

# 电工电能新技术

DIANGONG DIANNENG XINJISHU

第 40 卷第 10 期(总第 220 期)

2021 年 10 月

## 目 次

### 论文报告

- 500 kV 充油海底电缆过负荷能力分析 ..... 陈 玉,李涵之,姚 凯,贾 峰(1)
- 换流变压器基波及谐波作用下损耗分布与特性的研究 ..... 王昊天,李军浩,宋颜峰,孙 源,等(10)
- 计及金属护套环流影响的高压电缆温度场及载流量的数值分析 ..... 陈 悦,杨仕友,覃 喜(18)
- 基于内部能量管理和外部路径规划协同的水下无人航行器能耗优化  
..... 侯 慧,陈洋洋,谢长君,吴细秀,等(27)
- 10 kV 交流 XLPE 电缆熔接头的直流电场仿真分析 ..... 王启隆,王国海,王方舒,黄 韵,等(37)
- 中频变压器用环氧树脂/纳米 BN 复合介质的导热和电气性能研究  
..... 张梦甜,王国海,孟繁博,江 铁,等(44)

### 综述与述评

- 复合绝缘材料介电性能的相场模拟研究进展 ..... 郭玉金,董紫薇,李庆民,韩智云,等(53)

### 新技术应用

- 基于能效的交直流混合配电母线配置方法研究 ..... 朱梦颖,彭勇刚,宋弘亮(64)
- 超导故障限流器抑制短路电流直流分量的仿真分析 ..... 倪 辉,黎 炜,兰润栋,项 彬,等(74)

# ADVANCED TECHNOLOGY OF ELECTRICAL ENGINEERING AND ENERGY

Vol.40 No.10 Oct. 2021

---

## CONTENTS

### Treatise and Report

Analysis on overload capacity of 500 kV oil-filled submarine cable

..... CHEN Yu, LI Han-zhi, YAO Kai, et al. ( 1 )

Study on loss distribution and characteristics under fundamental wave and harmonics of converter transformer

..... WANG Hao-tian, LI Jun-hao, WANG Hao-yang ( 10 )

Numerical study on temperature field and ampacity of high voltage cables considering effect of

circulating current in metal sheaths ..... CHEN Yue, YANG Shi-you, QIN Xi (18)

Energy consumption optimization of unmanned underwater vehicle based on internal energy management

and external path planning ..... HOU Hui, CHEN Yang-yang, XIE Chang-jun, et al. (27)

DC electric field simulation analysis for 10 kV AC XLPE cable melting joint

..... WANG Qi-long, WANG Guo-hai, WANG Fang-shu, et al. (37)

Study on thermal conductivity and electrical properties of epoxy resin/nano BN composites in medium

frequency transformers ..... ZHANG Meng-tian, WANG Guo-hai, MENG Fan-bo, et al. (44)

### Summary and Review

Research advances in phase field simulation of dielectric properties of composite insulating materials

..... GUO Yu-jin, DONG Zi-wei, LI Qing-min, et al. (53)

### New Technology Application

Study on configuration of hybrid AC/DC distribution bus line based on energy efficiency

..... ZHU Meng-ying, PENG Yong-gang, SONG Hong-liang (64)

Simulation analysis of superconducting fault current limiter to suppress DC component of short

circuit current ..... NI Hui, LI Wei, LAN Run-dong, et al. (74)