

中文核心期刊
中国科技核心期刊

ISSN 2096-3203
CN 32-1866/TM
CODEN DGJIAA

电力工程技术

ELECTRIC POWER ENGINEERING TECHNOLOGY

三峡工程



2

ISSN 2096-3203



国网江苏省电力有限公司 主办
江苏省电机工程学会

2022年3月

第41卷 第2期 总第202期

万方数据

DIANLI GONGCHENG JISHU

2022年3月28日出版

目次

一种多功能模块化直流故障限流器拓扑及控制策略
.....张亮, 李丹栋, 史明明, 葛雪峰, 袁宇波(105)

中文核心期刊
中国科技核心期刊
RCCSE中国核心学术期刊(A)
WJCI 科技期刊世界影响力指数报告来源期刊
荷兰《文摘与引文数据库》(Scopus)收录期刊
日本科学技术振兴机构数据库(JST)收录期刊
俄罗斯《文摘杂志》(AJ, VINITI)收录期刊
美国《乌利希期刊指南(网络版)》收录期刊
华东地区优秀期刊
江苏省精品期刊

(双月刊)

基于非合作博弈的风-光-氢微电网容量优化配置
..... 希望·阿不都瓦依提, 吕海鹏, 晁勤(110)
计及碳配额的混合储能综合微能源网优化运行研究
..... 邱纯, 应展烽, 冯奕, 颜建虎(119)
多台电力电子变压器云-边脉宽调制同步控制策略
..... 陈庆, 葛雪峰, 史明明, 杨景刚, 许涛, 张宸宇(128)

高压电压技术

一种电弧引燃电缆的电气火源模拟方法
..... 刘旭晖, 朱振宇, 郭玥, 靖子洋, 吴淑群, 张潮海(136)
沿面闪络用非介入式表面电位测量研究
..... 范路, 耿伊雯, 王亚林, 尹毅(143)
基于频域介电谱的油纸绝缘套管局部受潮诊断研究
..... 陈晓琳, 符小桃, 吴乾东, 赵浩翔, 李元, 穆海宝(149)
绝缘子污秽等级的高光谱特征优化识别技术研究
..... 沈龙, 钱国超, 彭兆裕, 李谦慧, 杨坤, 马御棠(156)

智能电网技术

基于反向变异麻雀搜索算法的微电网优化调度
..... 宋扬, 石勇, 刘宝泉, 康家玉(163)
基于改进 Faster-RCNN 的输电线路巡检图像检测
..... 魏业文, 李梅, 解园琳, 戴北城(171)
智能变电站二次系统失效风险评估方法
..... 杨庆, 朱道华(179)

电机与电器

直线永磁磁通切换电机推力脉动抑制方法分析
..... 郝雯娟, 王宇(186)
基于相似日和相似时刻的变压器顶层油温预测方法
..... 谭风雷, 徐刚, 李义峰, 陈昊, 何嘉弘(193)
基于先验方差的发电机惯量辨识数据质量评估
..... 叶洪波, 姜阳, 陈雪梅, 崔勇, 俞越, 陆超(201)

技术探讨

基于改进机器学习的输电线路弧垂温度估计方法
..... 宰红斌, 吴浩林, 王昊, 王凯(209)
基于改进最小叉熵法的区域综合能源系统经济效益评估
..... 赵尔敏, 张斌, 李惠珍, 吴卓聪, 雷霞(215)
基于改进样板机法的风光互补新能源电站容量配比优化
..... 李延和, 杨立滨, 郝丽丽, 刘祥风, 吕肖旭(224)

电力工程技术

主管单位: 国网江苏省电力有限公司

主办单位: 国网江苏省电力有限公司

江苏省电机工程学会

出版单位: 《电力工程技术》编辑部

编辑部主任: 江 林

值班编辑: 钱 悦

地 址: 南京市江宁区帕威尔路1号

邮政编码: 211103

电 话: 025-86556860(编辑)

025-86558553(编辑)

025-86558020(编务)

