

物 理 学 报

第 73 卷 第 12 期 2024 年 6 月 20 日

目 次

专题: 纳米电介质电-热特性

研究论文

- 127701 纳米氧化锌改性纤维素绝缘纸力学和热学性能的分子动力学模拟 张钰业 张懿议 韦文厂 苏至诚 兰丹泉 罗世豪
127702 界面电子结构对核壳量子点/聚乙烯纳米复合绝缘电导与空间电荷特性的影响 王赫宇 李忠磊 杜伯学
127703 表面氟化聚苯乙烯纳米微球提升环氧树脂绝缘特性 阴凯 郭其阳 张添胤 李静 陈向荣

综述

- 126101 高性能 La-Co 共替代 M 型永磁铁氧体的磁各向异性增强机理研究进展 刘若水 王利晨 俞翔 孙洋 何诗悦 赵同云 沈保根
128901 高阶网络统计指标综述 刘波 曾钰洁 杨荣涓 吕琳媛

总论

- 120501 基于相位同步动力学重构网络单纯复形的相互作用 罗恺明 管曙光 邹勇
120701 上海软 X 射线自由电子激光单脉冲成像定时的设计与实现 聂勇敢 高梓宸 佟亚军 范家东 刘功发 江怀东
120702 水平管内超临界 R1234ze(E) 冷却传热性能的神经网络预测 周文力 卓伟伟 蒋依然 马文杰 董宝君
120703 间接型光谱成像仪相对光谱响应函数标定方法 李潇潇 李娟 柏财勋 畅晨光 郝雄波 文镇清 王鹏冲 冯玉涛
120704 铜氧化层上钒氧酞菁分子的吸附构型及组装结构 彭兰沁 李小雨 幸运 赵涵 邓炎滔 于迎辉

原子和分子物理学

- 123201 阿秒脉冲串产生和相位信息重构的对比研究 朱孝先 高亦谈 王美之 王一鸣 王佶 王兆华 赵昆 魏志义
123401 W^{6+} 离子的电子碰撞电离研究 马莉莉 张世平 张芳军 李麦娟 蒋军 丁晓彬 颌录有 张登红 董晨钟
123402 重离子储存环 CSR_e 上类钠 Kr^{25+} 离子的双电子复合精密谱学实验研究 邵林 黄忠魁 汶伟强 汪书兴
黄厚科 马万路 刘畅 汪寒冰 陈冬阳 刘鑫 周晓鹏 赵冬梅 张少锋 朱林繁 马新文

电磁学、光学、声学、传热学、经典力学和流体动力学

- 124101 基于共享孔径技术的低 RCS 电磁超构表面天线设计 李桐 杨欢欢 李奇 廖嘉伟 高坤 季轲峰 曹祥玉
124201 透明可开关的超宽带频率选择表面电磁屏蔽研究 王成蓉 唐莉 周艳萍 赵翔 刘长军 闫丽萍
124202 计算偏振彩色傅里叶叠层成像: 散射光场偏振特性的复用技术 相萌 何飘 王天宇 袁琳 邓凯 刘飞 邵晓鹏
124203 基于迭代算法的不同状态散射光场聚焦 段美刚 赵映 左浩毅
124204 509 nm 高功率宽调谐外腔面发射激光器 王涛 彭雪芳 贺亮 沈小雨 朱仁江 蒋丽丹 佟存柱 宋晏蓉 张鹏
124205 低重复频率被动锁模半导体碟片激光器 贺亮 彭雪芳 沈小雨 朱仁江 王涛 蒋丽丹 佟存柱 宋晏蓉 张鹏

- 124206 基于平凹多通腔的非线性脉冲压缩技术 李聘滨 滕浩 田文龙 黄振文 朱江峰 钟诗阳 运晨霞 刘文军 魏志义
 124701 壁面渗透气膜工质对圆锥高超声速边界层稳定性的影响 胡玉发 易仕和 刘小林 徐席旺 张震 张臻

气体、等离子体和放电物理

- 125201 基于统一流体模型的微放电数值仿真研究 王震 赵志航 付洋洋
 125202 宽带激光辐照平面薄膜靶的近前向散射 龙欣宇 王佩佩 安红海 熊俊 谢志勇 方智恒 孙今人 王琛
 125203 小尺度靶丸冲击波调控的冲击波测量技术优化及应用 杨为明 段晓溪 张琛 理玉龙 刘浩 关赞洋 章欢 孙亮 董云松 杨冬 王哲斌 杨家敏

