

中国核心期刊(遴选)数据库期刊

中国建材科技

CHINA BUILDING MATERIALS SCIENCE & TECHNOLOGY

2022年第6期

总第186期



中國建築材料科學研究總院
CHINA BUILDING MATERIALS ACADEMY

科技領先 服務建設



中國建築材料科學研究總院
CHINA BUILDING MATERIALS ACADEMY

主管主办单位：中国建筑材料科学研究总院有限公司

国际标准刊号：ISSN1003-8965
国内统一刊号：CN11-2931/TU
广告经营许可证：京朝市监广登字第20170021号

出版单位：《中国建材科技》杂志社有限公司
Publishing unit: CBMST Magazine Co., Ltd.



社 长：张忠伦
President: Zhang Zhonglun
总 编：姚燕
Editor-in-Chief: Yao Yan
执行主编：刘永民
Managing editor: Liu Yongmin
设计编审：陈涛
Director of Design: Chen Tao
排 版：刘昕羊
Typesetter: Liu Xinyang

编辑部 (Tel) : 010-51167253
广告部 (Tel) : 010-51167253
传 真 (Fax) : 010-51167253
地 址 (Add) : 北京市朝阳区管庄东里
邮 编 (Zip Code) : 100024
网 址 : <http://zgjkj.ijournals.net.cn/>

出版日期：2022年12月25日
Publication Date: December 25, 2022
发 行：北京市邮政局
Issue: Post Office in Beijing
订 阅：全国各地邮政局
Subscribe to: Post Office across the country
邮发代号：2-491
国外代号：BM3868
国外总发行：中国出版对外贸易公司
The total issued abroad: China National Publishing Industry Trading Corporation

定价：人民币30元 美元5元
Price: RMB30.00 US\$5

启事：本刊编辑部保留一切版权，如欲转载，须获本刊编辑部同意。
Notice: All rights reserved Editor, if reproduced, subject to the approval of our editorial board agreed.



检测与认证

- 嗅辨员筛选及分组优化在建材产品气味浓度评价中的应用
..... 刘实华, 袁庆丹, 关红艳, 裴一朴, 郭中宝, 赵文燕 1
- 水泥基自流平砂浆收缩性能测试评价技术探究
... 祝海龙, 张丹武, 赵松鹤, 李赫, 樊海龙, 刘建钊, 王强强, 王羽佳, 车显东 5
- 国内外立体仓库建筑地面平整度测试方法的对比和分析
..... 王强强, 王亮亮, 吴佳俐, 李萍, 孙仕超, 祝海龙, 耿薇薇 9
- 真空玻璃保温性能检测技术研究及应用
..... 曹毅然, 于伟, 周云, 梅文琦 14
- 单体燃烧热释放测试影响因素的探讨
..... 匡龙, 朱剑, 罗坤 17

水泥与混凝土

- 机制砂颗粒特性对高强混凝土性能的影响
..... 宁勇伟, 陈迎周, 范泽润, 王帅兵, 曾凡伟 21
- SAP 对水泥水化热及混凝土收缩性能的影响研究
..... 杨晖, 李昊, 王行行, 刘鹏英 25
- 高强自密实混凝土抗压强度影响因素分析
..... 黄友芬, 高奇, 李伟, 徐高友 30
- 基于专利分析的植被混凝土生态护坡技术发展态势研究
..... 王艳妮, 胡永权, 郑玉荣, 付爽, 罗天祥 34
- 高效喷洒水玻璃溶液对再生粗骨料性能的影响
..... 黄芸, 魏兆峰, 康爱红, 沙瑞媛, 尹锦明, 肖成会 40

综述

- 建筑 3D 打印力学性能研究综述
..... 李特, 李琦 44

试验与研究

- 用后镁碳砖再生工艺的生命周期评价和能耗分析
..... 王靖东, 龚先政, 周丽玮, 刘宇, 辉福美 49
- 石英玻璃厚壁管制备工艺的研究
..... 花宁, 徐肖飞, 秦建鸿, 隋镁深, 刘昌良, 王友军 55
- 氧化锆陶瓷成型工艺研究
..... 徐先豹, 王营营, 董金格, 毕鲁南, 赵杰, 王伟伟, 王晓东, 王飞, 隋松林 59