传 真: 025-86558020

投稿网址: www.epet-info.com

电子信箱: epet@ijournals.cn

创刊时间: 1982年

发行方式: 国内发行

发行单位: 南京市邮政管理局

邮发代号: 28-305

国内定价: 26.00元

订 阅: 全国各地邮政局(所)

印刷单位: 南京茂华彩色印务有限公司

广告发布登记编号: 广登 32000000224

中国标准连续出版物号: ISSN 2096-3203

CN 32-1866/TM

国际刊名代码(CODEN): DGJIAA

微信公众号:



epet-1982

封面简介:

水力发电把天然水流能量(包括势能、动能)转换成水轮机的动能后,以水轮机推动发电机产生电能,再通过输变电设施送入电力系统。它是完全清洁的可再生能源,对优化我国的能源结构、实现绿色循环低碳发展有着重要作用。

三峡水电站,即长江三峡水利枢纽工程,又称三峡工程,总装机容量2 250万kW,是我国“西电东送”“南北互供”的骨干电源点,也是世界上最大的水力发电站和清洁能源生产基地。工程1992年获得全国人民代表大会批准,1994年正式动工兴建,2003年开始蓄水发电,2012年全部机组投产,2020年完成整体验收。这是目前世界上最大的水利枢纽工程,有20多项经济技术指标位居世界前列,兼具防洪、发电、航运、生态补水等十多项功能,发挥着巨大的经济社会效益和节能减排的生态效益。

Electric Power Engineering Technology

Bimonthly Journal of State Grid Jiangsu Electric Power Co.,Ltd.

Vol.41 No.2 (Ser.202)

March 28, 2022

CONTENTS

New Technologies for Increasing the Grid Resilience to Defend Commutation Failure of HVDC

- Suppression strategy for subsequent commutation failure of DC system based on improved VDCOL
.....CHEN Ruikang, LI Fengting, YIN Chunya, LIU Jiangshan(2)
- Adaptive firing angle compensation control for mitigating DC subsequent commutation failure
..... YANG Chengxiang, YAO Wei, ZHOU Hongyu, LI Peiping, LI Chenghao, WEN Jinyu(10)
- Continuous commutation failure suppression strategy in hybrid multi-infeed HVDC transmission system
.....ZHONG Mingming, XIA Chengjun, LI Shoutao, HUANG Chuyin, LI Chengxiang(20)
- Commutation failure suppression strategy of hybrid DC transmission based on active current limiting
.....MA Wenzhong, LI Zhaoyuan, ZHANG Kuitong, HAN Jia, LI Mushu, YAO Minrui(29)
- Influence of current error controller on commutation failures and system recovery
..... SONG Xinfu, CHEN Weiwei, ZHOU Bohao, LI Fengting, XU Yelin, REN Juan(37)

Thesis and Summary

- The application status and development of laser barrier removal technology in power grid
..... ZHANG Zhibo, WANG Yibo, ZHANG Zikui, WANG Huawei, ZHANG Guixin, YOU Zhengjun(45)
- Comprehensive location evaluation of multi-station integration
..... ZHANG Xiaolian, LI Hengcong, HU Qi, ZHOU Qianxun, SHEN Baiyu, XIANG Jiaqi(53)
- Adaptive droop control strategy of cascaded hybrid HVDC system
..... ZENG Rui, LI Baohong, JIANG Qin, LIU Tianqi(60)
- Review of distributed energy storage application mode and optimal configuration
..... YAN Qunmin, MU Jiahao, MA Yongxiang, WANG Yong, SUN Yangyang(67)

Power Grid Operation and Control

- Robust unit commitment of power systems integrated wind power considering demand response and pumped storage units
.....CHEN Weiwei, ZHANG Zengqiang, ZHANG Gaochang, CHEN Lufeng, ZHANG Feng(75)
- Stability analysis of DFIG-based wind turbine via input to state stability theory
.....WANG Ruogu, LI Hengyi, GAO Xin, GUO Ning, DAI Liseng(83)
- Optimal configuration of voltage sag monitors considering sensitive areas
..... LIU Haiyong, DAI Baihua, ZHU Hongfang, HE Haishan, WANG Ying(90)
- Gaussian mixture model based optimal allocation of marine energy power generation resources
..... TANG Chenghong, YU Lianghui, SUN Shumin, YU Peng, ZHAO Zixuan, QIN Chuan(97)

