

ISSN 0258 - 8013

CODEN ZDGXER

中国电机工程学报

中国电机工程学报

半月刊

第 40 卷 第 18 期

Proceedings of the CSEE

SEMIMONTHLY

Vol.40 No.18

第四十卷

第十八期

二〇二〇年九月

Proceedings of the CSEE

Vol.40

No.18

September

2020



ISSN 0258-8013



中国电机工程学会主办
THE CHINESE SOCIETY FOR ELECTRICAL ENGINEERING



中国电机工程学报

ZHONGGUO DIANJI GONGCHENG XUEBAO

第 40 卷

第 18 期 (总第 653 期)

2020 年 9 月 20 日

目 次

(论文电子版 <http://www.pcsee.org/CN/volumn/home.shtml>)

“电力电子器件及装备的可靠运行与健康”专题特约主编寄语 肖飞 (5717)

· 电力电子器件及装备的可靠运行与健康 ·

电动汽车 IGBT 芯片技术综述和展望 罗皓泽, 高洪艺, 朱春林, 李武华, 何湘宁 (5718)

基于驱动电流动态调节的低过冲低损耗 SiC MOSFET 有源门极驱动 刘平, 李海鹏, 苗轶如, 等 (5730)

一种基于门极电压阈值检测的 SiC MOSFET 结温在线监测方法 张擎昊, 张品佳 (5742)

SiC MOSFET 短路特性及过流保护研究 王占扩, 童朝南, 黄伟超 (5751)

一种改进 SiC MOSFET 开关性能的有源驱动电路 李先允, 卢乙, 倪喜军, 王书征, 张宇, 唐昕杰 (5760)

基于组合短路电流的不受老化影响的 IGBT 模块结温测量方法 杨舒萌, 孙鹏菊, 杜雄, 等 (5770)

纳米银烧结压接封装 IGBT 的长期可靠性研究 龙海洋, 李辉, 王晓, 姚然, 赖伟, 李金元 (5779)

基于 GARCH 模型的 IGBT 寿命预测 白梁军, 黄萌, 饶臻, 潘尚智, 查晓明, 刘国友 (5787)

用于电动汽车功率模块热分析的紧凑型热网络模型 马铭遥, 郭伟生, 严雪松, 杨淑英, 等 (5796)

MMC 系统功率器件基频结温波动快速计算方法 王希平, 李志刚, 姚芳 (5805)

· 智能电网 ·

电网信息物理系统分析与控制的研究进展与展望 秦博雅, 刘东 (5816)

综合能源系统分析的统一能路理论(四): 天然气网动态状态估计 尹冠雄, 陈彬彬, 孙宏斌, 郭庆来 (5827)

面向电网调度故障处理的知识图谱框架与关键技术初探 乔骥, 王新迎, 闵睿, 白淑华, 姚冬, 等 (5837)

复杂电气化铁路牵引用光伏发电系统综合优化控制方法研究 邓文丽, 戴朝华, 张涵博, 张丽, 等 (5849)

电力系统功角稳定域及边界上的全局流形分析 马美玲, 王杰, 李鹏瀚, 王子强, 熊林云 (5865)

弱连接条件下并网直驱风电场引发无串补电力系统次同步共振机理研究 张天翼, 杜文娟, 等 (5875)

一种兼顾富余风电充分消纳和全局效益的电网灵活负荷控制策略 李雪松, 随权, 林湘宁, 等 (5885)

综合能源服务区块链的网络架构、交互模型与信用评价 龚钢军, 杨晟, 王慧娟, 刘林, 陆俊, 等 (5897)

混合双馈入直流输电系统的交互作用机理研究(一): 等值单馈入直流输电模型 刘炜, 郭春义, 等 (5911)

考虑风光不确定性的高比例可再生能源电网短期联合优化调度方法 张俊涛, 程春田, 申建建, 等 (5921)

基于多频段动态相量法的 MMC 换流器建模方法 姚蜀军, 屈秋梦, 蔡焱蒙, 黄闻而达 (5932)

水电机组超低频振荡小信号模型及影响因素分析 王鹏, 刘天琪, 王顺亮, 江琴, 仰玲芳, 李保宏 (5942)

· 发电 ·

磷基钙盐对玉米秸秆燃烧过程中颗粒物排放特性的影响 杨鹏, 朱有健, 樊纪原, 成伟, 等 (5955)

相变胶囊级联布置堆积床蓄热特性实验研究 张仲彬, 张天宇, 孟雨欣 (5963)

