

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

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POTENTIAL USAGE OF THERMOELECTRIC GENERATORS IN THERMAL PROTECTION
SYSTEM FOR REUSABLE LAUNCH VEHICLES (RLV)

Abstract

Traditional TPS only aims to reduce the aerodynamic heat which, however, can be used through energy direct conversion by employing thermoelectric generators (TEGs) embedded in TPS to produce electric power. The purpose of this research was to explore the possibility of the usage of thermoelectric materials in the thermal protection system for reusable launch vehicles, in which way TPS and power supply system can be integrated. However, there are some bottlenecks need to be solved, which will be discussed further and some approaches will also be proposed accordingly.