

物理学报

第 73 卷 第 24 期 2024 年 12 月 20 日

目 次

观点和展望

- 240501 维格纳晶体的实验观测 高幸 薛禹承 姜宇航 毛金海

特邀综述

- 241401 希格斯物理研究: 昨天、今天、明天
... 周辰 朱永峰 郭倩颖 张轩豪 张铭滔 耿新月 何杰汉 潘程扬 王一品 杨楚雪 陈嘉华

专题: 极端条件原子分子动力学

- 240101 极端条件原子分子动力学专题编者按 吴勇 丁大军
观点和展望

- 244202 从“强场原子物理”到“强场原子核物理” 王旭
综述

- 246101 内壳层体系的 X 射线腔量子光学 汪书兴 李天钧 黄新朝 朱林繁
研究论文

- 240701 高电荷态 Ar⁸⁺离子与 He 原子碰撞中双电子俘获量子态选择截面实验研究 **封面文章** 吴怡娇
孟天鸣 张献文 谭旭 马蒲芳 殷浩 任百惠 屠秉晟 张瑞田 肖君 马新文 邹亚明 魏宝仁

- 243201 强场激发 Rydberg 态的激光包络调控 赵零一 刘金磊 江涛 郎跃 赵增秀

- 243301 超快强场相干调控氯溴甲烷分子的解离研究 景文泉 贾利娟 孙兆鹏 赵松峰 束传存

- 243401 C₄⁻离子的低能电子弹性散射研究: 共振态与同分异构 李灵远 孟举 王克栋

- 244201 氦原子贝塞尔涡旋光电离的理论研究 赵婷 宫毛毛 张松斌

- 248201 时间延迟双色飞秒激光中 H₂⁺ 的解离动力学研究 王景哲 董福龙 刘杰

综述

- 248802 钙钛矿基三结叠层太阳电池的研究进展 许畅 郑德旭 董心睿 吴飒建 武明星 王开 刘生忠

总论

- 240301 双模光机械腔中冷原子的量子相变和超辐射相塌缩 赵秀琴 张文慧

- 240302 基于监控标记单光子源的量子密钥分发协议
... 罗一振 马洛嘉 孙铭烁 吴思睿 邱丽华 王禾 王琴

原子和分子物理学

- 243402 基于 **R** 矩阵理论的气体分子弹性碰撞截面计算及其与绝缘强度关联分析
... 张兴义 杨帅 尚述祥 吴少博 王航 肖集雄

电磁学、光学、声学、传热学、经典力学和流体动力学

- 244101 用于分析单轴/双轴双各向异性媒质电磁特性的快速传输矩阵法 樊久扬 张玉贤 冯晓丽 黄志祥

气体、等离子体和放电物理

- 245201 等离子体-光子晶体阵列结构波导模型的电磁特性 杨雨森 王林 苟德桔 唐正明
- 245202 羽流区磁场对霍尔推力器性能影响的二维模拟研究 杨三祥 赵以德 代鹏 李建鹏 耿海 杨俊泰 贾艳辉 郭宁
- 245203 EAST 上 RMP 驱动等离子体自发旋转物理机制的实验研究 金伦飞 张洪明 尹相辉 吕波 Cheonho Bae
叶凯萱 盛回 王士凡 赵海林 顾帅 袁泓 林子超 傅盛宇 卢迪安 符佳 王福地
- 245204 水下电爆炸气泡脉动及能量特性实验研究 周少彤 莫腾富 任晓东 徐强 孙奇志 张思群 黄显宾 张朝辉 刘文燕

凝聚物质: 结构、力学和热学性质

- 246102 Pd-Si 非晶合金动力学非均匀性的对称与有序 陈贝 王小云 刘涛 高明 文大东 邓永和 彭平

凝聚物质: 电子结构、电学、磁学和光学性质

- 247801 反式钙钛矿太阳电池中钾离子掺杂 NiO 提升电荷收集能力研究 赵兴 李丹妮 李美成

物理学交叉学科及有关科学技术领域

- 248101 三模晶体相场法研究应变诱导石墨烯晶界位错演化 高丰 李欢庆 宋卓 赵宇宏
- 248401 基于双修饰策略制备高性能反式钙钛矿太阳能电池 张晓春 王立坤 商文丽 万政慧 岳鑫 杨华翼 李婷 王辉
- 248801 激光诱导烧结对 TOPCon 太阳电池接触性能影响 谢一博 方超炎 陈德爽 何悦 黄仕华

地球物理学、天文学和天体物理学

- 249601 太阳系中旋转小行星表面充电特性 宋智颖 全荣辉 刘志贵

更正

- 249901 更正: 基于干式制冷的低温扫描探针显微镜研究进展—[物理学报 2024, 73(22): 228701]
..... 黄远志 杨传浩 何颂平 马瑞松 郁庆
(卷终)

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. 24, December 20, 2024

CONTENTS

VIEWS AND PERSPECTIVES

- 240501 Experimental observations of Wigner crystals
Gao Xing Xue Yu-Cheng Jiang Yu-Hang Mao Jin-Hai

INVITED REVIEW

- 241401 Higgs physics research: yesterday, today, and tomorrow
Zhou Chen Zhu Yong-Feng Guo Qian-Ying Zhang Xuan-Hao Zhang Ming-Tao Geng Xin-Yue He Jie-Han Pan Cheng-Yang Wang Yi-Pin Yang Chu-Xue Chen Jia-Hua

SPECIAL TOPIC—Dynamics of atoms and molecules at extremes

- 240101 Preface to the special topic: Dynamics of atoms and molecules at extremes
Wu Yong Ding Da-Jun

VIEWS AND PERSPECTIVES

- 244202 From “strong-field atomic physics” to “strong-field nuclear physics”
Wang Xu