熔盐储罐预热过程的实验和模拟研究 时华, 方文峰, 朱义凡, 周明熙, 周昊 (5972)

基于有限元的溶氧蒸汽环境 TP347H 管氧化膜剥落特性分析 徐洪, 祁晶, 陈有福, 杨贤彪, 等 (5979)

· 电机与电器 ·

弓形磁极永磁电机谐波削极技术的优化研究 胡鹏飞, 王东, 靳栓宝, 魏应三 (5987)

小电容电机驱动系统的直流母线电压稳定性分析与控制 林宏民, 宋文祥, 赵凌云 (5997)

基于 Levenberg-Marquardt 算法的改进 Preisach 模型磁特性模拟与验证 黄雷, 包广清, 陈俊全 (6006)

· 高电压技术 ·

低压直流系统故障电弧特性、检测和定位方法研究进展综述 熊庆, 陈维江, 汲胜昌, 祝令瑜 (6015)

涂覆电热型涂料的复合绝缘子直流电场仿真与电气特性试验研究 胡琴, 夏翰林, 蒋兴良, 等 (6027)

稳态下交流输电线路对邻近埋地油气管道电磁影响的案例研究 莫冰玉, 黄万里, 周尚虎, 等 (6035)

· 英文概述见论文电子版

期刊基本参数: CN11-2107/TM * 1964 * S * A4 * 328 * zh * P * ¥84.00 * 4000 * 32 * 2020-09 版权所有 未经许可不得转载及上网

PROCEEDINGS OF THE CHINESE SOCIETY FOR
ELECTRICAL ENGINEERING
(PROCEEDINGS OF THE CSEE)

Vol.40 No.18 (Ser. 653)

Sep. 20, 2020

CONTENTS

(Electronic Journals <http://www.pcsee.org/EN/volumn/current.shtml>)

