

物 理 学 报

第 74 卷 第 8 期 2025 年 4 月 20 日

目 次

专题: 无序合金的序调控

研究论文

- 086101 镍钴铬多主元合金高温高压相图与相变动力学模拟 **封面文章** 熊浩智 王云江
086102 体心立方多主元合金中原子应变的计算模拟 宋倩倩 张博召 丁俊
086103 $(\text{NiCoV})_{95}\text{W}_5$ 中熵合金的动态力学性能与变形机理
..... 路圣晗 陈颂阳 崔广鹏 周丹 蔡伟金 宋旻 王章维

专题: 关联电子材料与散射谱学

综述

- 087402 铜氧化物超导体电荷序的共振 X 射线散射研究进展 陈莹 闫裕杰 武岳彤 王奇思

专题: 少电子原子分子精密谱

综述

- 083101 B -样条基组方法在少电子原子结构精密计算中的应用 张永慧 史庭云 唐丽艳

综述

- 087401 新型非常规超导体 UTe_2 的单晶生长方法研究进展 薛子威 袁登鹏 谭世勇

总论

- 080301 面向最大割问题的量子近似优化算法设计 王云江 习汇明 肖卓彦 王增斌 石莎
080401 空间引力波探测太极计划惯性传感器标度因数与质心偏差的在轨定标方案设计
..... 刘畅 魏晓通 张昊越 邓琼 梁博 强丽娥 徐鹏 齐克奇 王少鑫
080701 B_2S_3 对 $[111]$ 晶向高压合成金刚石的影响 ... 王帅 康如威 李勇 肖宏宇 王应 冉茂武 马红安

基本粒子物理学与场

- 081101 芝诺悖论与黑洞信息丢失问题 葛先辉

核物理学

- 082501 基于变分自编码器的伽马单中子出射反应截面实验数据离群点研究
..... 谢金辰 陶曦 续瑞瑞 田源 邢康 葛智刚 牛一斐

原子和分子物理学

- 083201 射频场缀饰的直流电场 Floquet-电磁诱导透明光谱特性研究
..... 段昊男 姬中华 刘伟新 苏殿强 李经宽 赵延霆

电磁学、光学、声学、传热学、经典力学和流体动力学

- 084201 基于全局拟合的多普勒差分干涉仪成像漂移检测方法
..... 文镇清 李娟 郝雄波 畅晨光 李洪波 左浩璞 傅顿 冯玉涛

084202	融合注意力机制的卷积网络单像素成像	王翔	周义深	张轩阁	陈希浩
084203	基于注意力卷积神经网络的高质量全息图快速生成算法	孙康生	韩超	秦海峰	顾涛
084204	多能级里德伯原子中实现 3.4 GHz 微波增强测量	薛晶晶	李若楠	胡雪松	孙培晟
084205	人工规范场调控下的单光子散射	汪润婷	王旭东	梅锋	肖连团
084206	含两能级原子系综的复合光力系统中的和边带效应	廖庆洪	唐志安	敖佳文	
084401	硅酸锆对 $\text{Pb}_3\text{O}_4/\text{Mg}/\text{PTFE}$ 红外诱饵剂远红外辐射性能影响 ...	王冰	陈宗胜	时家明	许河秀

气体、等离子体和放电物理

085201	电子回旋共振激发氙负离子数密度的光发射谱诊断	陈越	朱晓东
--------	------------------------------	----	-----

凝聚物质: 结构、力学和热学性质

086801	$\text{Cd}(0001)$ 表面上苈分子的薄膜生长及电子透射现象	余涛	付诗润	鲁鸿平	王俊忠
--------	--	----	-----	-----	-----

凝聚物质: 电子结构、电学、磁学和光学性质

087301	具有超低比导通电阻的双漂移区双导通路新型横向双扩散金属氧化物半导体	段宝兴	任宇壕	唐春萍	杨银堂
087501	光诱导磁子态调控的宽频带非互易传输	陈志坚	赵恺欣	王辰笑	魏纯可
087701	计及陷阱演变的高介电芳香族聚脲老化特性及机理 ...	冯阳	张硕	周彬	刘培焱
087801	DyFeO_3 中高于 Morin 温度的新型磁相变	苏浩斌	郑世芸	王宁	朱国锋
		居学尉	黄峰	曹义明	王向峰

