

物 理 学 报

第 72 卷 第 5 期 2023 年 3 月 5 日

目 次

特邀综述

- 057503 磁子学中的拓扑物态与量子效应 王振宇 李志雄 袁怀洋 张知之 曹云姗 严鹏

专题: 阿秒物理

综述

- 053202 阿秒脉冲的发展及其在原子分子超快动力学中的应用 陶琛玉 雷建廷 余璇 骆炎 马新文 张少锋
054207 强激光与固体密度等离子体作用产生孤立阿秒脉冲的研究进展 王云良 颜学庆
研究论文
054204 Yb:CaYAlO₄ 再生放大器 王阁阳 白川 麦海静 郑立 田轩 于洋 田文龙 徐晓东 魏志义 朱江峰

综述

- 052901 液氩探测器在稀有事例探测中的应用和发展 郑昊哲 刘圆圆 王力 程建平
054202 叠层相干衍射成像算法发展综述 潘新宇 毕筱雪 董政 耿直 徐晗 张一 董宇辉 张承龙
057301 二维层状热电材料研究进展 余泽浩 张力发 吴靖 赵云山
058801 迈向效率大于 30% 的钙钛矿/晶硅叠层太阳能电池技术的研究进展 张美荣 祝曾伟 杨晓琴 于同旭 郁骁琦 卢荻 李顺峰 周大勇 杨辉

总论

- 050301 Markov 环境下“X”态基于 CHSH 不等式的量子非局域关联检验 曾柏云 辜鹏宇 蒋世民 贾欣燕 樊代和
050302 光源相位噪声对高斯玻色采样的影响 覃俭
050303 基于非高斯态区分探测的往返式离散调制连续变量量子密钥分发方案 吴晓东 黄端
050401 非均匀饱含黏性流体孔隙介质中声波传播及井孔声场分析 彭凡 张秀梅 刘琳 王秀明

原子和分子物理学

- 053201 多微管阵列结构腔-原子吸收光谱测量 Rb 同位素比 齐刚 黄印博 凌菲彤 杨佳琦 黄俊 杨韬 张雷雷 卢兴吉 袁子豪 曹振松

电磁学、光学、声学、传热学、经典力学和流体动力学

- 054201 基于连续金属膜对称光栅结构的完美吸收特性 王正宇 黄飞 薛润玉 王正岭
054203 太赫兹多波束调控反射编码超表面 黄若彤 李九生
054205 面向空间引力波探测的毫赫兹频段低强度噪声单频激光器 王在渊 王浩浩 李宇航 柳强
054206 基于激光吸收光谱技术的在线层析成像算法 赵荣 周宾 刘奇 戴明露 汪步斌 王一红
054208 利用 Gyrator 正则变换实现环形激光阵列的 Talbot 效应 李尉 代京京 温丛阳 宗梦雅 李胜南 王智勇
054301 基于非对称吸声器的发动机声学超表面声衬 白宇 张振方 杨海滨 蔡力 郁殿龙

- 054302 平面波声场中内置偏心液滴的弹性球壳声辐射力 ... 潘瑞琪 李凡 杜芷玮 胡静 莫润阳 王成会
 054303 联合简正波水波和底波频散特性的贝叶斯地声参数反演 郝望 段睿 杨坤德
 054304 基于传输矩阵法的任意变厚度环型压电超声换能器 董宜雷 陈诚 林书玉
 054401 油面上相邻 Leidenfrost 液滴的相互作用及运动机制 王浩 徐进良
 054701 海洋深水表面张力波-重力波的单波列第 n 阶自共振定律 黄虎 田泽冰

气体、等离子体和放电物理

- 055201 基于光谱诊断的沿面介质阻挡放电产物变化的物理-化学机理 刘坤 左杰 周雄峰 冉从福 杨明昊 耿文强
 055202 电子温度各向异性对螺旋波等离子体中电磁模式的传播及功率沉积特性的影响 李文秋 唐彦娜 刘雅琳 王刚

凝聚物质: 结构、力学和热学性质

- 056101 二元氧化物 Yb_3TaO_7 的非晶状热传导机理 王学智 汤雨婷 车军伟 令狐佳珺 侯兆阳
 056801 聚变材料钨辐照后退火形成的位错环特性及 inside-outside 衬度分析 徐驰 万发荣

凝聚物质: 电子结构、电学、磁学和光学性质

- 057101 H-Pb-Cl 中可调控的巨型 Rashba 自旋劈裂和量子自旋霍尔效应 薛文明 李金 何朝宇 欧阳滔 罗朝波 唐超 钟建新
 057102 单层 Nb_2SiTe_4 基化合物的带隙异常变化 王晓菲 孟威威 赵培丽 贾双凤 郑赫 王建波
 057103 分层化金属陶瓷光热转换涂层的微结构构筑与热稳定性 康亚斌 袁小鹏 王晓波 李克伟 宫殿清 程旭东
 057302 减小边缘复合助力 28% 效率的四端钙钛矿/硅叠层太阳能电池 方正 张飞 秦校军 杨柳 靳永斌 周养盈 王兴涛 刘云 谢立强 魏展画
 057501 Ni/Pt 异质界面的自旋阻塞效应 杜梦瑶 邱志勇
 057502 用于铁电体复杂畴结构模拟的布朗方程 欧阳鑫健 张紫阳 张锋 张佳乐 王大威
 057801 光纤探针测量及多尺度熵鉴别超临界类沸腾传热模式 何孝天 徐进良 程怡玮
 057802 线极化与圆极化波均可吸收的太赫兹超表面 吴柔兰 李九生

