Chinese Physics B

Volume 33 Number 10 October 2024

Contents

TOPICAL REVIEW — Optical field manipulation

104201 Light-field modulation and optimization near metal nanostructures utilizing spatial light modulators

Zini Cao, Hai Lin, Yuqing Cheng, Yixuan Xu, Qihuang Gong and Guowei Lü

SPECIAL TOPIC — Quantum computing and quantum sensing

100305 On-chip quantum NOON state sensing for temperature and humidity

Weihong Luo, Chao Wu, Yuxing Du, Chang Zhao, Miaomiao Yu, Pingyu Zhu, Kaikai Zhang and Ping Xu

100701 Vector magnetometry in zero bias magnetic field using nitrogen-vacancy ensembles Chunxing Li, Fa-Zhan Shi, Jingwei Zhou and Peng-Fei Wang

SPECIAL TOPIC — Recent progress on kagome metals and superconductors

- 107402 Magnetoresistance hysteresis in the superconducting state of kagome CsV_3Sb_5 Tian Le, Jinjin Liu, Zhiwei Wang and Xiao Lin
- 107403 Surface-sensitive electronic structure of kagome superconductor CsV₃Sb₅
 Zhisheng Zhao, Jianghao Yao, Rui Xu, Yuzhe Wang, Sen Liao, Zhengtai Liu, Dawei Shen, Shengtao
 Cui, Zhe Sun, Yilin Wang, Donglai Feng and Juan Jiang
- 107404 Pairing correlation of the kagome-lattice Hubbard model with the nearest-neighbor interaction

Chen Yang, Chao Chen, Runyu Ma, Ying Liang and Tianxing Ma

107507 Anomalous Hall effect and electronic correlation in a spin-reoriented kagome antiferromagnet $LuFe_6Sn_6$

Meng Lyu, Yang Liu, Shen Zhang, Junyan Liu, Jinying Yang, Yibo Wang, Yiting Feng, Xuebin Dong, Binbin Wang, Hongxiang Wei and Enke Liu

DATA PAPER

103102 Fully relativistic energies, transition properties, and lifetimes of lithium-like germanium Shuang Li, Jing Zhou, Liu-Hong Zhu, Xiu-Fei Mei and Jun Yan

(Continued on the Bookbinding Inside Back Cover)

COMPUTATIONAL PROGRAMS FOR PHYSICS

- 107106 Charge self-consistent dynamical mean field theory calculations in combination with linear combination of numerical atomic orbitals framework based density functional theory Xin Qu, Peng Xu, Zhiyong Liu, Jintao Wang, Fei Wang, Wei Huang, Zhongxin Li, Weichang Xu and Xinguo Ren
- 107508 MicroMagnetic.jl: A Julia package for micromagnetic and atomistic simulations with GPU support

Weiwei Wang, Boyao Lyu, Lingyao Kong, Hans Fangohr and Haifeng Du

RAPID COMMUNICATION

100202 Impact of asymptomatic infected individuals on epidemic transmission dynamics in multiplex networks with partial coupling

Xin Hu, Jiaxing Chen and Chengyi Xia

- 106102 Pressure-induced structural, electronic, and superconducting phase transitions in TaSe₃

 Yuhang Li, Pei Zhou, Chi Ding, Qing Lu, Xiaomeng Wang and Jian Sun
- 106801 Pit density reduction for AlN epilayers grown by molecular beam epitaxy using Al modulation method

Huan Liu, Peng-Fei Shao, Song-Lin Chen, Tao Tao, Yu Yan, Zi-Li Xie, Bin Liu, Dun-Jun Chen, Hai Lu, Rong Zhang and Ke Wang

- 107201 Regulating Anderson localization with structural defect disorder Mouyang Cheng, Haoxiang Chen and Ji Chen
- 107303 Role of self-assembled molecules' anchoring groups for surface defect passivation and dipole modulation in inverted perovskite solar cells
 - Xiaoyu Wang, Muhammad Faizan, Kun Zhou, Xinjiang Wang, Yuhao Fu and Lijun Zhang
- 107304 Hot carrier cooling in lead halide perovskites probed by two-pulse photovoltage correlation spectroscopy

Yuqing Huang, Chaoyu Guo, Lei Gao, Wenna Du, Haotian Zheng, Da Wu, Zhengpu Zhao, Chu-Wei Zhang, Qin Wang, Xin-Feng Liu, Qingfeng Yan and Ying Jiang

108104 Structural color of metallic glass through picosecond laser

Yue'e Zhang, Xing Tong, Yuqiang Yan, Shuo Cao, Hai-Bo Ke and Wei-Hua Wang

GENERAL

- 100201 On fractional discrete financial system: Bifurcation, chaos, and control Louiza Diabi, Adel Ouannas, Amel Hioual, Shaher Momani and Abderrahmane Abbes
- 100301 Single pair of charge-2 Dirac and charge-2 Weyl phonons in GeO_2 Dong-Chang He, Jia-Xi Liu, Pei-Tao Liu, Jiang-Xu Li and Xing-Qiu Chen