凝聚物质: 结构、力学和热学性质

- 126102 Laves-Co₂(HfTa) 合金的相稳定性及热物性 丁宁 倪晓东 田付阳
 126103 基于锗硅异质结双极晶体管的低噪声放大器及其反模结构的单粒子瞬态数值仿真研究 黄馨雨 张晋新 王信 吕玲 郭红霞 冯娟 闫允一 王辉 戚钧翔
 126201 机器学习辅助的 WC-Co 硬质合金硬度预测 宋睿 刘雪梅 王海滨 吕皓 宋晓艳
 126202 基团替代调控无铅有机钙钛矿铁电体的极化和压电特性的第一性原理研究 郑鹏飞 柳志旭 王超 刘卫芳
 126401 闭合回路相干增益原子系统中完美非互易反射光放大 李观荣 郑怡婷 徐琼怡 裴笑山 耿玥 严冬 杨红
 126801 混合沉积有机分子区域选择性生长的动力学蒙特卡罗模拟研究 汪长超 聂青苗 石亮 陈乃波 胡来归 鄢波
 126802 新型正交相 BN 单层半导体有毒气体吸附性能及电输运性能的理论研究 赵俊 姚璨 曾晖

凝聚物质: 电子结构、电学、磁学和光学性质

- 127101 节线半金属 AlB₂ 水环境下发生吸附后拓扑表面态变化 朱庞栋 王长昊 王如志
 127501 吉帕级单轴应力下 Mn₃Sn 单晶的磁化率增强 邓珊珊 宋平 刘潇贺 姚森 赵谦毅
 127801 基于脉冲受激布里渊散射光谱的非接触式黏弹性测量 李佳芮 乐陶然 尉昊赞 李岩

物理学交叉学科及有关科学技术领域

- 128501 喷墨打印高迁移率镉锌锡氧化物薄膜晶体管 赵泽贤 徐萌 彭聪 张涵 陈龙龙 张建华 李喜峰
 128502 3D NAND 闪存中 TiN 与氧化表面 F 吸附作用的第一性原理研究 方语莹 杨益 夏志良 霍宗亮
 128503 超晶格电子阻挡层周期数对 AlGa_n 基深紫外发光二极管性能的影响 刘举 曹一伟 吕全江 杨天鹏 米亭亭 王小文 刘军林

地球物理学、天文学和天体物理学

- 129201 雷暴电场对 LHAASO 观测面宇宙线次级光子的影响 阿西克古 周勋秀 张云峰

文章图片的彩色效果详见网刊



扫码阅读
电子版

ACTA PHYSICA SINICA

Vol. 73, No. 12, June 20, 2024

CONTENTS

SPECIAL TOPIC—Electrical/thermal properties of nanodielectrics

ARTICLE

- 127701 Molecular dynamics simulation of mechanical and thermal properties of nano-zinc oxide modified cellulose insulating paper
Zhang Yu-Ye Zhang Yi-Yi Wei Wen-Chang Su Zhi-Cheng Lan Dan-Quan Luo Shi-Hao
- 127702 Effect of interfacial electronic structure on conductivity and space charge characteristics of core-shell quantum dots/polyethylene nanocomposite insulation
Wang He-Yu Li Zhong-Lei Du Bo-Xue
- 127703 Improving insulation properties of epoxy filled with surface fluorinated polystyrene nanospheres
Yin Kai Guo Qi-Yang Zhang Tian-Yin Li Jing Chen Xiang-Rong

REVIEW

- 126101 Research progress of magnetic anisotropy enhancement mechanism of high-performance La-Co co-substituted M-type permanent magnet ferrites
Liu Ruo-Shui Wang Li-Chen Yu Xiang Sun Yang He Shi-Yue Zhao Tong-Yun Shen Bao-Gen
- 128901 Fundamental statistics of higher-order networks: a survey
Liu Bo Zeng Yu-Jie Yang Rong-Mei Lü Lin-Yuan

