

## · 科学前沿 ·

月球大深度保真取芯探矿机器人系统构想与设计 谢和平, 张国庆, 罗 通, 高明忠, 李存宝, 刘 涛 1

## · 聚焦国家重点研发计划 ·

堰塞湖风险评估快速检测与应急抢险技术和装备研发研究构想与成果展望  
蔡耀军, 杨兴国, 张利民, 周家文, 彭文祥, 范 刚 10

## · 堰塞湖灾变机理与模拟 ·

栏目主编 周家文

崩滑碎屑体堵江成坝研究综述与展望 郑鸿超, 石振明, 彭 铭, 周圆媛 19

金沙江白格堰塞湖溃决过程数值模拟 钟启明, 陈生水, 单熠博 29

金沙江沃达潜在滑坡诱发灾害链成灾过程数值模拟 刘 威, 何思明 38

## · 水利与土木工程 ·

基于逐点去约束法的索桁张拉结构形状判定及自应力模态求解方法 薛素铎, 鲁 建, 李雄彦, 刘人杰 47

初始湍流强度与耙架剪切对全尾砂絮凝行为的影响 焦华喆, 刘晨生, 吴爱祥, 沈慧明, 杨亦轩 54

声波透射法测试路用气泡混合轻质填料的试验研究 刘 鑫, 孙东宁, 盛 柯, 洪宝宁, 濮仕坤 62

基于二元极限理论的流域洪水资源利用现状与潜力分析 李晓英, 郑浩然, 吴淑君, 姜 健 70

深溪沟与白沙河交汇区水流运动 3 维数值模拟 高永胜, 叶 龙, 王以远, 许泽星, 王协康 78

三峡建库前后洞庭湖对下荆江的顶托与消落作用研究 陈 栋, 渠 庚, 郭小虎, 余明辉 86

超载频度对大坝稳定模型试验结果的影响研究及工程应用 朱自强, 祁 玲, 杨宝全, 陈 媛, 张 林 95

地震作用下混凝土-堆石组合坝墙体位移及动土压力研究 王建新, 杨 贵, 刘汉龙, 唐新军 103

考虑损伤状态阈值模糊性的重力坝地震易损性分析 王 媛, 李泽发, 吴震宇, 范雪枫, 田紫圆 110

## · 机械工程 ·

一种四足磁吸附爬壁机器人运动学分析及仿真 吕志忠, 张成维, 钟功祥, 张伟杰 121

五轴机床旋转轴几何误差分析与补偿 郭世杰, 张东升 130

预设性能控制算法对机械臂运动控制的改进 赵 京, 王 炎, 陈雨青 140

五轴侧铣加工瞬时未变形切屑厚度计算模型 王立平, 段飞宇, 佘 昊, 杜 丽, 袁 星 148

数控旋压机床旋轮架广义空间位置维动态特性分析 殷 勤, 王 玲, 殷国富, 廖启豪 153

天平刚度对测力系统输出结果影响的研究 吕金洲, 陈光雄, 朱 琪, 赵晓男, 吴波文 161

三伸缩杆驱动的光伏板视日追踪系统设计与研究 郑 涛, 郑 飞, 芮 喜, 季 祥, 牛 魁, 何 洁 171

## · 信息工程 ·

余弦适应性骨架差分进化算法 熊小峰, 刘啸焯, 郭肇禄, 张文生 180

基于LWE问题的发送方可否认公钥加密方案 吴文渊, 郑嘉彤, 冯 勇 192

## · 化学工程与材料工程 ·

高温超低碳IF钢在轧制过程中的氧化实验研究 苏福永, 宋 锐, 温 治 200

对偶表面粗糙度对 Nano-SiO<sub>2</sub> 改性 PTFE 复合材料摩擦学性能的影响  
高 贵, 李瑞红, 龚 俊, 王宏刚, 杨东亚, 任俊芳, 陈生圣 207

征稿简则

封三

[ 期刊基本参数 ] CN51-1773/TB \* 1957 \* b \* A4 \* 216 \* zh \* P \* ¥20.00 \* 1200 \* 25 \* 2020-03

本期责任编辑: 赵 婧 英文校订: 江成发, 林鹏智, 刘艳丽, 张泽天

出版日期: 2020年03月20日

编辑: 张凌之, 黄小川, 张 琼, 赵 婧, 李轶楠

## · SCIENTIFIC FRONTIERS ·

- Scheme and Design of a Lunar Large-depth and In-situ Condition-holding Coring Robot System .....  
 ..... XIE Heping, ZHANG Guoqing, LUO Tong, GAO Mingzhong, LI Cunbao, LIU Tao 1

## · FOCUS ON STATE KEY RESEARCH DEVELOPMENT PROGRAM OF CHINA ·

- Research Framework and Anticipated Results of the Rapid Detection of Risk Assessment, Research and Development of Emergency Disposal  
 Technology and Equipment of Dammed Lakes .....  
 ..... CAI Yaojun, YANG Xingguo, ZHANG Limin, ZHOU Jiawen, PENG Wenxiang, FAN Gang 10

