

深空探测学报(中英文)(双月刊)

第7卷 第5期 2020年10月

目 次

专题：火星巡视探测技术

(主持人：孙泽洲 研究员，北京空间飞行器总体设计部；
贾 阳 研究员，北京空间飞行器总体设计部)

星球车技术发展综述	贾阳, 孙泽洲, 郑旸, 等	(419)
无人星球车非几何障碍感知研究进展	张天翼, 彭松, 田鹤	(428)
火星车系统动力学建模与仿真分析	潘冬, 李德伦, 袁宝峰, 等	(437)
火星车转移坡道机构展开策略分析与验证	鄢青青, 刘卫, 满剑锋, 等	(445)
火星车机构集成控制系统设计与实现	周东, 徐晓伟, 贾阳, 等	(450)
火星车图像压缩存储系统与关键算法设计	徐勇, 贾阳, 郭坚, 等	(458)
火星车低密度纳米气凝胶隔热材料制备及性能研究	艾素芬, 向艳超, 雷尧飞, 等	(466)
太阳电池阵火星环境发电建模仿真	石海平, 陈燕, 贾阳, 等	(474)
中国首次火星探测任务火星车有效载荷定标试验	张宝明, 朱岩, 王连国, 等	(481)

论 文

深空探测生物再生生命保障系统研究进展和发展趋势	刘红, 姚智恺, 付玉明	(489)
植物在微重力下的种子繁殖和营养繁殖	Elizabeth Kordyum, Olena Hedukha, Olga Artemeko, et al	(500)
亚贡用于宇航员生命支持的前景	Lidiya Mishchenko, Olga Molodchenkova, Alina Dunich, et al	(508)

期刊基本参数:CN 10-1707/V * 2014 * b * A4 * 98 * zh + en* P * ¥30.00 * 1000* 12* 2020-10

Journal of Deep Space Exploration

Vol. 7 No. 5 (October, 2020)

CONTENTS

Topic: Mars Patrol Exploration Technology

(Guest Editor: Professor SUN Zezhou, Beijing Institute of Spacecraft System Engineering;
Professor JIA Yang, Beijing Institute of Spacecraft System Engineering)

Overview on Development of Planetary Rover Technology

..... JIA Yang, SUN Zezhou, ZHENG Yang, et al (419)

Research Progress of Non-geometric Hazard Perception for Unmanned Planetary Rover

..... ZHANG Tianyi, PENG Song, TIAN He (428)

Dynamics Modeling and Simulation Analysis of Mars Rover System

..... PAN Dong, LI Delun, YUAN Baofeng, et al (437)

Study and Verification on Deployment Strategy of Transfer Ramps for Mars Rover

..... YAN Qingqing, LIU Wei, MAN Jianfeng, et al (445)

Design and Implementation of Integrated Control System for Mars Rover Mechanism

..... ZHOU Dong, XU Xiaowei, JIA Yang, et al (450)

Design of Image Compression Storage System and Key Algorithm for Mars Rover

..... XU Yong, JIA Yang, GUO Jian, et al (458)

Preparation and Characterization of Ultra-low Density Nano-aerogel Insulation Materials for Mars Rover

..... AI Sufen, XIANG Yanchao, LEI Yaofei, et al (466)

Modeling and Simulation for Power Generation of Solar Array in Martian Surface Environment

..... SHI Haiping, CHEN Yan, JIA Yang, et al (474)

Calibration of Mars Rover's Payloads for China's First Mars Exploration Mission

..... ZHANG Baoming, ZHU Yan, WANG Lianguo, et al (481)

Article

Research Status and Development Trend of Bio-regenerative Life Support System for Deep Space Exploration

..... LIU Hong, YAO Zhikai, FU Yuming (489)

Seed and Vegetative Propagation of Plants in Microgravity

..... Elizabeth Kordyum, Olena Hedukha, Olga Artemeko, et al (500)

Prospects of Yacon (Polymnia Sochifolia Poepp. & Endl) Using for Astronauts Life Support

..... Lidiya Mishchenko, Olga Molodchenkova, Alina Dunich, et al (508)