

国家新闻出版广电总局认定的学术期刊 《中国核心期刊(遴选)数据库》来源期刊

ISSN 1004-9592  
CN 12-1220/U

# 港口技术

PORT ENGINEERING TECHNOLOGY

6

2022年12月

第59卷(卷终)

【总第275期】



中国交通建设集团有限公司主管  
中交第一航务工程勘察设计院有限公司主办

港工技术 第五十九卷 第六期 卷终

二〇二二年十二月 总第二百七十五期

## 目 次

### 总体工艺

- 镇江粮食出运码头改造工程技术方案 ..... 曹宏生, 范平易 (1)  
简析船舶进出坞及引船系统关键工艺技术 ..... 高 原, 余培金 (5)  
散货堆场单机智能化生产作业操作系统研究 ..... 亢学功, 吕崇晓 (9)

### 结构

- 新型浮式坞门的挡水扶壁结构设计要点简析 ..... 马 勇, 张宏铨, 陈良志, 覃 杰 (13)  
基于 GAP 单元的窄桩台高桩码头优化设计 ..... 田中南, 赵瑞东, 贝建忠 (18)  
高桩码头结构中欧美日规范对比研究 ..... 沈启亮, 骆俊彬, 许建武 (24)  
利用强制确定法对某复杂护岸工程的统筹设计 ..... 刘 速 (29)  
拦污网锚定基础结构型式优化研究 ..... 熊京川, 孙运佳 (34)

### 综合

- 附加旋转圆柱涡激振动发电装置能量获取性能研究 .....  
..... 及春宁, 孔令臣, 徐晓黎, 韩 涛, 许 栋 (38)  
海上风力发电的现状及展望 ..... 许立国, 任建宇 (45)  
基于 BIM 的智慧工地在某限制性航道工程中的应用 .....  
..... 刘鲁袆, 郑 松, 张京娥, 洪 剑, 牛作鹏 (49)  
水下钻孔破岩爆破振动衰减规律试验研究 ..... 姚方明, 范怀斌, 杨 超, 覃 峰, 陈其龙 (54)  
基于无人机倾斜摄影的桥梁三维建模研究 .....  
..... 毛 琳, 王 超, 余星宇, 钱 嘉, 崔弥达, 侯士通, 吴 刚 (58)  
大管径钢管浆体输送磨损特性与生命周期分析 ..... 袁超哲, 杨增海, 施宝林, 骆佳成, 朱 平 (63)  
港口企业数字化转型技术应用现状分析 ..... 魏 飞 (68)  
简论点源污染在水环境治理中的处理措施 ..... 王柯力, 周云亮 (72)  
中小型国际邮轮航站楼设计简析 ..... 杨驰驰, 宋 宁 (75)  
液化天然气 (LNG) 码头的 BIM 正向设计 ..... 崔冠辰, 艾绍平, 李娇娇, 冀坷帆 (79)  
智慧楼宇给排水设计 ..... 祝 超, 赵秀慧, 张自强, 刘馨怡 (85)  
淤泥地质大坡度盾构管片病害分析及预防技术 ..... 蔡惠华 (88)

### 地基基础

- 抛砂挤淤工程中挤淤深度的计算方法研究 ..... 卢晓东, 李晓舟, 詹田进 (93)  
真空-堆载预压联合加固道路软基沉降规律研究 ..... 黄艳军, 张艳林, 刘夕奇, 王 聪, 王东星 (97)  
海上挤密砂桩加固风电基础原位载荷试验分析 ..... 王 华, 孙洋波, 孟 欢, 曹胜敏 (102)

### 工程勘察

- 基于毫米波雷达的全天候料高和安息角测量技术 ..... 姜 波, 刘志明, 沈 阅 (108)  
土附着力试验影响因素研究 ..... 陈琪林, 于 伟, 凌柏平, 杨恺民 (112)  
RTK 三维水深测量质量因素及其验证 ..... 胡志渠 (117)

封面：天津港北疆港区件杂货码头

(摄影 邢迎辉)

## Contents

### Planning and Technology

Reconstruction Plan of Grain Shipping Wharf in Zhenjiang .....	Cao Hongsheng, Fan Pingyi (1)
Key Technologies Involving in Ship Docking, Undocking and Pilot System.....	Gao Yuan, Yu Peijin (5)
Research on Single-Machine Intelligent Operation System Applied in Bulk-Cargo Yard .....	Kang Xuegong, Lv Chongxiao (9)