- Foreword From the Guest Editor in Chief of Special Columns for "Reliable Operation and Health Management of Power Electronic Device and Equipment" XIAO Fei (5717)
- **Reliable Operation and Health Management of Power Electronic Device and Equipment** •
- Review and Prospect of IGBT Chip Technologies for Electric Vehicles
..... LUO Haoze, GAO Hongyi, ZHU Chunlin, LI Wuhua, HE Xiangning (5718)
- Low Overshoot and Low Loss Active Gate Driver for SiC MOSFET Based on Driving Current Dynamic Regulation
..... LIU Ping, LI Haipeng, MIAO Yiru, et al (5730)
- A Novel On-line Method for Monitoring the Junction Temperature of SiC MOSFET Based on Threshold Voltage
..... ZHANG Qinghao, ZHANG Pinjia (5742)
- Research on Short-circuit Characteristics and Overcurrent Protection of SiC MOSFET
..... WANG Zhankuo, TONG Chaonan, HUANG Weichao (5751)
- An Active Gate Driver for Improving Switching Performance of SiC MOSFET
..... LI Xianyun, LU Yi, NI Xijun, WANG Shuzheng, ZHANG Yu, TANG Xinjie (5760)
- Junction Temperature Measurement of IGBT Based on Combined Short-circuit Current That Not Affected by Aging Effect
..... YANG Shumeng, SUN Pengju, DU Xiong, et al (5770)
- Study on the Long Term Reliability of Nanosilver Sintered Press Pack IGBT
..... LONG Haiyang, LI Hui, WANG Xiao, YAO Ran, LAI Wei, LI Jinyuan (5779)
- Lifetime Prediction of IGBT Based on GARCH Model
..... BAI Liangjun, HUANG Meng, RAO Zhen, PAN Shangzhi, ZHA Xiaoming, LIU Guoyou (5787)
- Compact Thermal Network Model for Thermal Analysis of Power Modules in Electric Vehicle
..... MA Mingyao, GUO Weisheng, YAN Xuesong, YANG Shuying, et al (5796)
- Simplified Estimation of the Fundamental Frequency Junction Temperature Fluctuation for IGBTs in Modular Multilevel Converters WANG Xiping, LI Zhigang, YAO Fang (5805)
- **Smart Grid** •
- Research Progresses and Prospects on Analysis and Control of Cyber-physical System for Power Grid..... QIN Boya, LIU Dong (5816)
- Energy Circuit Theory of Integrated Energy System Analysis (IV): Dynamic State Estimation of the Natural Gas Network
..... YIN Guanxiong, CHEN Binbin, SUN Hongbin, GUO Qinglai (5827)
- Framework and Key Technologies of Knowledge-graph-based Fault Handling System in Power Grid
..... QIAO Ji, WANG Xinying, MIN Rui, BAI Shuhua, YAO Dong, et al (5837)
- Research on Comprehensive Optimization Control Method for Traction Photovoltaic Generation System of Complex Electrified Railway DENG Wenli, DAI Chaohua, ZHANG Hanbo, ZHANG Li, et al (5849)
- Study of the Global Manifolds on the Boundary of the Rotor Angle Stability Region in Power Systems
..... MA Meiling, WANG Jie, LI Penghan, WANG Ziqiang, XIONG Linyun (5865)
- A Mechanism Investigation on SSTOs in Power Systems Without Series Compensated Lines Induced by PMSG Wind Farms Under the Condition of Weak Grid Connection..... ZHANG Tianyi, DU Wenjuan, et al (5875)
- A Flexible Load Control Strategy for Power Grid Considering Fully Consumption of Surplus Wind Power and Global Benefits
..... LI Xuesong, SUI Quan, LIN Xiangning, et al (5885)
- Network Architecture, Interaction Model and Credit Evaluation of Integrated Energy Service Blockchain
..... GONG Gangjun, YANG Sheng, WANG Huijuan, LIU Lin, LU Jun, et al (5897)
- Research on Interaction Mechanism of Hybrid Dual-infeed HVDC System (Part I): Equivalent Single-infeed HVDC Model
..... LIU Wei, GUO Chunyi, et al (5911)
- Short-term Joint Optimal Operation Method for High Proportion Renewable Energy Grid Considering Wind-solar Uncertainty
..... ZHANG Juntao, CHENG Chunfian, SHEN Jianjian, et al (5921)
- Research of Modeling Method of Modular Multilevel Converter Based on Multi-frequency Bands Dynamic Phasor
..... YAO Shujun, QU Qiumeng, CAI Yanmeng, HUANG Wen'erda (5932)
- Small-signal Model and Influencing Factors Analysis of Ultra-low Frequency Oscillation in Hydropower Unit
..... WANG Peng, LIU Tianqi, WANG Shunliang, JIANG Qin, YANG Lingfang, LI Baohong (5942)
- **Power Generation** •
- Effect of Calcium Phosphates Additives on PM Emissions From the Combustion of Corn-stalk
..... YANG Peng, ZHU Youjian, FAN Jiyuan, CHENG Wei, et al (5955)
- Experimental Study on Heat-Storage Performance of Packed Bed Using Cascaded PCM Capsules
..... ZHANG Zhongbin, ZHANG Tianyu, MENG Yuxin (5963)
- Experimental and Numerical Investigation on Preheating Process of Molten Salt Storage Tank
..... SHI Hua, FANG Wenfeng, ZHU Yifan, ZHOU Mingxi, ZHOU Hao (5972)
- Investigating the Role of Oxygenated Treatment on Oxide Exfoliation in TP34H Alloy Tube Based on Finite Element Method
..... XU Hong, QI Jing, CHEN Youfu, YANG Xianbiao, et al (5979)
- **Electric Machines and Apparatus** •
- Researches on the Optimization of Harmonic Pole Shaping Technologies for Arcuate Pole Permanent Magnet Motors
..... HU Pengfei, WANG Dong, JIN Shuanbao, WEI Yingsan (5987)
- Analysis and Control of DC-link Voltage Stabilization in Small Capacitor Motor Drive System
..... LIN Hongmin, SONG Wenxiang, ZHAO Lingyun (5997)
- Magnetic Property Simulation and Verification With Improved Preisach Hysteresis Model Based on Levenberg-marquardt Algorithm
..... HUANG Lei, BAO Guangqing, CHEN Junquan (6006)
- **High Voltage Engineering** •
- Review of Research Progress on Characteristics, Detection and Localization Approaches of Fault Arc in Low Voltage DC System
..... XIONG Qing, CHEN Weijiang, JI Shengchang, ZHU Lingyu (6015)
- DC Electric Field Simulation and Electric Characteristics Test of Composite Insulator Coated With Electrothermal Paint
..... HU Qin, XIA Hanlin, JIANG Xingliang, et al (6027)
- Case Studies of the Electromagnetic Influence of AC Transmission Lines on the Adjacent
..... MO Bingyu, HUANG Wanli, ZHOU Shanghu, et al (6035)
- **For Extended Summaries, Please See the Electronic Journals.**