Paper ID: 27501
poster
student

13th IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)
Innovative Concepts and Technologies (1)

Author: Dr. Zonggao Mu
China Academy of Space Technology (CAST), China

Mr. Chun Li
China Academy of Space Technology (CAST), China
Prof. Wenfu Xu
China
Dr. Yongsheng Xu
China Academy of Space Technology (CAST), China
Prof. ZHANG YINGCHUN
China
Dr. Na Yao
Qian Xuesen Laboratory of Space Technology, China
Ms. Liping Nie
China

A NOVEL MEDICAL TREATMENT MICRO-SATELLITE BASED ON AUTONOMOUS ADSORPTION TECHNOLOGY

Abstract

Abstract: The on-orbit servicing task of the failure and high-valuable spacecraft always should be performed by the astronaut or the space robot, this makes the space activities own the disadvantages of high risks and high difficulties. While micro-satellite technology will lead to major changes in space technology and its applications, because of its light weight, low cost, small size, good performance and short development cycle etc., So a novel concept of MEDICAL TREATMENT MICRO-SATELLITE is proposed to realize the on-orbit repairing task for the high-valuable and collaborated satellite, The failure satellite can be treated or upgraded by the Medical Treatment Micro-satellite based on the autonomous adsorption technology through the process of on-orbit autonomous adsorption, standardized module replacement and function take-over. Different from the traditional on-orbit servicing space robot, this class of micro-satellite owns the characteristics of standardized module, short manufacturing cycle, various ways of deployments and abroad applications. Furthermore, this paper demonstrated the feasibility of Medical Treatment Micro-satellite by analysis the key technologies of the theory of autonomous adsorption, wireless communication, combination dynamics and characteristic parameters identification and so on.