



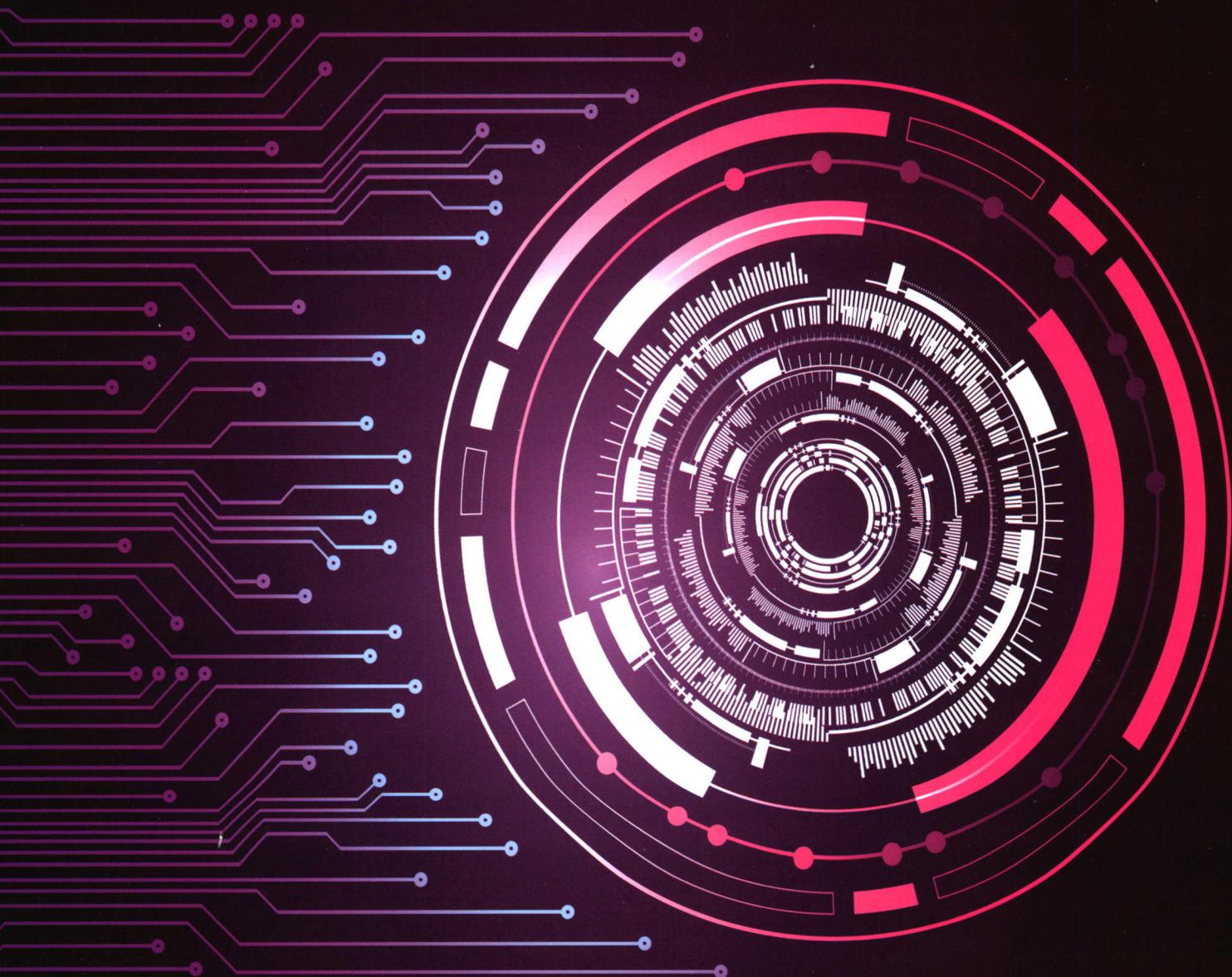
Q K 2 2 0 2 4 0 0

1959年创刊

真空电子技术

VACUUM ELECTRONICS
ZHENKONG DIANZI

2021 6



ISSN 1002-8935



北京真空电子技术研究所主办
<http://zkdj.cbpt.cnki.net>



目 次

综述

- 碳纳米管冷阴极 X 射线管研究述评 李振军, 李 驰, 冯进军, 等 (1)