物理学交叉学科及有关科学技术领域

- 058401 超宽带等离子体相对论微波噪声放大器的物理分析和数值模拟 杨温渊 董焯 孙会芳 杨郁林 董志伟
 058501 二噻吩硼烷异构体分子结构测定的第一性原理研究 ... 彭淑平 黄旭东 刘乾 任鹏 伍丹 范志强
 058802 Mg 掺杂提升钠离子电池正极材料高电压循环性能 许伟良 党荣彬 杨佯 郭秋卜 丁飞翔 韩帅 唐小涵 刘渊 左战春 王晓琦 杨瑞 金旭 容晓晖 洪捐 许宁 胡勇胜
 058901 面向图像分类的混合量子长短期记忆神经网络构建方法 ... 杨光 钞苏亚 聂敏 刘原华 张美玲

文章图片的彩色效果详见网刊



扫码阅读
电子版

ACTA PHYSICA SINICA

Vol. 72, No. 5, March 5, 2023

CONTENTS

INVITED REVIEW

- 057503 Topological states and quantum effects in magnonics
Wang Zhen-Yu Li Zhi-Xiong Yuan Huai-Yang Zhang Zhi-Zhi Cao Yun-Shan Yan Peng

SPECIAL TOPIC—Attosecond physics

REVIEW

- 053202 Development of attosecond pulses and their application to ultrafast dynamics of atoms and molecules
Tao Chen-Yu Lei Jian-Ting Yu Xuan Luo Yan Ma Xin-Wen Zhang Shao-Feng
- 054207 Isolated attosecond pulse generation from the interaction of intense laser pulse with solid density plasma
Wang Yun-Liang Yan Xue-Qing

ARTICLE

- 054204 Yb:CaYAlO₄ regenerative amplifier
Wang Ge-Yang Bai Chuan Mai Hai-Jing Zheng Li Tian Xuan Yu Yang Tian Wen-Long Xu Xiao-Dong Wei Zhi-Yi Zhu Jiang-Feng

REVIEW

- 052901 Application and development of liquid argon detector in rare event detection
Zheng Hao-Zhe Liu Yuan-Yuan Wang Li Cheng Jian-Ping
- 054202 Review of development for ptychography algorithm
Pan Xin-Yu Bi Xiao-Xue Dong Zheng Geng Zhi Xu Han Zhang Yi Dong Yu-Hui Zhang Cheng-Long
- 057301 Recent progress of 2-dimensional layered thermoelectric materials
Yu Ze-Hao Zhang Li-Fa Wu Jing Zhao Yun-Shan
- 058801 Research progress of perovskite/crystalline silicon tandem solar cells with efficiency of over 30%
Zhang Mei-Rong Zhu Zeng-Wei Yang Xiao-Qin Yu Tong-Xu Yu Xiao-Qi Lu Di Li Shun-Feng Zhou Da-Yong Yang Hui

GENERAL

- 050301 Quantum nonlocality testing of the “X” state based on the CHSH inequality in Markov environment
Zeng Bai-Yun Gu Peng-Yu Jiang Shi-Min Jia Xin-Yan Fan Dai-He
- 050302 Investigation of Gaussian boson sampling under phase noise of the light source
Qin Jian
- 050303 Plug-and-play discrete modulation continuous variable quantum key distribution based on non-Gaussian state-discrimination detection
Wu Xiao-Dong Huang Duan
- 050401 Propagation of acoustic wave and analysis of borehole acoustic field in porous medium of heterogeneous viscous fluid
Peng Fan Zhang Xiu-Mei Liu Lin Wang Xiu-Ming

(Continued)

ATOMIC AND MOLECULAR PHYSICS

- 053201 Measurement of Rb isotope ratio by atomic absorption spectroscopy with multi-microchannel array structure cavity
Qi Gang Huang Yin-Bo Ling Fei-Tong Yang Jia-Qi Huang Jun Yang Tao Zhang Lei-Lei Lu Xing-Ji Yuan Zi-Hao Cao Zhen-Song