GENERAL

- 120501 Reconstruction of simplex structures based on phase synchronization dynamics
Luo Kai-Ming Guan Shu-Guang Zou Yong
- 120701 Design and implementation of timing system for single-shot imaging at Shanghai soft X-ray free-electron laser
Nie Yong-Gan Gao Zi-Chen Tong Ya-Jun Fan Jia-Dong Liu Gong-Fa Jiang Huai-Dong
- 120702 Neural network prediction of cooling heat transfer characteristics of supercritical R1234ze(E) in horizontal tube
Zhou Wen-Li Zhuo Wei-Wei Jiang Yi-Ran Ma Wen-Jie Dong Bao-Jun
- 120703 Calibration method of relative spectral response function of indirect imaging spectrometer
Li Xiao-Xiao Li Juan Bai Cai-Xun Chang Chen-Guang Hao Xiong-Bo Wen Zhen-Qing Wang Peng-Chong Feng Yu-Tao
- 120704 Adsorption configuration and assembly structure of vanadyl phthalocyanine molecule on copper oxide layer
Peng Lan-Qin Li Xiao-Yu Xing Yun Zhao Han Deng Yan-Tao Yu Ying-Hui

ATOMIC AND MOLECULAR PHYSICS

- 123201 Comparative study on generation of attosecond pulse train and phase information reconstruction
Zhu Xiao-Xian Gao Yi-Tan Wang Xian-Zhi Wang Yi-Ming Wang Ji Wang Zhao-Hua Zhao Kun Wei Zhi-Yi
- 123401 Theoretical investigation of electron-impact ionization of W^{6+} ion
Ma Li-Li Zhang Shi-Ping Zhang Fang-Jun Li Mai-Juan Jiang Jun Ding Xiao-Bin Xie Lu-You Zhang Deng-Hong Dong Chen-Zhong

(Continued)

- 123402 Dielectronic recombination experiment of Na-like Kr²⁵⁺ at heavy ion storage ring CSRe **COVER ARTICLE**
Shao Lin Huang Zhong-Kui Wen Wei-Qiang Wang Shu-Xing Huang Hou-Ke Ma Wan-Lu Liu Chang Wang Han-Bing Chen Dong-Yang Liu Xin Zhou Xiao-Peng Zhao Dong-Mei Zhang Shao-Feng Zhu Lin-Fan Ma Xin-Wen

ELECTROMAGNETISM, OPTICS, ACOUSTICS, HEAT TRANSFER, CLASSICAL MECHANICS, AND FLUID DYNAMICS

- 124101 Low-RCS electromagnetic metasurface antenna based on shared-aperture technique
Li Tong Yang Huan-Huan Li Qi Liao Jia-Wei Gao Kun Ji Ke-Feng Cao Xiang-Yu
- 124201 Switchable and optically transparent ultrawide stopband frequency selective surface for electromagnetic shielding
Wang Cheng-Rong Tang Li Zhou Yan-Ping Zhao Xiang Liu Chang-Jun Yan Li-Ping
- 124202 Computational polarized colorful Fourier ptychography imaging: a novel information reuse technique of polarization of scattering light field
Xiang Meng He Piao Wang Tian-Yu Yuan Lin Deng Kai Liu Fei Shao Xiao-Peng
- 124203 Focusing scattering light field with different states based on iterative algorithm
Duan Mei-Gang Zhao Ying Zuo Hao-Yi
- 124204 509 nm high power wide-tuned external cavity surface emitting laser
Wang Tao Peng Xue-Fang He Liang Shen Xiao-Yu Zhu Ren-Jiang Jiang Li-Dan Tong Cun-Zhu Song Yan-Rong Zhang Peng
- 124205 Low repetition rate passive mode-locked semiconductor disk laser
He Liang Peng Xue-Fang Shen Xiao-Yu Zhu Ren-Jiang Wang Tao Jiang Li-Dan Tong Cun-Zhu Song Yan-Rong Zhang Peng
- 124206 Nonlinear pulse compression technique based on in multi-pass plano-concave cavity
Li Pin-Bin Teng Hao Tian Wen-Long Huang Zhen-Wen Zhu Jiang-Feng Zhong Shi-Yang Yun Chen-Xia Liu Wen-Jun Wei Zhi-Yi
- 124701 Effect of wall-seeping gas film under different working media on stability of conical hypersonic boundary layer
Hu Yu-Fa Yi Shi-He Liu Xiao-Lin Xu Xi-Wang Zhang Zhen Zhang Zhen

