

MATERIALS AND STRUCTURES SYMPOSIUM (C2)

Space Structures II - Development and Verification (Deployable and Dimensionally Stable Structures) (2)

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SUCCESSSES AND PROBLEMS OF THE INFLATABLE RE-ENTRY DESCENT TECHNOLOGY DEVELOPMENT.

Abstract

The new technology is described shortly that may be employed in a cosmic techniques – the using of inflatable elements as an additional braking device of the landers, that shall descent on the surface of the planets with atmosphere. The results are adduced on designing, experimental and flight tests of the re-entry vehicles with inflatable braking device (IBD) and a thermal protection system (TPS) of its bladder achieved at this time in Russia, USA and in Europe. The basic features of the construction indicated space vehicles are described. These vehicles are: in Russia – the research probe Penetrator Mars-96 mission's, Demonstrator and small meteorological stations of the Mars Net project that are carried on Inflatable Re-entry Device Technology (IRDT), in Europe – the vehicles of the Inflatable Re-entry Technology (IRT) project, in USA – the vehicle of the Inflatable Re-entry Vehicle Experiment (IRVE). Also the perspective planes are considered of the development of such re-entry vehicle. There are vehicles to return and rescue of the sputniks, to delivery of the cargo from International Space Station (ISS), to land of the manned station and the net of the small meteorological stations on the Mars's surface.