

江苏船舶

JIANGSU CHUANBO

江苏省造船工程学会会刊

2023 年第 1 期

(1980 年创刊 双月刊)

第 40 卷第 1 期 · 总第 213 期

2023 年 2 月 28 日出版



主管单位：江苏省交通运输厅

主办单位：江苏省造船工程学会

江苏省船舶设计研究所

编辑出版：《江苏船舶》编辑部

主 编：戴雪良

副 主 编：韩海林

地 址：镇江市正东路 5 号

电 话：0511-84422493

传 真：0511-84422493

电子信箱：jscbbjb@163.com

网站地址：http://jscb.cbpt.cnki.net

邮政编码：212003

发行单位：《江苏船舶》编辑部

内芯印刷：镇江新民洲印刷有限公司

中国标准刊号：ISSN 1001-5388
CN32-1230/U

广告经营许可证号：3211005050010

发行范围：公开发刊

定价：18.00 元/册

目 次

船舶设计与研究

JS 2023-1-01 140 米级打桩船关键技术的研究

杨 辉 孙 莉(1)

JS 2023-1-02 下倾管-垂直立管严重段塞流数值分析

沈鼎盛 袁 鹏 徐 骁 陈林烽 王庆丰(3)

JS 2023-1-03 子空间在线辨识算法原理及应用技术研究

赵 昂(7)

JS 2023-1-04 沿海中小型开体泥驳总体设计关键点分析

曹仁丹 成 辰(11)

船舶动力装置

JS 2023-1-05 全新 ACD320 系列发动机研究与开发

徐先进 朱树林 梅加化 高申德(14)

JS 2023-1-06 基于航次营运效益的不定期船航速优化研究

茆沐嘉 王 琪 马来好 陆 萍(18)

JS 2023-1-07 纵向阻尼器在长轴系船舶中的轴系减振应用

卢永勇 朱春雷 卢 斌 郭冬雪(22)

船舶电气

JS 2023-1-08 国产滑差离合器及控制系统在拖船上的应用

刘亚洲(25)

船舶材料与焊接

JS 2023 - 1 - 09 LNG 液货舱绝热材料的研究进展

徐 娜 马建青 徐 骁(28)

JS 2023 - 1 - 10 镍基合金复合管焊接技术研究

马银萍 韦 刚(32)

船舶建造

JS 2023 - 1 - 11 基于精益管理下的设计和制造应用研究

翟亚军 孟庆华(34)

JS 2023 - 1 - 12 豪华邮轮薄板建造控制变形措施研究

王永强(38)

JS 2023 - 1 - 13 螺杆式变幅机构的跑合试验设计 张春林(40)

JS 2023 - 1 - 14 重型模块总装船台地基基础承载力研究

朱波波(43)

企业管理

JS 2023 - 1 - 15 新《政府会计制度》下中国船级社会计核算的变化分析

邹怡雯 李志伟(45)

JS 2023 - 1 - 16 船舶与海工装备智能制造发展路径研究

李佛尘 欧庆奎(49)

广告索引

江苏润扬船业有限公司 (封面)

江苏大津重工有限公司 (封二)

江苏省无锡船厂有限公司 (封三)

江苏通洋船舶有限公司 (封底)

江苏省船舶设计研究所有限公司 (扉页)



第八届编委会

主 任:方建华

副主任:葛世伦 张志强 徐 斌 包国齐
戴雪良

委 员:

马乔林	马荣飞	方建华	王立社
王如华	王国东	王洪琪	王 峰
王 铁	王樟木	邓志良	包国兴
包国齐	生佳根	刘建忠	刘维亭
华锦伟	吕 津	孙锁庆	朱广明
朱仁庆	祁学胜	张卫东	张光明
张志强	张依莉	张雨华	张 浦
杨兴林	汪 澄	邹家生	邹耀明
陈文军	陈汉金	陈明辉	陈 琪
陈鹤荣	周社宁	周胜贤	周瑞平
郑迎革	侯建华	姚寿广	姜若松
施 伟	费 瑛	赵永富	骆宁森
倪其军	徐 斌	贾玉康	戚志群
梁 晋	黄金山	葛世伦	蒋志勇
韩海林	鲁春林	窦培林	潘 丰
颜跃忠	戴雪良	魏 建	

· 本刊入编:《中国期刊全文数据库》、《中国学术期刊综合评价数据库》、《万方数据—数字化期刊群》、《中国核心期刊(遴选)数据库》、《中国学术期刊(光盘版)》、中国知网、《中文科技期刊数据库》、《超星期刊域出版平台》,凡在本刊发表的论文和报道将随刊全文上网,本刊向作者支付的稿酬已含期刊全文上网服务报酬,不再另付上网报酬。如有异议请在来稿中注明。