无人造石生产环境体系的研究
..... 张宗军, 赵宝军, 吴琛, 邹长根, 谭鹏 62

胶粉/SBS 复合改性高模量沥青混合料性能研究
..... 张晨晨, 潘春梅, 孙艺涵, 孙鹏程, 迟凤霞 65

裂隙岩体在单轴加载过程中变形、破裂规律的 PFC2D 数值模拟研究
..... 张顺金 69

技术与应用

基于灰色关联分析方法对边坡稳定性的影响因素敏感分析
..... 崔伟杰, 周建, 郭真真, 卢博瑶, 徐跃东, 章世强 74

深层平板载荷试验应用与探究
..... 章世强, 崔伟杰, 周建, 卢博瑶, 徐跃东, 徐秋蓓 78

建筑材料有害物质释放量检测用环境舱空气处理系统装置设计
..... 陈功平, 王圣 81

装配式外墙外保温系统安全性能试验模型分析
..... 管旭东, 邓夺, 苏敏 84

砂土介质中薄膜压力传感器的标定试验研究
..... 柳伟, 朱怀龙 87

桥位风场特性研究方法探讨
..... 薛亚飞 91

抑制谐波电气火灾防控系统的关键技术要求
..... 王宇轩, 黄敦奕, 屈天翊 94

经验交流

基于正态分布从强度方面评价水泥质量的应用
..... 胡清社, 胡彬 97

水泥水溶性六价铬来源及防治措施研究动态
..... 黄鸿兴, 陈秉慈, 张朝辉, 刘骏, 尹娜 99

健全并落实全员安全生产责任制推动构建“大安全”管理体系
..... 李龙飞 102

某工程边坡稳定性分析与治理方法
..... 郭亚光, 纪迎超 105

碎石桩复合地基处理与处理效果检测分析研究
..... 郝佳福, 张力峰, 张朋, 齐松松, 吴园平 107

填海地区旋挖灌注桩混凝土充盈系数控制
..... 张善钊, 杨志伟 109

CBMST

CHINA BUILDING MATERIALS SCIENCE & TECHNOLOGY

CHINA BUILDING
MATERIALS
SCIENCE & TECHNOLOGY

December, 2022

(Bimonthly)

Vol.31 No6

(Total No.186)

Sponsored by
China Building Materials Academy
Editor & Publisher
CBMST Magazine Co., Ltd.

President: Zhang Zhonglun
Editor-in-Chief: Yao Yan
Managing editor: Liu Yongmin
Design and edit: Chen Tao
Typesetter: Liu Xinyang

Address
Guangzhuang East,
Chaoyang District, Beijing, China
Postcode 100024

Tel. 0086-10-51167253
Fax. 0086-10-51167253
[Http://zgjckj.ijournals.net.cn/](http://zgjckj.ijournals.net.cn/)

