

SPACE EXPLORATION SYMPOSIUM (A3)
Poster Session (P)

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THE SEALING TECHNOLOGY OF LUNAR SAMPLES

Abstract

In order to collect lunar samples and return to the Earth, prevent the lunar samples from being contaminated, maintain the original state of lunar surface and also ensure the reliability of the ground scientific analyzing based on lunar samples returned to Earth. The lunar samples are sealed in high vacuum and low leakage rate. According to the Technical requirement of lunar sample sealing and the ground analysis method of sealing lunar sample by using indium alloy and knife-edge as primary vacuum seal and silicon rubber as redundant seal against primary seal failure is proposed and some relevant researches of sealing technology is carried out. The helium mass spectrometer leak detector is used to measure the leak rates of seal, The experimental results prove that this method can obtain relatively low leak rates and can achieve the requirement of lunar sample sealing.