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

- 054201 Perfect absorption of symmetric grating structure based on the continuous metal film
Wang Zheng-Yu Huang Fei Xue Run-Yu Wang Zheng-Ling
- 054203 Terahertz multibeam modulation reflection-coded metasurface
Huang Ruo-Tong Li Jiu-Sheng
- 054205 Millihertz band low-intensity-noise single-frequency laser for space gravitational wave detection
Wang Zai-Yuan Wang Jie-Hao Li Yu-Hang Liu Qiang
- 054206 Online tomography algorithm based on laser absorption spectroscopy
Zhao Rong Zhou Bin Liu Qi Dai Ming-Lu Wang Bu-Bin Wang Yi-Hong
- 054208 Talbot effect of ring laser array realized by Gyrator canonical transformation
Li Wei Dai Jing-Jing Wen Cong-Yang Zong Meng-Ya Li Sheng-Nan Wang Zhi-Yong
- 054301 Metasurface acoustic liner of engine based on asymmetric absorber
Bai Yu Zhang Zhen-Fang Yang Hai-Bin Cai Li Yu Dian-Long
- 054302 Acoustic radiation force of elastic spherical shell with eccentric droplet in plane wave acoustic field
Pan Rui-Qi Li Fan Du Zhi-Wei Hu Jing Mo Run-Yang Wang Cheng-Hui
- 054303 Bayesian geoacoustic parameter inversion based on dispersion characteristics of normal mode water wave and ground wave
Hao Wang Duan Rui Yang Kun-De
- 054304 Arbitrary variable thickness annular piezoelectric ultrasonic transducer based on transfer matrix method
Dong Yi-Lei Chen Cheng Lin Shu-Yu
- 054401 Interaction and motion of two neighboring Leidenfrost droplets on oil surface
Wang Hao Xu Jin-Liang
- 054701 The n th-order self-resonance law of single wave train for surface capillary-gravity waves in deep water
Huang Hu Tian Ze-Bing

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

- 055201 Physico-chemical mechanism of surface dielectric barrier discharge product change based on spectral diagnosis
Liu Kun Zuo Jie Zhou Xiong-Feng Ran Cong-Fu Yang Ming-Hao Geng Wen-Qiang
- 055202 Influence of electron temperature anisotropy on wave mode propagation and power deposition characteristics in helicon plasma
Li Wen-Qiu Tang Yan-Na Liu Ya-Lin Wang Gang

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

- 056101 Mechanism of amorphous-like thermal conductivity in binary oxide Yb_3TaO_7
Wang Xue-Zhi Tang Yu-Ting Che Jun-Wei Linghu Jia-Jun Hou Zhao-Yang
- 056801 Analysis of dislocation characteristics and inside-outside contrasts in irradiated and annealed tungsten as a fusion reactor material
Xu Chi Wan Fa-Rong

(Continued)

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

- 057101 Giant and tunable Rashba spin splitting and quantum spin Hall effect in H-Pb-Cl
Xue Wen-Ming Li Jin He Chao-Yu Ouyang Tao Luo Chao-Bo Tang Chao Zhong Jian-Xin
- 057102 Band gap anomaly in single-layer Nb₂SiTe₄-based compounds
Wang Xiao-Fei Meng Wei-Wei Zhao Pei-Li Jia Shuang-Feng Zheng He Wang Jian-Bo
- 057103 Microstructure building and thermal stability of cermet-based photothermal conversion coatings with layered structures
Kang Ya-Bin Yuan Xiao-Peng Wang Xiao-Bo Li Ke-Wei Gong Dian-Qing Cheng Xu-Dong
- 057302 Four-terminal perovskite/silicon series solar cells with 28% efficiency achieved by suppressing edge recombination
Fang Zheng Zhang Fei Qin Xiao-Jun Yang Liu Jin Yong-Bin Zhou Yang-Ying Wang Xing-Tao Liu Yun Xie Li-Qiang Wei Zhan-Hua
- 057501 Spin blocking effect at Ni/Pt heterojunction
Du Meng-Yao Qiu Zhi-Yong
- 057502 Brown's equation for the simulation of complex domain structures in ferroelectrics
Ouyang Xin-Jian Zhang Zi-Yang Zhang Feng Zhang Jia-Le Wang Da-Wei
- 057801 Measurements and identification of supercritical pseudo-boiling heat transfer modes based on fiber optic probes and multiscale entropy
He Xiao-Tian Xu Jin-Liang Cheng Yi-Wei
- 057802 Terahertz metasurface absorbed by both linearly and circularly polarized waves
Wu Rou-Lan Li Jiu-Sheng

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 058401 Physical analysis and numerical simulations of ultra wideband plasma relativistic microwave noise amplifier
Yang Wen-Yuan Dong Ye Sun Hui-Fang Yang Yu-Lin Dong Zhi-Wei
- 058501 First-principles study of single-molecule-structure determination of dithienoborepin isomers
Peng Shu-Ping Huang Xu-Dong Liu Qian Ren Peng Wu Dan Fan Zhi-Qiang
- 058802 Magnesium doping improved characteristics of high voltage cycle of layered cathode of sodium ion battery
Xu Wei-Liang Dang Rong-Bin Yang Yang Guo Qiu-Bo Ding Fei-Xiang Han Shuai Tang Xiao-Han Liu Yuan Zuo Zhan-Chun Wang Xiao-Qi Yang Rui Jin Xu Rong Xiao-Hui Hong Juan Xu Ning Hu Yong-Sheng
- 058901 Construction method of hybrid quantum long-short term memory neural network for image classification
Yang Guang Chao Su-Ya Nie Min Liu Yuan-Hua Zhang Mei-Ling

Color figures can be viewed in the online issue.



Online issue