物理学交叉学科及有关科学技术领域

088101	$\text{Fe}_{73.5}\text{Si}_{13.5}\text{B}_9\text{Cu}_1\text{Nb}_3$ 非晶合金的高温氧化和晶化机理	张响	宋英杰	刘海顺	熊翔
088201	Al 含量对 $\text{Li}_{1+x}\text{Al}_x\text{Ti}_{2-x}(\text{PO}_4)_3$ 固态电解质表面稳定性、电子结构及 Li 离子输运性质的影响	李梅	严怡	蓝雯欣	孙宝珍
088701	基于奇异值分解正则化和快速迭代收缩阈值算法的无相位辐射源重构算法	邓垫君	李燕		
088702	聚焦双环完美涡旋光束对瑞利微粒的俘获	师鹏博	杨晨	尹晓金	王洁
088703	聚合物衬底上微纳物体的激光捕获及操控	尹越	窦琳	沈天赐	刘家彤

(本期责任编辑: 吕国华)

文章图片的彩色效果详见网刊



扫码阅读
电子版

ACTA PHYSICA SINICA

Vol. 74, No. 8, April 20, 2025

CONTENTS

SPECIAL TOPIC—Order tuning in disordered alloys

ARTICLE

- 086101 Kinetic simulation of phase diagram and phase transitions in NiCoCr multi-principal element alloy at high temperature and high pressure **COVER ARTICLE**
XIONG Haozhi WANG Yunjiang
- 086102 Computational simulation of atomic strain in body-centered cubic multi-principal element alloys
SONG Qianqian ZHANG Bozhao DING Jun
- 086103 Dynamic mechanical properties and deformation mechanism of (NiCoV)₉₅W₅ medium entropy alloy
LU Shenghan CHEN Songyang CUI Guangpeng ZHOU Dan CAI Weijin SONG Min WANG Zhangwei

SPECIAL TOPIC—Correlated electron materials and scattering spectroscopy

REVIEW

- 087402 Research progress of resonant X-ray scattering of charge order in cuprate superconductors
CHAN Ying YAN Yujie WU Yuetong WANG Qisi

SPECIAL TOPIC—Precision spectroscopy of few-electron atoms and molecules

REVIEW

- 083101 Applications of *B*-spline method in precise calculation of structure of few-electron atoms
ZHANG Yonghui SHI Tingyun TANG Liyan

REVIEW

- 087401 Advances in single crystal growth methods for novel unconventional superconductor UTe₂
XUE Ziwei YUAN Dengpeng TAN Shiyong

GENERAL

- 080301 Design of quantum approximation optimization algorithm for the maximum cut problem
WANG Yunjiang XI Huiming XIAO Zhuoyan WANG Zengbin SHI Sha
- 080401 Design of in-orbit calibration scheme for scale factor and center-of-mass deviation of inertial sensor of Taiji program for space gravitational wave detection
LIU Chang WEI Xiaotong ZHANG Haoyue DENG Qiong LIANG Bo QIANG Li'E XU Peng QI Keki WANG Shaoxin
- 080701 Influence of B₂S₃ additive on [111]-oriented diamond crystal synthesized under high pressure condition
WANG Shuai KANG Ruwei LI Yong XIAO Hongyu WANG Ying RAN Maowu MA Hongan

(Continued)

THE PHYSICS OF ELEMENTARY PARTICLES AND FIELDS

- 081101 Zeno's paradox and black hole information loss problem
Ge Xianhui

NUCLEAR PHYSICS

- 082501 Outliers identification of experimental (γ , n) reaction cross section via variational autoencoder
XIE Jinchen TAO Xi XU Ruirui TIAN Yuan XING Kang GE Zhigang NIU Yifei

