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CHANGES OF POLYDIMETHYLSILOXANE'S PROPERTY WITH DIFFERENT FINENESS BEFORE  
AND AFTER MICROBIAL CONTAMINATION UNDER THE THE CONDITION OF SPACE  
STATION INTERNAL ENVIRONMENT**Abstract**

In recent decades, microbial contamination has become a serious problem for long-term space station and star base that researchers have to be considered. The studies of Mir space station have shown that over 80 species of microorganisms have been discovered during the 15 years of the station operation and most of them are frequently found on the interior and the surface of structural materials and equipment. These microorganisms attack certain areas, cause the biodegradation of polymers and the biocorrosion of metals, and even worse, lead to the operation problems. Therefore, in order to provide the basis for material's antibacterial treatment, it is necessary to study the microbial effects on the properties of materials with different surface structures. In this paper, polydimethylsiloxane (PDMS) with different fineness, a unique silicon rubber usually used for international space station, was selected to conduct microbial contamination experiment with particular bacteria and fungi under the condition of space station internal environment, and the changes of quality, hydrophobicity, and three-dimensional surface structure of PDMS before and after microbial contamination had been obtained.