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SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT (D3)
Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development (2)

Author: Mr. Lakshya Datta
University of Petroleum and Energy Studies, India, lakshyavdatta@gmail.com

Dr. Ugur Guven
United States, drguven@live.com

ADVANCED AND COST EFFECTIVE WASTE DISPOSAL AND TREATMENT METHODS FOR SPACE STATIONS

Abstract

One of the biggest problems faced by the International Space Station and other past space missions is the proper disposal of waste material generated on board by humans and experiments. While these waste materials are currently stored in proper containers within the premises of the spacecraft, there is a lot of scope for the potential betterment of the space waste disposal systems. Contrary to popular belief, this space waste cannot simply be expelled into the vastness of space under the premise of the Big Sky Theory for it would lead to the creation of more and more space debris over time and would pose a threat to the future space missions. This paper attempts to shed light on these issues and discusses new space waste disposal techniques which are more advanced, safe and cost effective. Astronautical hygiene is a field that is yet to be fully explored and developed. This paper deals with several aspects of the waste removal and storage systems. The main advantage of a better space disposal system is the enhanced safety of the spacecrafts and the crew on board the spacecrafts. It is essential for future space missions and will help develop technologies for colonization of Mars and perhaps even other solar systems and galaxies in the future.