等离子体技术专辑

- 基于等离子体电子枪的束-等离子体系统研究 杨生鹏, 唐昌建, 王战亮, 等 (14)
高功率回旋振荡管在 HL-2A 装置上的应用研究 王洁琼, 黄 梅, 张 峰, 等 (18)
低杂波电流驱动用 TH2103 系列速调管的调试研究 陈娅莉, 卢 波, 白兴宇, 等 (25)
大气压微波氩等离子体分子离子特性数值研究 谢 芹, 申庆浩, 郭雪晴 (29)
含氮量与微波频率对微波等离子体活性粒子的影响 余 洁, 陈久元, 吴 丽 (34)
微波氩气等离子体对吸附于碳布的对硝基苯酚的降解研究 刘艳景, 周艳萍, 黄卡玛 (38)

理论与设计

- 电子束团驱动矩形光栅增强 Smith-Purcell 辐射的研究 舒 靖, 郭宏阳, 许 多, 等 (43)
V 波段宽杆半矩形环螺旋线行波管的研究 钟 辉, 魏望和, 于 灿, 等 (47)
螺旋线行波管欧拉非线性注波互作用理论 邱海舰, 乔建军, 牛吉凌, 等 (52)
矩形环双杆慢波结构高频特性 于 灿, 魏望和, 胡 文, 等 (62)

工艺研究

- 原子层沉积 LiPON 薄膜的表面钝化研究 王一同, 冯 泽, 井美艺, 等 (67)
多变量单值控制图在电镀零件镀层厚度统计控制方面的应用 庞月婵, 薛 静, 王茹楠 (74)
接收机保护器故障数据统计分析 薛 静, 庞月婵, 王茹楠 (78)

整管与装置

- 通信行波管放大器热设计 王 欣, 蒋洪卫, 袁 月 (82)
一种基于基片集成脊波导的介电常数测量研究 晏 晗, 陈 倩, 黄卡玛, 等 (87)

