

MATERIALS AND STRUCTURES SYMPOSIUM (C2)  
Smart Materials and Adaptive Structures (5)

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ADAPTIVE DEFORMABLE SKIN RESISTANT TO HIGH TEMPERATURE TECHNOLOGY  
RESEARCH

**Abstract**

The adaptive deformable technology will revolutionize and enable flight vehicle to operate under a wide range of varying flight conditions, including optimizing aerodynamic performance, reducing the aerodynamic heating, increasing flying range, etc. A great deal of progress has been made recently in the development of adaptive flight vehicle. The deformable flexible skin sample resistant to high temperature was the important structure for the vehicle. In this article, the reentry vehicle local structure has been introduced for the deformable flexible skin. The skin sample used SMA smart materials to drive has been designed and fabricated and gained the mechanics parameter. The experimentation shows that, the deformable flexible skin sample resistant to high temperature was satisfied the 600 centigrade environment and reusable anticipated deformation.