

MATERIALS AND STRUCTURES SYMPOSIUM (C2)  
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DEVELOPMENT TRENDS OF MATERIALS FOR METAL SEALED STRUCTURE OF SPACECRAFT

**Abstract**

The advancement of space technology requires the progress of materials. In the past decades, the strength of Al alloy used in sealed structure is the key feature to the operation of the manned spacecrafts. For the feature long-life manned spacecraft, not only the strength but also the fracture toughness as well as the excellent processing property of the strength, extendibility, fracture toughness and weld ability is discussed in the paper, including Al alloy A, B and C. The analysis shows that Al alloy C has a better performance concerning the strength, fracture toughness and processing properties. According to the research on materials of metal sealed structure, the approaches of development and future trends of the materials for spacecraft metal sealed structure are revealed in this paper. Comparing the characteristic of some metal materials, it is proposed that Al alloy C should be chosen in the future with an advantage.