VACUUM ELECTRONICS

No. 6 (Sum 355) 2021

Contents

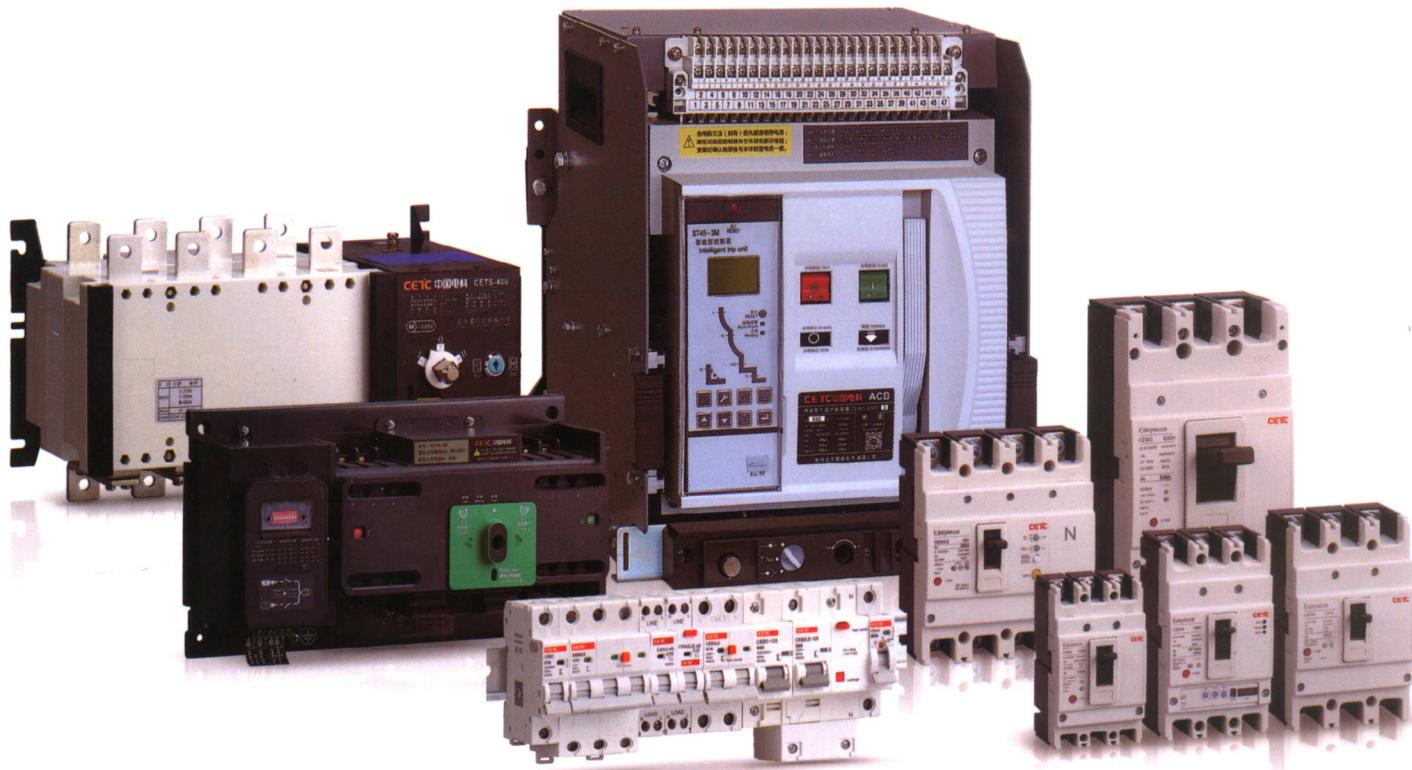
A Review on the Research of Cold Cathode X-Ray Tubes Based on Carbon Nanotubes	.....	LI Zhen-jun, LI Chi, FENG Jin-jun, <i>et al.</i> (1)
Study on Beam-Plasma System Based on Plasma Electron Gun	.....	YANG Sheng-peng, TANG Chang-jian, WANG Zhan-liang, <i>et al.</i> (14)
Application of High-Power Gyrotrons in HL-2A Devices	.....	WANG Jie-qiong, HUANG Mei, ZHANG Feng, <i>et al.</i> (18)
Debugging of TH2103 Series Klystrons for Low Hybrid Current Drive	.....	CHEN Ya-li, LU Bo, BAI Xing-yu, <i>et al.</i> (25)
Numerical Analysis of the Characteristics of Molecular Ion in Microwave Argon Plasma at Atmospheric Pressure	.....	XIE Qin, SHEN Qing-hao, YAN Xue-qing (29)
Effects of Nitrogen Concentration and Microwave Frequency on Active Particles in Microwave-Induced Plasma	.....	YU Jie, CHEN Jiu-yuan, WU Li (34)
Study on Degradation of p-Nitrophenol Adsorbed on Carbon Cloth by Microwave Argon Plasma	.....	LIU Yan-jing, ZHOU Yan-ping, HUANG Ka-ma (38)
Research on Enhanced Smith-Purcell Radiation of Rectangular Grating Driven by Electron Bunch	.....	SHU Jing, GUO Hong-yang, XU Duo, <i>et al.</i> (43)
Investigation on V-Band Wide-Bar Half Rectangular-Ring Helix TWTs	.....	ZHONG Hui, WEI Wang-he, YU Can, <i>et al.</i> (47)
An Analytic Model for Eulerian Large-Signal Beam-Wave Interaction	.....	QIU Hai-jian, QIAO Jian-jun, NIU Ji-lin, <i>et al.</i> (52)
Theory of Helix Traveling Wave Tubes	.....	YU Can, WEI Wang-he, HU Wen, <i>et al.</i> (62)
High-Frequency Characteristics of Rectangular-Ring Double-Bar Slow-Wave Structures	.....	WANG Yi-tong, FENG Ze, JING Mei-yi, <i>et al.</i> (67)
Surface Passivation for LiPON Film by Atomic Layer Deposition	.....	PANG Yue-chan, XUE Jing, WANG Ru-nan (74)
Application of Multivariate Individual Observations Chart in Statistical Process	.....	Statistical Analysis of Failure Data of Receiver Protectors
Control of Coating Thickness of Electroplating Parts	.....	XUE Jing, PANG Yue-chan, WANG Ru-nan (78)
Thermal Design of Communication TWT Amplifiers	.....	WANG Xin, JIANG Hong-wei, YUAN Yue (82)
A Permittivity Measurement Device Based on Substrate Integrated Ridge Waveguide	.....	YAN Han, CHEN Qian, HUANG Ka-ma, <i>et al.</i> (87)

我们的企业愿景是

“成为电子信息领域具有全球影响力的科技型企业”

Our business vision is

“Become a scientific and technological enterprise with global influence
in the field of electronic information”



高端低压电气系统解决方案专家

HIGH-END LOW VOLTAGE ELECTRICAL SYSTEM SOLUTION EXPERT

服务智慧城市建设，让生活更美好

智慧电力 科技互动

To serve the construction of smart cities,
Make Life Better

电科北方智能电气有限公司

北京总部地址: 北京市朝阳区酒仙桥路13号

电话: 010-84560996 传真: 010-84352378

北京密云生产基地: 北京市密云经济开发区科技路36号

电话: 010-69075520 传真: 010-69075519

浙江德清生产基地:

浙江省德清县阜溪街道紫山街88号(莫干山国家高新区)

电话: 0572-8831522 传真: 0572-8831511

全国统一客户服务热线

400-686-1522

欢迎访问: <http://www.cetc-electric.com>

