

SPACE POWER SYMPOSIUM (C3)
Space Power Technologies and Techniques (2)

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RESEARCH ON SEVERAL KEY PROBLEMS OF SSPC IN ADVANCED SPACE POWER
DISTRIBUTION SYSTEM

Abstract

Advanced space power distribution system should be high reliable, long-life, smart and easy to maintain. The solid-state power controller (SSPC), as a new kind of electrical power switch, has played an important role in the construction of the new space power distribution system. Aiming at the application requirements of SSPC in advanced space power distribution system, this paper focus on such following problems: the bus short-circuit protection and over-current protection of inverse time, power-on and power-off for capacitive and inductive loads, electromagnetic compatibility, cooperative working problems of multi-modules in series, parallel current sharing, maintenance on orbit, isolation and sampling. For the above-mentioned problems, the thorough analysis and resolution measures have been carried out and a new reliable and intelligent space power distribution system based on SSPC is put forward. Its characteristic and applicability have also been given.