



ISSN 2095-8676
CN 44-1715/TK
CODEN NFNYJK

南方能源建设

SOUTHERN ENERGY CONSTRUCTION

2024年3月 第11卷第2期 Vol.11 No.2

— 海洋牧场、新型储能 —

封面文章 海上风电与海洋牧场融合发展趋势与技术挑战

——阳杰[✉], 张建华, 马兆荣, 刘东华, 王洪庆, 尹梓炜



主办单位：南方电网数字传媒科技有限公司
中国能源建设集团广东省电力设计研究院有限公司

目次

◆ 海洋能源与海洋牧场

- 海上风电与海洋牧场融合发展趋势与技术挑战 阳杰, 张建华, 马兆荣, 刘东华, 王洪庆, 尹梓炜 (1)
多浮筒全潜式海上风机整机拖航运动特性试验对比 齐喜玲, 乐丛欢, 任建宇, 张浦阳, 丁红岩, 齐晓亮 (17)
近海深水区混凝土半潜型浮式风机一体化计算与耦合动力特性分析 陈嘉豪, 高一帆, 尹梓炜, 郑灿, 曲晓奇 (31)
海上漂浮光伏发电技术及其融合发展展望 岳云峰, 彭欣然, 王洪庆, 卢斌 (42)
基于5G技术的海上风电通信系统研究 李铜林, 曾甫龙 (51)
基于交能融合的分布式海上风电选址与布置 王晴勤, 温国标 (59)
统一硬化本构在海上风电大直径单桩桩-土分析中的应用 马兆荣, 刘振韬, 王金玺, 张友虎 (68)
砂土中海上倾斜螺旋群桩基础承载特性研究 杨伟华, 胡雪扬, 张浦阳, 甘毅, 陈青山 (82)

◆ 新型储能

- 长持续时间储能体系研究现状及发展展望 郑彦春, 陕超伦, 张晋宾 (93)
基于不同液化方式的液态二氧化碳储能系统研究进展 郑平洋, 郝佳豪, 常鸿, 张振涛, 杨俊玲, 李亚南, 张家俊, 越云凯, 荆亚楠 (102)
Highview Power 液化空气储能中试装置热力学分析 孙潇, 蔡春荣, 罗志斌, 王小博, 朱光涛, 裴爱国 (112)
基于MPC的光-储协同调频优化策略 严小珊, 唐惠玲, 吴杰康, 周治廷, 龙泳丞, 冯国华 (125)
使用工况对锂离子电池电化学性能的影响 辛甜, 高啸天, 肖凯, 罗志斌, 黄肇和, 张乃庆 (139)
压缩空气储能技术研究现状及发展趋势 袁照威, 杨易凡 (146)
一种双工质气体压缩储能系统及其可行性分析 郑开云, 池捷成, 张学锋 (154)

◆ 氢能技术

- 中国氢燃料电池汽车市场发展现状及展望 刘畅, 林汉辰, 史陈芳达, 胡明月 (162)
水资源对我国绿氢产业的影响分析 张明震, 张灿, 吴秀山, 程前 (172)

◆ 能源经济

- 政策视角下光伏全产业链的地区差异性分析 黄斌, 赵伟, 廖力达, 肖孟, 黄佳亮, 谢佩伶 (179)
广东能源与经济发展关系演变的实证分析 吴东奇, 甘俊文, 郭经韬, 余欣梅, 廖毅 (189)

◆ 能源材料

- 全光谱碳基陶瓷纤维及其在海水淡化中的应用 邱肖盼, 席玉林, 朱景帅 (198)

◆ 信息

- 广告目次 (58)

