

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

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THE DEVELOPMENT OF LOX/LH2 ENGINE IN CHINA

Abstract

The LOX/LH2 engine occupies a special position in the field of space propulsion because of its high specific impulse and environmental friendliness, which has always been the concern and attention of the world. Since 1960s, China has been developing the LOX/LH2 engine. A number of key technologies have been grasped; a lot of practical experience has been obtained. The first GEO communication satellite of china was launched into orbit, the LOX/LH2 engine was used in the upper stage of the rocket in 1984. After that, we developed the YF-75 engine with 8-ton thrust level, which has been the high performance cryogenic upper stage engine in service since 1994 in china. We are now developing the YF-75D upper stage expander cycle engine and the YF-77 main engine with 50-ton thrust level for China's new generation launch vehicle CZ-5, and have made significant technological progress in design, materials, manufacturing and test. A more powerful LOX/LH2 engine is needed in the future, so the key technologies of this engine system and components, such as thrust chamber, turbopump and valves are under developing.