## · HAZARD EVOLUTION MECHANISM AND SIMULATION OF DAMMED LAKES ·

Column Editor ZHOU Jiawen

- Review and Prospect of the Formation Mechanism of Landslide Dams Caused by Landslide and Avalanche Debris .....  
 ..... ZHENG Hongchao, SHI Zhenming, PENG Ming, ZHOU Yuanxuan 19
- Numerical Modeling of Breaching Process of Baige Dammed Lake on Jinsha River ..... ZHONG Qiming, CHEN Shengshui, SHAN Yibo 29
- Numerical Simulation of the Evolution Process of Disaster Chain Induced by Potential Landslide in Woda of Jinsha River Basin .....  
 ..... LIU Wei, HE Siming 38

## · HYDRAULIC &amp; CIVIL ENGINEERING ·

- Method of Shape Determination and Solving Self-stress Mode of Cable-truss Tensile Structure Based on Constraints Move Method .....  
 ..... XUE Suduo, LU Jian, LI Xiongyan, LIU Renjie 47
- Influence of Initial Turbulence Intensity and Rake Frame Shear on Flocculation Behavior of Unclassified-tailings .....  
 ..... JIAO Huazhe, LIU Chensheng, WU Aixiang, SHEN Huiming, YANG Yixuan 54
- Experimental Study on Detecting Foamed Mixture Lightweight Filler by Acoustic Transmission Method .....  
 ..... LIU Xin, SUN Dongning, SHENG Ke, HONG Baoning, PU Shikun 62
- Analysis of Current and Potential Flood Resources Utilization in Basin Based on Bivariate Limit Theory .....  
 ..... LI Xiaoying, ZHENG Haoran, WU Shujun, LOU Jian 70
- 3D Numerical Simulation of Flow Characteristics at Confluence Zone Between Shenxigou Stream and Baisha River .....  
 ..... GAO Yongsheng, YE Long, WANG Yikui, XU Zexing, WANG Xiekang 78
- Study of the Supporting and Falling Impact of Dongting Lake on the Lower Jingjiang River Before and After Construction of Three Gorges Dam .....  
 ..... CHEN Dong, QU Geng, GUO Xiaohu, YU Minghui 86
- Influence Research and Engineering Applications of Overload Frequency on Dam Stability Model Tests Results .....  
 ..... ZHU Ziqiang, QI Ling, YANG Baoquan, CHEN Yuan, ZHANG Lin 95
- Research on Wall Displacement and Dynamic Earth Pressure of Concrete-Rockfill Combination Dam Under Earthquakes .....  
 ..... WANG Jianxin, YANG Gui, LIU Hanlong, TANG Xinjun 103
- Seismic Fragility Analysis of Gravity Dams Considering the Fuzziness of Damage States Thresholds .....  
 ..... WANG Yuan, LI Zefa, WU Zhenyu, FAN Xuefeng, TIAN Ziyuan 110

## · MECHANICAL ENGINEERING ·

- Kinematics Analysis and Simulation of a Quadrupe Magnetic Adsorption Wall-climbing Robot .....  
 ..... LYU Zhizhong, ZHANG Chengwei, ZHONG Gongxiang, ZHANG Weijie 121
- Geometric Error Analysis and Compensation of Rotary Axes of Five-axis Machine Tools ..... GUO Shijie, ZHANG Dongsheng 130
- Improved Motion Control of Manipulator by Prescribed Performance Control Algorithm ..... ZHAO Jing, WANG Yan, CHEN Yuqing 140
- Calculation Model of Instantaneous Undeformed Chip Thickness in 5-axis Flank Milling Process .....  
 ..... WANG Liping, DUAN Feiyu, SI Hao, DU Li, YUAN Xing 148
- Dynamic Characteristics Analysis for Spinning Frame of CNC Spinning Machine Based on Generalized Manufacturing Space .....  
 ..... YIN Qin, WANG Ling, YIN Guofu, LIAO Qihao 153
- Research of the Balance Stiffness on the Output Impact of a Force-measurement System .....  
 ..... LYU Jinzhou, CHEN Guangxiang, ZHU Qi, ZHAO Xiaonan, WU Bowen 161
- Design and Research of Three-extensible-rod Solar Tracking Drive System for Photovoltaic Panels .....  
 ..... ZHENG Tao, ZHENG Fei, RUI Xi, JI Xiang, NIU Kui, He Jie 171

## · INFORMATION ENGINEERING ·

- Adaptive Bare-bones Differential Evolution Based on Cosine ..... XIONG Xiaofeng, LIU Xiaochan, GUO Zhaolu, ZHANG Wensheng 180
- Sender-side Public Key Deniable Encryption Scheme Based on LWE ..... WU Wenyuan, ZHENG Jiatong, FENG Yong 192

## · CHEMICAL ENGINEERING &amp; MATERIAL ENGINEERING ·

- Experimental Research on Oxidation of Ultra-low Carbon Interstitial-free Steel at High Temperatures in Rolling .....  
 ..... SU Fuyong, SONG Rui, WEN Zhi 200
- Effect of Counterpart Surface Roughness on the Tribological Properties of Nano-SiO<sub>2</sub> Modified PTFE Composites .....  
 ..... GAO Gui, LI Ruihong, GONG Jun, WANG Honggang, YANG Dongya, REN Junfang, CHEN Shengsheng 207