REVIEW

- 246101 X-ray cavity quantum optics of inner-shell transitions
Wang Shu-Xing Li Tian-Jun Huang Xin-Chao Zhu Lin-Fan

ARTICLE

- 240701 Experimental measurement of state selective double electron capture in collision between 1.4–20 keV/u Ar⁸⁺ with He **COVER ARTICLE**
Wu Yi-Jiao Meng Tian-Ming Zhang Xian-Wen Tan Xu Ma Pu-Fang Yin Hao Ren Bai-Hui Tu Bing-Sheng Zhang Rui-Tian Xiao Jun Ma Xin-Wen Zou Ya-Ming Wei Bao-Ren

- 243201 Laser envelope control of strong field excited Rydberg states
Zhao Ling-Yi Liu Jin-Lei Jiang Tao Lang Yue Zhao Zeng-Xiu

- 243301 Dissociation of chlorobromomethane molecules coherently controlled by ultrafast strong field
Jing Wen-Quan Jia Li-Juan Sun Zhao-Peng Zhao Song-Feng Shu Chuan-Cun

- 243401 Low-energy electron elastic scattering of C₄⁻ anions: Resonance states and conformers
Li Jiong-Yuan Meng Ju Wang Ke-Dong

- 244201 Theoretical study on photo-ionization of helium atoms by Bessel vortex light
Zhao Ting Gong Mao-Mao Zhang Song-Bin

- 248201 Dissociation dynamic study of H₂⁺ in time-delayed two-color femtosecond lasers
Wang Jing-Zhe Dong Fu-Long Liu Jie

(Continued)

REVIEW

- 248802 Research progress of perovskite-based triple-junction tandem solar cells
Xu Chang Zheng De-Xu Dong Xin-Rui Wu Sa-Jian Wu Ming-Xing Wang Kai Liu Sheng-Zhong

GENERAL

- 240301 Quantum phase transitions and superradiation phase collapse of cold atoms in a two-mode photomechanical cavity
Zhao Xiu-Qin Zhang Wen-Hui

- 240302 Source monitoring quantum key distribution protocol based on heralded single photon source
Luo Yi-Zhen Ma Luo-Jia Sun Ming-Shuo Wu Si-Rui Qiu Li-Hua Wang He Wang Qin

ATOMIC AND MOLECULAR PHYSICS

- 243402 *R*-matrix theory based calculation of elastic cross-sections of gas molecules and analysis of its correlation with insulation strength
Zhang Xing-Yi Yang Shuai Shang Shu-Xiang Wu Shao-Bo Wang Hang Xiao Ji-Xiong

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

- 244101 Rapid-transfer matrix method for analyzing electromagnetic properties of uniaxial/biaxial bianisotropic media
Fan Jiu-Yang Zhang Yu-Xian Feng Xiao-Li Huang Zhi-Xiang

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

- 245201 Electromagnetic characteristics of waveguide model of plasma-photon crystal array structure
Yang Yu-Sen Wang Lin Gou De-Zhi Tang Zheng-Ming

- 245202 Two-dimensional simulation of influence of plume magnetic field on performance of Hall thrusters
Yang San-Xiang Zhao Yi-De Dai Peng Li Jian-Peng Geng Hai Yang Jun-Tai Jia Yan-Hui Guo Ning

- 245203 Experimental investigations on physical mechanisms of RMP-induced intrinsic rotations at EAST
Jin Yi-Fei Zhang Hong-Ming Yin Xiang-Hui Lü Bo Cheonho Bae Ye Kai-Xuan Sheng Hui Wang Shi-Fan Zhao Hai-Lin Gu Shuai Yuan Hong Lin Zi-Chao Fu Sheng-Yu Lu Di-An Fu Jia Wang Fu-Di

- 245204 Experimental study on pulsation and energy characteristics of bubbles produced by underwater electrical explosion
Zhou Shao-Tong Mo Teng-Fu Ren Xiao-Dong Xu Qiang Sun Qi-Zhi Zhang Si-Qun Huang Xian-Bin Zhang Zhao-Hui Liu Wen-Yan

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

- 246102 Symmetry and order of kinetic heterogeneity in Pd-Si amorphous alloys
Chen Bei Wang Xiao-Yun Liu Tao Gao Ming Wen Da-Dong Deng Yong-He Peng Ping

(Continued)

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

- 247801 Enhancement of charge collection capability by potassium-doped NiO in inverted planar perovskite solar cells

Zhao Xing Li Dan-Ni Li Mei-Cheng

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 248101 Strain induced dislocation evolution at graphene grain boundary by three-mode phase-field crystal method

Gao Feng Li Huan-Qing Song Zhuo Zhao Yu-Hong

- 248401 Fabrication of high-performance inverted perovskite solar cells based on dual modification strategy

Zhang Xiao-Chun Wang Li-Kun Shang Wen-Li Wan Zheng-Hui Yue Xin Yang Hua-Yi Li Ting Wang Hui

- 248801 Influence of laser induced sintering on contact performance of TOPCon solar cells

Xie Yi-Bo Fang Chao-Yan Chen De-Shuang He Yue Huang Shi-Hua

GEOPHYSICS, ASTRONOMY, AND ASTROPHYSICS

- 249601 Surface charging characteristics of rotating asteroids in the solar system

Song Zhi-Ying Quan Rong-Hui Liu Zhi-Gui

ERRATA

- 249901 Erratum: Advances in dry low-temperature scanning probe microscopy system development—[*Acta Phys. Sin.* 2024, 73(22): 228701]

Huang Yuan-Zhi Yang Chuan-Hao He Song-Ping Ma Rui-Song Huan Qing

(END OF THE VOLUME)

Color figures can be viewed in the online issue.



Online issue