CONTENTS

◆ Marine Energy and Marine Ranch

- Development Trend and Technical Challenges of the Integration of Offshore Wind Turbine with Marine Ranch YANG Jie, ZHANG Jianhua, MA Zhaorong, LIU Donghua, WANG Hongqing, YIN Ziwei (1)
- Comparison of Integrated Towing Motion Performance for Multi-Column Semisubmersible Floating Offshore Wind Turbines QI Xiling, LE Conghuan, REN Jianyu, ZHANG Puyang, DING Hongyan, QI Xiaoliang (17)
- Integrated Calculation and Coupled Dynamic Analysis of a Concrete Semi-Submersible Floating Wind Turbine in Offshore Deep Water Area CHEN Jiahao, GAO Yifan, YIN Ziwei, ZHENG Can, QU Xiaoqi (31)
- Prospect of Offshore Floating Photovoltaic Power Generation Technology and Its Integrated Development YUE Yunfeng, PENG Xinran, WANG Hongqing, LU Bin (42)
- Research on Offshore Wind Power Communication System Based on 5G Technology LI Tonglin, ZENG Fulong (51)
- Site Selection and Layout of Distributed Offshore Wind Power Based on Energy and Transportation Integration · WANG Qingqin, WEN Guobiao (59)
- Application of Unified Hardening Model in Soil-Pile Analysis of Offshore Wind Power Large-Diameter Monopiles MA Zhaorong, LIU Zhentao, WANG Jinxi, ZHANG Youhu (68)
- Research on Bearing Characteristics of Offshore Inclined Helical Pile-Group Foundations in Sandy Soil YANG Weihua, HU Xueyang, ZHANG Puyang, GAN Yi, CHEN Qingshan (82)

◆ New Energy Storage

- Current Research Status and Development Prospects of Long Duration Energy Storage System · ZHENG Yanchun, SHAN Chaolun, ZHANG Jinbin (93)
- Research Progress of Liquid Carbon Dioxide Energy Storage System Based on Different Liquefaction Methods ZHENG Pingyang, HAO Jiahao, CHANG Hong, ZHANG Zhentao, YANG Junling, LI Yanan, ZHANG Jiajun, YUE Yunkai, JING Yanan (102)
- Thermodynamic Analysis of Highview Power's Liquid Air Energy Storage Pilot Plant SUN Xiao, CAI Chunrong, LUO Zhibin, WANG Xiaobo, ZHU Guangtao, PEI Aiguo (112)
- Optimization Strategy for Collaborative Frequency Modulation of PVs-ESs Based on MPC YAN Xiaoshan, TANG Huiling, WU Jiekang, ZHOU Zhiting, LONG Yongcheng, FENG Guohua (125)
- Influence of Service Conditions on Electrochemical Performance of Lithium-Ion Batteries XIN Tian, GAO Xiaotian, XIAO Kai, LUO Zhibin, HUANG Zhaohe, ZHANG Naiqing (139)
- Research Status and Development Trend of Compressed Air Energy Storage Technology YUAN Zhaowei, YANG Yifan (146)
- An Energy Storage System with Binary Cycle Gas Compression and Its Feasibility Analysis · ZHENG Kaiyun, CHI Jiecheng, ZHANG Xuefeng (154)

◆ Hydrogen Technology

- Development Status and Outlook of Hydrogen Powered Fuel Cell Vehicle Market in China LIU Chang, LIN Hanchen, SHI Chenfangda, HU Mingyue (162)
- Analysis of the Impact of Water Resources on China's Green Hydrogen Industry · ZHANG Mingzhen, ZHANG Can, WU Xiushan, CHENG Qian (172)

◆ Energy Economy

- Analysis on Regional Difference of the Whole PV Industry Chain from the Perspective of Policy HUANG Bin, ZHAO Wei, LIAO Lida, XIAO Meng, HUANG Jialiang, XIE Peiling (179)
- Empirical Research on the Evolution of Relationship Between Energy and Economic Development in Guangdong WU Dongqi, GAN Junwen, GUO Jingtao, YU Xinmei, LIAO Yi (189)

◆ Energy Material

- Full-Spectrum Carbon-Based Ceramic Fibers and Their Application in Seawater Desalination QIU Xiaopan, XI Yulin, ZHU Jingshuai (198)

◆ Information

- Advertisement List (58)