ATOMIC AND MOLECULAR PHYSICS

- 083201 Spectral characteristics of Floquet-electromagnetically induced transparency dressed by radio frequency field in a direct current electric field
DUAN Haonan JI Zhonghua LIU Weixin SU Dianqiang LI Jingkuan ZHAO Yanting

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

- 084201 A method of monitoring image shift based on global fitting Doppler heterodyne interferometer
WEN Zhenqing LI Juan HAO Xiongbo CHANG Chenguang LI Hongbo ZUO Haopu FU Di FENG Yutao
- 084202 Convolutional network single-pixel imaging with fusion attention mechanism
WANG Xiang ZHOU Yishen ZHANG Xuange CHEN Xihao
- 084203 Fast generation algorithm of high-quality holograms based on attention convolutional neural network
SUN Kangsheng HAN Chao QIN Haifeng GU Tao LI Wei YU Cheng
- 084204 Enhanced sensing of 3.4 GHz microwave in multi-level Rydberg atomic system
XUE Jingjing LI Ruonan HU Xuesong SUN Peisheng ZHOU Haitao ZHANG Junxiang
- 084205 Single-photon scattering under control of artificial gauge field
WANG Runtong WANG Xudong MEI Feng XIAO Liantuan JIA Suotang
- 084206 Sum sideband effect in hybrid optomechanical system with two-level atom ensemble
LIAO Qinghong TANG Zhian AO Jiawen
- 084401 Effect of ZrSiO_4 on far-infrared radiation characteristics of $\text{Pb}_3\text{O}_4/\text{Mg}/\text{PTFE}$ infrared decoy
WANG Bing CHEN Zongsheng SHI Jiaming XU Hexiong

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

- 085201 Diagnosis of number density of negative deuterium ions excited by electron cyclotron resonance by optical emission spectroscopy
CHEN Yue ZHU Xiaodong

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

- 086801 Thin film growth and electronic transmission of picene molecules on $\text{Cd}(0001)$ surface
YU Tao FU Shirun LU Hongping WANG Junzhong

(Continued)

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

- 087301 A novel LDMOS with dual-drift region and dual-conduction path with ultra-low specific on-resistance
DUAN Baoxing REN Yuhao TANG Chunping YANG Yintang
- 087501 Broadband nonreciprocal transmission tuned by pump-induced magnon modes
CHEN Zhijian ZHAO Kaixin WANG Chenxiao WEI Chunke YAO Bimu
- 087701 Aging characteristics and mechanism of high-dielectric aromatic polyureas considering trap evolutions
FENG Yang ZHANG Shuo ZHOU Bin LIU Peiyan YANG Xinru LI Shengtao
- 087801 A new magnetic phase transition above Morin temperature in DyFeO_3
SU Haobin ZHENG Shiyun WANG Ning ZHU Guofeng JU Xuwei HUANG Feng CAO Yiming WANG Xiangfeng

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 088101 High-temperature oxidation and crystallization mechanism of $\text{Fe}_{73.5}\text{Si}_{13.5}\text{B}_9\text{Cu}_1\text{Nb}_3$ amorphous alloy
ZHANG Xiang SONG Yingjie LIU Haishun XIONG Xiang YANG Weiming HAN Chenkang
- 088201 Effects of Al content on stability, electronic structure, and Li-ion diffusion properties of $\text{Li}_{1+x}\text{Al}_x\text{Ti}_{2-x}(\text{PO}_4)_3$ surface
LI Mei YAN Yi LAN Wenxin SUN Baozhen WU Musheng XU Bo OUYANG Chuying
- 088701 An algorithm of reconstructing phaseless radiation source based on singular value decomposition regularization and fast iterative shrinkage-thresholding algorithm
DENG Dianjun LI Yan
- 088702 Capture of Rayleigh particles by focused double-ring perfect vortex beams
SHI Pengbo YANG Chen YIN Xiaojin WANG Jie
- 088703 Laser trapping and manipulation of micro/nano-objects on polymer substrates
YIN Yue DOU Lin SHEN Tianci LIU Jiatong GU Fuxing

Color figures can be viewed in the online issue.



Online issue