Distribution Network and Micro-grid

- Topology and control strategy of a multifunctional modular DC fault current limiter
..... ZHANG Liang, LI Dandong, SHI Mingming, GE Xuefeng, YUAN Yubo(105)
- Optimal capacity configuration of wind-photovoltaic-hydrogen microgrid based on non-cooperative game theory
..... XIWANG•Abuduwayiti, LYU Haipeng, CHAO Qin(110)

Competent Authorities State Grid Jiangsu Electric Power Co.,Ltd.	Publication Number ISSN 2096 - 3203
Sponsor State Grid Jiangsu Electric Power Co.,Ltd. Jiangsu Society for Electrical Engineering	CODEN DGJIAA
Publisher Editorial Department of Electric Power Engineering Technology	Web Site www.epet-info.com
Chairman SHEN Guorong	E-mail epet@ijournals.cn
Editor in Chief LI Qun	Tel 025-86556860, 86558553, 86558020
Add No.1 Power Road, Jiangning District, Nanjing	Fax 025-86558020
Zip Code 211103	Distributed by Nanjing Municipal Postal Administration
	Subscription Code 28-305
	Subscription Post Offices Across China

Optimal operation of hybrid energy storage integrated micro-energy network considering carbon quote
 QIU Chun, YING Zhanfeng, FENG Yi, YAN Jianhu(119)

The cloud-edge signals based PWM synchronization strategy for multi-power electronic transformer
 CHEN Qing, GE Xuefeng, SHI Mingming, YANG Jinggang, XU Tao, ZHANG Chenyu(128)

High Voltage Engineering

Electrical fire source simulation for igniting cable
 LIU Xuhui, ZHU Zhenyu, GUO Yue, JING Ziyang, WU Shuqun, ZHANG Chaohai(136)

Non-invasive surface potential measurement of surface flashover
FAN Lu, GENG Yiwen, WANG Yalin, YIN Yi(143)

Partial damp diagnostic method of oil-paper insulating bushing based on frequency domain spectroscopy
 CHEN Xiaolin, FU Xiaotao, WU Qiangdong, ZHAO Haoxiang, LI Yuan, MU Haibao(149)

Optimization and identification technology of hyperspectral spectral features of insulator pollution levels
SHEN Long, QIAN Guochao, PENG Zhaoyu, LI Qianhui, YANG Kun, MA Yutang(156)

Smart Grid Technologies

Optimal dispatch of microgrid based on reverse mutation sparrow search algorithm
 SONG Yang, SHI Yong, LIU Baoquan, KANG Jiayu(163)

Transmission line inspection image detection based on improved Faster-RCNN
 WEI Yewen, LI Mei, XIE Yuanlin, DAI Beicheng(171)

The equipment failure assessment on the secondary system in smart substation
 YANG Qing, ZHU Daohua(179)

Electrical Machines and Apparatus

Thrust ripple suppression methods for the flux-switching permanent magnetic machine
 HAO Wenjuan, WANG Yu(186)

A method of transformer top oil temperature forecasting based on similar day and similar hour
 TAN Fenglei, XU Gang, LI Yifeng, CHEN Hao, HE Jiahong(193)

Data quality evaluation of generator inertia identification based on prior variance
 YE Hongbo, JIANG Yang, CHEN Xuemei, CUI Yong, YU Yue, LU Chao(201)

Technology Discussion

Sag and temperature estimation method based on improved machine learning for transmission line
 ZAI Hongbin, WU Haolin, WANG Hao, WANG Kai(209)

Economic benefit evaluation of regional integrated energy system based on improved minimum cross entropy method
 ZHAO Ermin, ZHANG Bin, LI Huizhen, WU Zhuocong, LEI Xia(215)

Capacity ratio optimization of wind-solar hybrid new energy power station based on improved model-generator method
LI Yanhe, YANG Libin, HAO Lili, LIU Xiangfeng, LYU Xiaoxu(224)