

# 电网与清洁能源

## Power System and Clean Energy

中国科技核心期刊 China's Core Sci-Tech Journals

美国《乌利希期刊指南》收录期刊 Indexed by Ulrich's Periodicals Directory, United States  
波兰《哥白尼索引》(IC)来源期刊 Source Periodicals for Index of Copernicus (IC), Poland

DIANWANG YU QINGJIENENGYUAN



本期关注  
FOCUS

PMU在线分析系统计算平台技术研究

Research on the Computation Platform Technology for the PMU On-Line Application System

ISSN 1674-3814

主管单位 国家电网公司  
主办单位 陕西省电力公司  
西安理工大学水电土木工程建筑研究设计院  
Authorities in Charge State Grid Corporation of China  
Sponsor Shaanxi Electric Power Corporation  
Design Academy of Water Conservancy Hydroelectric  
Civil Engin&ARCH of Xi'an University of Technology





# 目次

《电网与清洁能源》 2013年第6期·第29卷·总第167期·6月

## 智能电网

- 01 PMU在线分析系统计算平台技术研究 / 王英涛,张传凯,李旻,古衡,黄远超,陈真,丁理杰,汤凡
- 06 基于GNBR算法的BP网络对绝缘子运行状态预测研究 / 徐击水,张子蓬,王淑青,曾仕琦
- 10 一种用于AGC机组调配的混沌多Agent双重粒子群算法 / 雷啸鹏,江岳文,温步瀛,陈浩琿
- 16 配电网中新能源最优接入的评价方法 / 袁云山,刘源,刘慨然,朱振环,刘洪
- 21 基于复杂网络理论与风险理论的地区电网脆弱性评估 / 肖盛,张建华,肖河
- 29 电网自动减载监控管理系统设计 / 魏珍,周骥飞,翟晓磊
- 33 架空输电线路过电压在线监测系统 / 叶鹏,朱峰,李建明,杜林
- 39 分层控制在微网中的应用研究 / 许守平,侯朝勇,王坤洋,惠东
- 46 同步发电机最优励磁控制器的设计与实现 / 张立涛,田云飞,李梅
- 50 圆形耐热硬铝合金碳纤维复合芯导线在500 kV山区增容改造线路中的推荐分析 / 魏一航,陈锡祥
- 56 电力市场中热电联产机组两部制电价机制的研究 / 赵峰,李清龙,王伟
- 61 提高变电站建(构)筑物使用寿命措施 / 徐皇冈
- 67 一种工程实用的GIS定量检漏方法 / 龙锦壮,王克涛,赵鑫,周军

## 清洁能源

- 71 风电场等值模型可辨识性研究 / 曹娜,于群,戴慧珠
- 75 风电运行数据嵌入电力系统仿真软件DDRTS的设计及实现 / 张龙音,晁勤,袁铁江,吐尔逊·伊不拉音,袁建党
- 81 ZigBee和GPRS技术在光伏电站监测系统中的应用研究 / 何照安,张保民,杨凯,李龙春
- 85 样本选取对于风电场风资源评估的影响研究 / 李超,马惠群,王守峰,游亮

## 水力发电

- 88 杨泗水电站的高压致负荷受限原因分析及处理 / 马驰
- 92 决策树分类方法在水轮机组故障诊断的应用研究 / 张东利

本刊送阅:

国务院、国家能源局、各省(区)政府电力、能源主管领导  
国家电网、能源企业主要负责人  
中国科学院、中国工程院院士  
电力、能源相关学会、协会  
中国国家图书馆、中国版本图书馆、各省(区)图书馆

# Contents

Power System and Clean Energy  
2013 Vol.29 No.6 (Ser.167) Monthly

## Smart Grid

- 01 Research on the Computation Platform Technology for the PMU On-Line Application System /  
*WANG Ying-tao, ZHANG Chuan-kai, LI Min, GU Heng, HUANG Yuan-chao, CHEN Zhen, DING Li-jie,  
TANG Fan*
- 06 Research on the Prediction for the Operating State of Insulators Using BP Network Based on  
GNBR Algorithm / *XU Ji-shui, ZHANG Zi-peng, WANG Shu-qing, ZENG Shi-qi*
- 10 A Chaos Multi-Agent Dual Particle Swarm Optimization Algorithm for AGC Unit Dispatchment /  
*LEI Xiao-peng, JIANG Yue-wen, WEN Bu-ying, CHEN Hao-hui*
- 16 An Evaluation Method of New Energy Optimal Accessing to Distribution Network / *YUAN Yun-shan,  
LIU Yuan, LIU Kai-ran, ZHU Zhen-huan, LIU Hong*
- 21 Vulnerability Assessment of a Regional Power Grid Based on Complex Network Theory and Risk  
Theory / *XIAO Sheng, ZHANG Jian-hua, XIAO He*
- 29 Design of the Monitoring and Management System for Automatic Load Reduction in the Power  
Grid / *WEI Zhen, ZHOU Ji-fei, ZHAI Xiao-lei*
- 33 On-Line Monitoring System for the Overvoltage of Overhead Transmission Lines / *YE Peng,  
ZHU Feng, LI Jian-ming, DU Lin*
- 39 Application Research of Hierarchical Control in Microgrid / *XU Shou-ping, HOU Chao-yong,  
WANG Kun-yang, HUI Dong*
- 46 Design and Implementation of Synchronous Generator Optimal Excitation Controller /  
*ZHANG Li-tao, TIAN Yun-fei, LI Mei*
- 50 Recommendation and Analysis of the Circular Hard ACCC Conductor in Capacity-Increasing  
Project of 500 kV Transmission Line in Mountain Areas / *WEI Yi-hang, CHEN Xi-xiang*
- 56 Research on Two-Part Electricity Price of Combined Heat and Power Plant in the Electricity  
Market / *ZHAO Feng, LI Qing-long, WANG Wei*
- 61 Measures of Improving the Service Life of Building (Structure) in Substation / *XU Huang-gang*
- 67 A Practical Engineering Method for GIS Leaking Quantitative Detection / *LONG Jin-zhuang,  
WANG Ke-tao, ZHAO Xin, ZHOU Jun*

## Clean Energy

- 71 Study on the Identification of Wind Farm Equivalent Models / *CAO Na, YU Qun, DAI Hui-zhu*
- 75 Design and Realization of Inserting Wind Power Operation Data into Power System Simulation  
Software Based on DDRTS / *ZHANG Long-yin, CHAO Qin, YUAN Tie-jiang, TOERXUN Yibulayin,  
YUAN Jian-dang*
- 81 Application of ZigBee & GPRS Technology in Photovoltaic Power Plants Monitoring System /  
*HE Zhao-an, ZHANG Bao-min, YANG Kai, LI Long-chun*
- 85 Influence of the Sample Selection on the Wind Resources Assessment / *LI Chao, MA Hui-qun,  
WANG Shou-feng, YOU Liang*

## Water Power

- 88 The Analysis and Processing of Yangsi Power Plant Load Limited by the High Voltage / *MA Chi*
- 92 Decision Tree Classification for Fault Diagnosis of Hydro-turbine Generating Unit / *ZHANG Dong-li*