### Structure

Analysis of Design Essentials of Water-Retaining Wall Applied to New-type Floating Dock Gate .....	Ma Yong, Zhang Hongquan, Chen Liangzhi, Qinjie (13)
Optimized Design of Narrow Piled Wharf Based on SAP 2000_GAP Element .....	Tian Zhongnan, Zhao Ruidong, Bei Jianzhong (18)
Comparative Study on Piled Quay Structures Specified in Chinese, European, American and Japanese Standards .....	Shen Qiliang, Luo Junbin, Xu Jianwu (24)
Overall Design of One Complex Revetment Project By Using Enforced Determination Method.....	Liu Su (29)
Study on Structural Optimization of Anchor Foundation of Trash-Intercept Net .....	Xiong Jingchuan, Sun Yunjia (34)

### General

Study on Energy Harvest Performance of Vortex-Induced Vibration Power Generator with Additional Spinning Cylinders .....	Ji Chunling, Kong Lingchen, Xu Xiaoli, Han Tao, Xu Dong (38)
Present Situation and Prospects of Offshore Wind Power .....	Xu Liguo, Ren Jianyu (45)
Research and Application of Smart Construction Site Based on BIM in a Restricted Waterway Project .....	Liu Luyi, Zheng Song, Zhang Jing'e, Hong Jian, Niu Zuopeng (49)
Experimental Study on Attenuation Law of Vibration Caused by Underwater Drilling and Blasting .....	Yao Fangming, Fan Huaibin, Yang Chao, Qin Feng, Chen Qilong (54)
Research on 3D modeling of Bridge Based on UAV Tilt Photography .....	Mao Lin, Wang Chao, Yu Xingyu, Qian Jia, Cui Mida, Hou Shitong, Wu Gang (58)
Analysis of Wear Characteristics and Life Cycle of Large Diameter Steel Pipe in Slurry Transportation.....	Yuan Chaozhe, Yang Zenghai, Shi Baolin, Luo Jiacheng, Zhu Ping (63)
Analysis of Present of Digitization Application by Port Enterprises .....	Wei Fei (68)
Brief Analysis of Countermeasures against Point Pollution Source in Water Environment Improvement .....	Wang Keli, Zhou Yunliang (72)
Brief Analysis of Design of Mid- & Small-Sized International Cruise Terminals .....	Yang Chichi, Song Ning (75)
Forward Design of LNG Terminal in BIM Mode .....	Cui Guanchen, Ai Shaoping, Li Jiaoqiao, Ji Kefan (79)
Design of Water Supply and Drainage of Smart Buildings.....	Zhu Chao, Zhao Xiujiu, Zhang Ziqiang, Liu Xinyi (85)
Fault Analysis and Prevention Technology of Shield Segments under Condition of Large Slope and Silt Geology .....	Cai Huihua (88)

### Foundation

Study on Calculation Method of Design Depth Applied in Squeezing-Silt-with-Sand Projects .....	Lu Xiaodong, Li Xiaozhou, Zhan Tianjin (93)
Settlement Law of Soft Roadbed Reinforced By Vacuum-Surcharge Preloading.....	Huang Yanjun, Zhang Yanlin, Liu Xiqi, Wang Cong, Wang Dongxing (97)
Analysis of In-Situ Load Test of Wind Power Foundation Reinforced by Compaction of Offshore Sand Piles .....	Wang Hua, Sun Yangbo, Meng Huan, Cao Shengmin (102)

### Engineering Investigation

All-Weather Measurement Technology for Height of Material Pile and Angle of Repose Based on Millimeter-Wave Radar .....	Jiang Bo, Liu Zhiming, Shen Yue (108)
Study on Factors Affecting Soil Adhesion Test Results .....	Chen Qilin, Yu Wei, Ling Baiping, Yang Kaimin (112)
Quality Factor and Verification of RTK 3D Bathymetric Survey .....	Hu Zhiqiu (117)

**Supervisory Authorit:** China Communications Construction Group Co., Ltd.

**Sponsored by:** China Communications Construction Company First Harbor Consultants Co., Ltd.

**Edited by:** Port Engineering Technology Editorial Office    **Tel:** (86-22)89560099    **Publishing Code:** ISSN 1004-9592

**Address:** Fdine Tower, Dongting Road Hexi District Tianjin, China    **Post Code:** 300220

**Editor-in-Chief:** Qin Fushou    **Editor:** Hu Hao, Fan Ruxia, Ji Menghan, Yin Jie    **English Editor:** Xie Peng

**E-mail:** ggbjb@fdine.net    **Website:** www.ggbjb.com

**Published & Issued by:** Port Engineering Technology Editorial Office