· 请勿一稿多投。

万方数据

JIANGSU SHIP

Vol. 40, No. 1(Serial 213), February 2023(Bimonthly)

TRANSACTIONS OF JIANGSU PROVINCIAL SOCIETY OF NAVAL ARCHITECTURE AND MARINE ENGINEERING

CONTENTS

JS 2023-1-01 Research on Key Technology of a 140-meter Pile Driver YANG Hui, SUN Li(1)

To meet the demand for the gradual development of offshore engineering construction towards offshore and deepwater areas, based on the summary of existing research results on pile drivers, a 140-meter class pile driver with the highest pile frame, the largest pile lifting capacity, the most extended pile driving length, and the strongest wind and wave resistance in the world has been developed. Through research on the main dimension selection, ship positioning technology, and lightweight technology for hull and pile frame structures, key technical issues have been resolved, which meet the specific operational needs of shipowners.

JS 2023-1-02 Numerical Analysis of Severe Slugging Flow in Downwardly inclined Pipe-Vertical Riser SHEN Dingsheng, YUAN Peng, XU Xiao, CHEN Linfeng, WANG Qingfeng(3)

JS 2023-1-03 Research on the Principle and Application Technology of the Subspace Online Identification Algorithm ZHAO Ang(7)

JS 2023-1-04 Analysis of the Key Points in Coastal Small and Medium-Sized Split Hopper Barges Overall Design CAO Rendan, CHENG Chen(11)

JS 2023-1-05 Research and Development of New ACD320 Series Engine XU Xianjin, ZHU Shulin, MEI Jiahua, GAO Shende(14)

Aiming at the problem that high-power engines using natural gas fuel are prone to misfire and detonation, and it is difficult to achieve lean combustion, the ACD320 series of medium-speed natural gas and dual fuel engines are taken as the research object to carry out ignition technology research. Firstly, the technical schemes of pre-chamber spark plug ignition and micro pilot oil compression ignition are proposed, and the highly universal structural design of the two prototypes is carried out; Then, combined with thermodynamic performance calculations, engine performance and emissions methods are optimized. The results show that achieving lean combustion of gaseous fuels is feasible by increasing ignition energy.

JS 2023-1-06 Research on Speed Optimization of Tramping Ship Based on Voyage Operation Benefits MAO Mujia, WANG Qi, MA Laihao, LU Ping(18)

JS 2023-1-07 Application of Longitudinal Damper in Shafting Vibration Reduction of Long Shafting Ships LU Yongyong, ZHU Chunlei, LU Bin, GUO Dongxue(22)

JS 2023-1-08 Application of Domestically Produced Slip Clutch and Control System on Tug LIU Yazhou(25)

JS 2023-1-09 Research Progress of Thermal Insulation Materials for LNG Liquid Cargo Tank XU Na, MA Jianqing, XU Xiao(28)

To effectively block the heat transfer between the liquid cargo tank of LNG carriers and the outside world, and to reduce the loss of LNG during storage and transportation, as well as the low-temperature freezing damage to hull structures caused by the gas release and leakage, thermal insulation materials for the liquid cargo tank of LNG carriers are studied. Firstly, several mainstream LNG cargo tank technologies are summarized. Then, several physical properties of thermal insulation materials are analyzed from the perspective of reducing cold loss, improving safety and saving energy, and four main thermal insulation materials, namely expanded perlite, glass wool, polystyrene foam and polyurethane foam, are compared and analyzed from the perspective of thermal insulation performance, construction cost and material advantages and disadvantages. Finally, the application feasibility of new thermal insulation materials for the next-generation LNG cargo tanks is discussed. The research shows that the new aerogel thermal insulation material will be the development direction of LNG liquid cargo tank thermal insulation material, which conforms to the environmental protection (green) standard. Composite material products with integrated thermal insulation and waterproofing will become the star of the thermal insulation material market.

JS 2023-1-10 Research on Welding Technology of Nickel-Base Alloy Composite Pipe MA Yinping, WEI Gang(32)

JS 2023-1-11 Research on Design and Manufacturing Application Based on Lean Management ZHAI Yajun, MENG Qinghua(34)

JS 2023-1-12 Research on Deformation Control Measures for Luxury Cruise Ship Thin Plate Construction WANG Yongqiang(38)

JS 2023-1-13 Design of Running-in Test of Screw Luffing Mechanism ZHANG Chunlin(40)

JS 2023-1-14 Research on Bearing Capacity of Foundation of Heavy Module Assembly Shipway ZHU Bobo(43)

JS 2023-1-15 Analysis of the Changes in China Classification Society's Accounting under the New Government Accounting System ZOU Yiwen, LI Zhiwei(45)

JS 2023-1-16 Research on the Development Path of Intelligent Manufacturing of Ships and Marine Equipment LI Fochen, OU Qingkui(49)