SPACE POWER SYMPOSIUM (C3)
Advanced Space Power Technologies and Concepts (3)

Author: Mrs. Huahui Zhang
Shanghai Academy of Spaceflight Technology (SAST), China Aerospace and Technology Corporation (CASC), China, lunahh@sohu.com

Dr. Liu Yong
China, lunahh@sohu.com
Dr. He Xiaobin
China, lunahh@sohu.com
Dr. Liu Shichao
China, lunahh@sohu.com
Prof. Qian bin
China, lunahh@sohu.com

# RESEARCH ON KEY TECHNOLOGIES OF LUNAR PROBE POWER SYSTEM

**Abstract**

Based on the great achievements in satellite application and manned space, the human explore a broader space mission—lunar probe. Lunar project plan in our country as a national key project has been extensively development. Lunar project stage III mission, formed by orbiter, lander, patrol unit and ascenders, which work as a joint working group, has more variety work mode in power system. Focusing on the moon exploration plan in China's long-term development, and considering of power system characteristics of many device working together, the lunar probe power system key technologies is researched and discussed in this paper. First , the reasonable control strategy under the joint work is analyzed and solved; Then the technology of guarantee lander enough supply of energy by the dormancy wake-up technical is researched; Research of light miniaturization design and efficient energy transformation of the joint power controllers through the use of new materials, new technology and new topology is done; Finally, the key technical problems in the application of the nuclear power system in China's future lunar probe system was discusses. The key technologies of energy distribution and management in the lunar probe's where many device working together are put forward and solved, and the future development direction of technology is discussed, which have the important meaning to promote China's lunar probe program technology level.