREIGN  
LAUNCH-VEHICLES ON THE BASIS OF RD191 ENGINE

**Abstract**

JSC "NPO Energomash" has extensive experience in creation of main liquid propellant rocket engine on LOX+kerosene. Over past three decades there have been created some of the most advanced rocket engines, such as: RD170/RD171 for "Energia - Buran" space system and "Zenit" LV, RD180 for "Atlas 5" LV and RD191 for "Angara" LV family. Today NPO Energomash has line of main liquid propellant rocket engines with a thrust range from 60 up to 800 tons. In the process of creation of these LPRE NPO Energomash' specialists received experience of creation of modifications of this line engines for future launch vehicles, both Russian and foreign ones. The paper gives a description of RD191 engine for "Angara" LV family, and shows approaches to use its modernizations for Korean space launch-vehicle KSLV (RD151 engine), American "Antares" LV (RD181 engine), Russian Soyuz 2.1v (RD193 engine), as well as promising Russian reusable rocket-space system MRKS (RD195 engine).