Ad.Licence No.0059
Periodical Registration
ISSN1003-8965
CN11-2931/TU

Subscription Rates
RMB 30.00 per copy
USD 5.00 Per copy

Contents 目录

Application of sniffer selection and optimization in the evaluation of odor concentration of building materials	LIU Shihua, YUAN Qingdan, GUAN Hongyan, PEI Yipu, GUO Zhongbao, ZHAO Wenyan1
Research on test and assessment of shrinkage for cementitious self-levelling mortar	ZHU Hailong, ZHANG Danwu, ZHAO Songhe, LI He, FAN Hailong, LIU Jianzhao, WANG Qiangqiang, WANG Yujia, CHE Xiandong 5
Comparison and analysis of testing methods of building floor flatness for stereoscopic warehouse at home and abroad	WANG Qiangqiang, WANG Liangliang, WU Jiali, LI Ping, SUN Shichao, ZHU Hailong, GENG Weiwei 9
Research and application of vacuum glass thermal insulation testing technology	CAO Yiran, YU Wei, ZHOU Yun, MEI Wenqi 14
Discussion on the influence factors of single burning item heat release test	KUANG Long, ZHU Jian, LUO Kun17
Influence of manufactured sand with different particle characteristics on properties of high-strength concrete	Ning Yongwei, Chen Yingzhou, Fan Zerun, Wang Shuaibing, Zeng Fanwei 21
Effect of SAP on hydration heat of cement and concrete shrinkage performance	YANG Hui, LI Hao, WANG Hanghang, LIU Pengying 25
Analysis of influencing factors on compressive strength of high strength self-compacting concrete	HUANG Youfen, GAO Qi, LI Wei, XU Gaoyou 30
Development trend of ecological slope protection technology of vegetation concrete based on patent analysis	WANG Yanni, HU Yongquan, ZHENG Yurong, FU Shuang, LUO Tianxiang 34
Effect of high-efficiency spraying of water glass solution on properties of recycled coarse aggregate	HUANG Yun, WEI Zhaofeng, KANG Aihong, SHA Ruiyuan, YIN Jinming, XIAO Chenghui 40
Review on mechanical properties of building 3D printing	LI Te, LI Qi 44
Life cycle assessment and energy consumption analysis of regeneration process of used magnesia carbon bricks	WANG Jingdong, GONG Xianzheng, ZHOU Liwei, LIU Yu, HUI Fumei 49
Study on preparation technology of thick wall quartz glass tube	HUA Ning, XU Xiaofei, QIN Jianhong, SUI Meishen, LIU Changliang, WANG Youjun 55
Study on forming technology of zirconia ceramics	XU Xianbao, WANG Yingying, DONG Jingge, BI Lunan, ZHAO Jie, WANG Weiwei, WANG Xiaodong, WANG Fei, SUI Songlin 59
Study on environmental system of inorganic artificial stone production	ZHANG Zongjun, ZHAO Baojun, WU Chen*, ZOU Changgen, TAN Peng 62
Research on properties of high modulus crumb rubber / SBS composite modified asphalt mixture	ZHANG Chenchen, PAN Chunmei, SUN Yihan, SUN Pengcheng, CHI Fengxia 65
PFC2D numerical simulation of fractured rock mass deformation and rupture law under uniaxial loading	ZHANG ShunJin 69
Sensitivity analysis of influencing factors of slope stability based on grey relational analysis method	CUI Weijie, ZHOU Jian, GUO Zhenzhen, LU Boyao, XU Yuedong, ZHANG Shiqiang 74
Application and exploration of deep plate load test	ZHANG Shiqiang, CUI Weijie, ZHOU Jian, LU Boyao, XU Yuedong, XU Qiubei 78

Contents
目录

Design of air treatment system of environment chamber for detection of harmful substances released from building materials	CHEN Gongping, WANG Sheng 81
Analysis of safety performance test model of prefabricated external wall's thermal insulation system	GUAN Xudong, DENG Duo, SU Min 84
Study on the calibration of thin film pressure sensors in sandy soil	LIU Wei, ZHU Huailong 87
Discussion on research methods for wind field characteristics at bridge site	XUE Yafei 91
Key technical requirements for harmonic suppression electrical fire prevention and control system	WANG Yuxuan, HUANG Dunyi, QU Tianyi 94
Application of evaluating cement quality from strength based on normal distribution	HU Qingshe, HU Bin 97
Research progress on sources and prevention of water-soluble hexavalent chromium in cement	HUANG Hongxing, CHEN Bingci, ZHANG Zhaohui, LIU Jun, YIN Na 99
Improve and implement all staff safety production responsibility system to promote the construction of "big safety" management system	LI Longfei 102
Stability analysis and treatment method of an engineering slope	GUO Yaguang, JI Yingchao 105
Study on the treatment of gravel pile composite foundation and effect detection	HAO Jiafu, ZHANG Lifeng, ZHANG Peng, QI Songsong, WU Yuanping 107
Control of concrete filling coefficient of rotary cast-in-place pile in reclamation area	ZHANG Shanzhao, YANG Zhiwei 109