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

- 125201 Numerical simulation study on microdischarge via a unified fluid model
Wang Zhen Zhao Zhi-Hang Fu Yang-Yang
- 125202 Near forward scattering light of planar film target driven by broadband laser
Long Xin-Yu Wang Pei-Pei An Hong-Hai Xiong Jun Xie Zhi-Yong Fang Zhi-Heng Sun Jin-Ren Wang Chen
- 125203 Optimization and application of shock wave measurement technology for shock-timing experiments on small-scale capsules
Yang Wei-Ming Duan Xiao-Xi Zhang Chen Li Yu-Long Liu Hao Guan Zan-Yang Zhang Huan Sun Liang Dong Yun-Song Yang Dong Wang Zhe-Bin Yang Jia-Min

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

- 126102 Phase stability and thermo-physical properties of Laves-Co₂(HfTa) alloys
Ding Ning Ni Xiao-Dong Tian Fu-Yang
- 126103 Numerical simulation of single-particle transients in low-noise amplifiers based on silicon-germanium heterojunction bipolar transistors and inverse-mode structures
Huang Xin-Yu Zhang Jin-Xin Wang Xin Lü Ling Guo Hong-Xia Feng Juan Yan Yun-Yi Wang Hui Qi Jun-Xiang
- 126201 Hardness prediction of WC-Co cemented carbide based on machine learning model
Song Rui Liu Xue-Mei Wang Hai-Bin Lü Hao Song Xiao-Yan

(Continued)

- 126202 First principles study on polarization and piezoelectric properties of group substitution regulated lead-free organic perovskite ferroelectrics
Zheng Peng-Fei Liu Zhi-Xu Wang Chao Liu Wei-Fang
- 126401 Perfect non-reciprocal reflection amplification in closed loop coherent gain atomic system
Li Guan-Rong Zheng Yi-Ting Xu Qiong-Yi Pei Xiao-Shan Geng Yue Yan Dong Yang Hong
- 126801 Kinetic Monte Carlo simulation of selective area growth of mix deposited organic molecules
Wang Chang-Chao Nie Qing-Miao Shi Liang Chen Nai-Bo Hu Lai-Gui Yan Bo
- 126802 Theoretical study of adsorption properties and electrical transport performance of toxic gas molecules on novel orthorhombic BN monolayer semiconductor
Zhao Jun Yao Can Zeng Hui

CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC, AND OPTICAL PROPERTIES

- 127101 Variations of topological surface states of nodal line semimetal AlB_2 after adsorption in aqueous environment
Zhu Pang-Dong Wang Chang-Hao Wang Ru-Zhi
- 127501 Enhancement of magnetic susceptibility of Mn_3Sn single crystal under GPa-level uniaxial stress
Deng Shan-Shan Song Ping Liu Xiao-He Yao Sen Zhao Qian-Yi
- 127801 Non-contact viscoelasticity measurements based on impulsive stimulated Brillouin spectroscopy
Li Jia-Rui Le Tao-Ran Wei Hao-Yun Li Yan

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 128501 Inkjet printing high mobility indium-zinc-tin oxide thin film transistor
Zhao Ze-Xian Xu Meng Peng Cong Zhang Han Chen Long-Long Zhang Jian-Hua Li Xi-Feng
- 128502 First-principles study of F adsorption by TiN with its oxide surface in three-dimensional NAND flash memory
Fang Yu-Xuan Yang Yi Xia Zhi-Liang Huo Zong-Liang
- 128503 Influence of period number of superlattice electron barrier layer on the performance of AlGaN-based deep ultraviolet LED
Liu Ju Cao Yi-Wei Lv Quan-Jiang Yang Tian-Peng Mi Ting-Ting Wang Xiao-Wen Liu Jun-Lin

GEOPHYSICS, ASTRONOMY, AND ASTROPHYSICS

- 129201 Effects of thunderstorms electric field on secondary photons of cosmic ray at large high altitude air shower observatory
Arikegu Zhou Xun-Xiu Zhang Yun-Feng

Color figures can be viewed in the online issue.



Online issue