100302 Reference-frame-independent quantum key distribution with two-way classical communication

Chun Zhou, Hai-Tao Wang, Yi-Fei Lu, Xiao-Lei Jiang, Yan-Mei Zhao, Yu Zhou, Yang Wang, Jia-Ji Li, Yan-Yang Zhou, Xiang Wang, Hong-Wei Li and Wan-Su Bao

100303 Interference-induced suppression of particle emission from a Bose–Einstein condensate in lattice with time-periodic modulations

Long-Quan Lai and Zhao Li

100304 Bessel vortices in spin-1 Bose–Einstein condensates with Zeeman splitting and spin–orbit coupling

Huan-Bo Luo, Xin-Feng Zhang, Runhua Li, Yongyao Li and Bin Liu

100306 Freezing imaginarity of quantum states based on ℓ_1 -norm

Shuo Han, Bingke Zheng and Zhihua Guo

100501 Memristors-coupled neuron models with multiple firing patterns and homogeneous and heterogeneous multistability

Xuan Wang, Santo Banerjee, Yinghong Cao and Jun Mou

100502 Effective regulation of the interaction process among three optical solitons Houhui Yi, Xiaofeng Li, Junling Zhang, Xin Zhang and Guoli Ma

100503 Optimization performance of quantum endoreversible Otto machines with dual-squeezed reservoirs

Haoguang Liu

100504 Thermodynamics of charged AdS black hole surrounded by quintessence in restricted phase space

Siyu Jian, Siying Long, Juhua Chen and Yongjiu Wang

ATOMIC AND MOLECULAR PHYSICS

103101 Geometric properties of the first singlet S-wave excited state of two-electron atoms near the critical nuclear charge

Tong Chen, Sanjiang Yang, Wanping Zhou, Xuesong Mei and Haoxue Qiao

103301 Photoelectron momentum distributions of triatomic ${\rm CO_2}$ molecules by circularly polarized attosecond pulses

Si-Qi Zhang, Jun Zhang, Xin-Yu Hao, Jing Guo, Aihua Liu and Xue-Shen Liu

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

104202 Imaging through scattering layers using a near-infrared low-spatial-coherence fiber random laser

Anda Shi, Zeyu Wang, Chenxi Duan, Zhao Wang and Weili Zhang

104203 Reconstruction algorithm for cross-waveband optical computing imaging

Jin-Tao Xie, Shu-Hang Bie, Ming-Fei Li, Yuan-Jin Yu, Yi-Fei Li, Jin-Guang Wang, Bao-Gang Quan and Ling-An Wu

104204 Presentation of the Berry–Tabor conjecture in Lévy plates

Chao Li and Guo-Lin Hou

104205 Image encryption algorithm based on multiple chaotic systems and improved Joseph block scrambling

Dingkang Mou and Yumin Dong

104206 Statistical properties of ideal photons in a two-dimensional dye-filled spherical cap cavity Ze Cheng

104207 Third-order nonlinear wavelength conversion in chalcogenide glass waveguides towards mid-infrared photonics

Fengbo Han, Jiaxin Gu, Lu Huang, Hang Wang, Yali Huang, Xuecheng Zhou, Shaoliang Yu, Zhengqian Luo, Zhipeng Dong and Qingyang Du

104208 Broadband third-order optical nonlinearities of layered franckeite towards mid-infrared regime

Zhi-Qiang Xu, Tian-Tian Zhou, Jie Li, Dong-Yang Liu, Yuan He, Ning Li, Xiao Liu, Li-Li Miao, Chu-Jun Zhao and Shuang-Chun Wen

104209 Three-dimensional topological crystalline insulator without spin-orbit coupling in non-symmorphic photonic metacrystal

Zhide Yu and Lingbo Xia

104210 Ultra-broadband and wide-angle reflective terahertz polarization conversion metasurface based on topological optimization

Ya-Jie Zhang, Chao-Long Li, Jia-Qi Luan, Ming Zhao, Ding-Shan Gao and Pei-Li Li

104301 Inverse design of nonlinear phononic crystal configurations based on multi-label classification learning neural networks

Kunqi Huang, Yiran Lin, Yun Lai and Xiaozhou Liu

 ${\bf 104302} \quad {\bf Ultrasonic \ scalpel \ based \ on \ fusiform \ phononic \ crystal \ structure}$

