

## TABLE OF CONTENTS

### 目 录

<b>Short-Term Electricity Price Forecasting Based on VMD and BP Neural Network</b> (基于 VMD 与 BP 神经网络的短期电价预测)	
Y. G. CHEN, Z. Q. CHENG, X. H. HOU, H. B. LIU.....	473
<b>Load Balance Based-Power Communication Service Path Programming Algorithm</b> (基于负载均衡的电力通信业务路径规划算法)	
T. Q. XU, H. L. ZHANG, G. F. LIU, H. J. ZHAO, E. Z. ZHANG, C. ZHANG.....	489
<b>The Research on Analysis of Equipment Failure and Influence Degree of Power Distribution Communication Network</b> (配用电通信网设备故障及影响度分析研究)	
X. N. LI, Y. WANG, Z. SHI, T. LU.....	498
<b>Research on the Operation Characteristics of Hybrid DC Asynchronous Interconnection System</b> (混合直流异步联网系统运行特性研究)	
H. YAN, R. SONG, S. C. ZHAO, X. WANG, C. L. LI, J. YANG, S. F. WANG.....	505
<b>Study on Fault Protection of DC Distribution System Based on Short-Circuit Reactor</b> (一种基于短路电抗器的直流配网故障保护方法研究)	
X. J. CHEN, Z. L. XIAO, C. ZHANG, W. PAN.....	516
<b>Communication Protocol of Intelligent Test System in Distribution Network</b> (配电网通信协议智能测试技术研究)	
X. J. CHEN, J. J. HUANG, J. Q. PANG, C. J. ZHANG.....	525
<b>Comprehensive Optimal Dispatch of Combined Heat and Power System</b> (热电联供系统综合优化调度)	
Y. L. LIU, Y. Y. SONG.....	532
<b>Application of Parallel Computing in the Black Start of Smart Grid</b> (并行计算在智能电网黑启动中的应用研究)	
B. G. KONG, Y. M. SHE, Z. C. YING, X. X. LIU, Z. J. LIU, B. Q. ZHANG.....	538
<b>Electricity Demand Forecasting Using HWT Model with Four-Fold Seasonality</b> (基于四种季节属性 HWT 模型的电力需求预测)	
W. X. WU.....	547
<b>Research on Optimal Operation Strategy of All-DC Power Supply for the Building Energy Storage</b> (全直流供电建筑储能最优运行策略研究)	
W. D. LIAO, Y. T. LI, B. HAO, W. Y. PAN.....	555

**Research and Deployment of Power User Behavior Analysis Platform Based on Big Data**

(基于大数据的用户用电行为分析平台的研究与部署)

Y. Q. LIAO, W. T. JIANG.....565

**Comprehensive Optimization Programming of Multi-Energy System Based on Energy Internet**

(基于能源互联网的多能源系统综合优化规划)

L. ZHANG, Q. Y. HAN, S. Y. LIU, Y. Y. SONG.....571

**Design of Aerial Line Image Monitoring Device for Distribution Network Based**

**on Disaster Prevention**

(基于灾害预防的配电网架空线图像监测系统设计)

H. B. ZHOU.....580

**Study on Differentiation Lightning Protection in Shandong**

(山东地区差异化防雷研究)

Z. Y. LI, R. YANG, Z. H. WANG, J. XU, R. R. WANG.....586

**A CPS Key Service Routing Optimization Approach of Power System Protection**

**Based on Improved Genetic Algorithm**

(基于改进遗传算法的电力系统保护 CPS 关键业务路由优化)

H. YANG, B. Z. LI, F. Z. CHEN, F. CHEN, G. X. JIN, L. R. LIU, J. S. LI, P. LIN, Q. L. MA, O. Z. DONG.....595

**Research on Internet Mode of Grid Supplier Service**

(电网供应商服务的互联网模式研究)

X. B. ZHOU, F. H. HONG, J. GUO, J. CHEN, X. H. CHEN, F. XIAO, Y. X. ZHANG.....606

**Slotting Optimization in Automated Power Warehouse Using Improved Multi-Population**

**Genetic Algorithm**

(基于改进多种群遗传算法的电力仓库货位分配)

J. E. SONG, S. J. XUE, S. M. FENG.....610

**Application Design of Lithium Battery Energy Storage System in Important**

**User Distribution Network**

(锂电池储能系统在重要用户配电网的应用设计)

P. ZHANG, C. LIU, Y. L. WU, H. WANG, Y. Y. YUE.....617