Sha Wang, Junjie Shan and Shuyu Lin

104701 Casson hybrid nanofluid flow over a Riga plate for drug delivery applications with double diffusion

Abeer S. Alnahdi and Taza Gul

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

105201 Experimental studies of H_2/Ar plasma in a cylindrical inductive discharge with an expansion region

Shi-Bo Li, Si-Yu Xing, Fei Gao and You-Nian Wang

105202 Effect of matrix thermal properties on laser-induced plasma

Yuheng Shan, An Li, Xinyu Zhang, Wen Yi, Ying Zhang, Xiaodong Liu and Ruibin Liu

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

106101 Direct observation of shock-induced phase transformation in polycrystalline iron via in situ x-ray diffraction

Fan Zhang, Jia-Qin Dong, Zhi-Yong Xie, Zhi-Yu He, Hua Shu, Rui-Rong Wang, Jun Xiong, Guo Jia, Zhi-Heng Fang, Wei Wang, Da-Wu Xiao, An-Le Lei, Jie Chen and Xiu-Guang Huang

106501 Thermal conductivity of iron under the Earth's inner core pressure

Cui-E Hu, Mu-Xin Jiao, Xue-Nan Yang, Zhao-Yi Zeng and Jun Chen

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

107101 Optimized numerical density functional theory calculation of rotationally symmetric jellium model systems

Guangdi Zhang, Li Mao and Hongxing Xu

107102 The de Haas-van Alphen quantum oscillations in the kagome metal RbTi₃Bi₅

Zixian Dong, Lei Shi, Bin Wang, Mengwu Huo, Xing Huang, Chaoxin Huang, Peiyue Ma, Yunwei Zhang, Bing Shen and Meng Wang

107103 Phase induced localization transition

Tong Liu, Xingbo Wei and Youguo Wang

107104 Strain tunable excitonic optical properties in monolayer Ga₂O₃

Hao-Lei Cui, Zhen Quan and Shu-Dong Wang

107105 Excitonic optical properties in monolayer SnP₂S₆

Peng-Yuan Chen, Zhen Quan and Shu-Dong Wang

107301 Peak structure in the interlayer conductance of Moiré superlattices

Yizhou Tao, Chao Liu, Mingwen Xiao and Henan Fang

107302 Edge modes in finite-size systems with different edge terminals

Huiping Wang, Li Ren, Xiuli Zhang and Liguo Qin

107401 Prediction of novel layered indium halide superconductors

Zhi-Hong Yuan, Jing-Jing Meng, Rui Liu, Peng-Yu Zheng and Zhi-Ping Yin

107501 Spin-orbit torque effect in silicon-based sputtered Mn₃Sn film

Sha Lu, Dequan Meng, Adnan Khan, Ziao Wang, Shiwei Chen and Shiheng Liang

107502 Polarity-controllable magnetic skyrmion filter

Xiao-Lin Ai, Hui-Ting Li, Xue-Feng Zhang, Chang-Feng Li, Je-Ho Shim, Xiao-Ping Ma and Hong-Guang Piao

107503 Enhanced soft magnetic properties of SiO_2 -coated FeSiCr magnetic powder cores by particle size effect

Mingyue Ge, Likang Xiao, Xiaoru Liu, Lin Pan, Zhangyang Zhou, Jianghe Lan, Zhengwei Xiong, Jichuan Wu and Zhipeng Gao

- 107504 Skyrmion motion induced by spin-waves on magnetic nanotubes
 - Tijjani Abdulrazak, Xuejuan Liu, Zhenyu Wang, Yunshan Cao and Peng Yan
- 107505 Low Gilbert damping in Bi/In-doped YIG thin films with giant Faraday effect
 Jin Zhan, Yi Wang, Xianjie Wang, Hanxu Zhang, Senyin Zhu, Lingli Zhang, Lingling Tao, Yu Sui,
 Wenqing He, Caihua Wan, Xiufeng Han, V. I. Belotelov and Bo Song
- 107506 Impact of Co^{2+} substitution on structure and magnetic properties of M-type strontium ferrite with different Fe/Sr ratios

Yang Sun, Ruoshui Liu, Huayang Gong and Baogen Shen

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 108101 The B-site ordering in $RFe_{0.5}Cr_{0.5}O_3$ ceramics and its effect on magnetic properties Li Hou, Lei Shi, Liping Yang, Yiqiang Liu, Zhitao Li and Lanxiang Meng
- 108102 Exploring negative ion behaviors and their influence on properties of DC magnetron sputtered ITO films under varied power and pressure conditions

 Maoyang Li, Chaochao Mo, Peiyu Ji, Xiaoman Zhang, Jiali Chen, Lanjian Zhuge, Xuemei Wu, Haiyun Tan and Tianyuan Huang
- 108103 Recension of boron nitride phase diagram based on high-pressure and high-temperature experiments

Ruike Zhang, Ruiang Guo, Qian Li, Shuaiqi Li, Haidong Long and Duanwei He

108401 Study of leakage current degradation based on stacking faults expansion in irradiated SiC junction barrier Schottky diodes

Maojiu Luo, Yourun Zhang, Yucheng Wang, Hang Chen, Rong Zhou, Zhi Wang, Chao Lu and Bo Zhang

108701 Membrane tension evolution and mechanical regulation of melittin-induced membrane poration

Wanting Zhang, Rong Xu, Wendong Ma, Zhao Lin, Kai Yang and Bing Yuan