

ACTA PHYSICA SINICA

Vol. 68, No. 7, April 2019

CONTENTS

REVIEW

- 078501 **Ultra-wide bandgap semiconductor of β -Ga₂O₃ and its research progress of deep ultraviolet transparent electrode and solar-blind photodetector**

Guo Dao-You Li Pei-Gang Chen Zheng-Wei Wu Zhen-Ping Tang Wei-Hua

GENERAL

- 070201 **Critical breakdown path under low-pressure and slightly uneven electric field gap**
Yu Bo Liang Wei Jiao Jiao Kang Xiao-Lu Zhao Qing
- 070301 **Quantum broadcasting multiple blind signature protocol based on three-particle partial entanglement**
Zhang Wei Han Zheng-Fu
- 070302 **Preparation methods and progress of experiments of quantum microwave**
Miao Qiang Li Xiang Wu De-Wei Luo Jun-Wen Wei Tian-Li Zhu Hao-Nan
- 070601 **Influence of single-beam expanding scanning laser circumferential detection system parameters on detection capability**
Zha Bing-Ting Yuan Hai-Lu Ma Shao-Jie Chen Guang-Song
- 070602 **Measurement of femtosecond pulses based on transient grating frequency-resolved optical gating**
Huang Hang-Dong Teng Hao Zhan Min-Jie Xu Si-Yuan Huang Pei Zhu Jiang-Feng Wei Zhi-Yi
- 070701 **Crystallization characteristics of zinc oxide under electric field and Raman spectrum analysis of polarized products**
Li Yan Zhang Lin-Bin Li Jiao Lian Xiao-Xue Zhu Jun-Wu
- 070702 **Shot noise measurement for tunnel junctions using a homemade cryogenic amplifier at dilution refrigerator temperatures**
Song Zhi-Jun Lü Zhao-Zheng Dong Quan Feng Jun-Ya Ji Zhong-Qing Jin Yong Lü Li
- 070703 **Photo-acoustic technology applied to ppb level NO₂ detection by using low power blue diode laser**
Jin Hua-Wei Hu Ren-Zhi Xie Pin-Hua Chen Hao Li Zhi-Yan Wang Feng-Yang Wang Yi-Hui Lin Chuan

ATOMIC AND MOLECULAR PHYSICS

- 073201 **Measurement of quantum defect of cesium $nP_{3/2}$ ($n = 70-94$) Rydberg states by using ultraviolet single-photon Rydberg excitation**
Liu Shuo Bai Jian-Dong Wang Jie-Ying He Jun Wang Jun-Min

(Continued)

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

- 074201 **Synthesis of ununiformly correlated radially polarized partially coherent beam**
Liu Sen-Sen Song Hua-Dong Lin Wei-Qiang Chen Xu-Dong Pu Ji-Xiong
- 074202 **Numerical calculation and optimization of photoacoustic cell for photoacoustic spectrometer**
Cheng Gang Cao Yuan Liu Kun Cao Ya-Nan Chen Jia-Jin Gao Xiao-Ming
- 074203 **Performance optimization of three down-sampling imaging strategies and their comparison with the conventional Fourier telescope**
Dong Lei Lu Zhen-Wu Liu Xin-Yue Li Zheng-Wei
- 074204 **Characteristics and control of fiber ring resonator**
Song Li-Jun Zhang Peng-Fei Wang Xin Wang Chen-Xi Li Gang Zhang Tian-Cai
- 074205 **An accurate inversion method of aerosol extinction coefficient about ground-based lidar without needing calibration**
Liu Hou-Tong Mao Min-Juan
- 074301 **Restraining effect of resonant propagation of acoustic waves in liquids with mixed bubbles**
Chen Shi Zhang Di Wang Cheng-Hui Zhang Yin-Hong
- 074701 **Rayleigh-Bénard-Marangoni convection characteristics during mass transfer between liquid layers**
Chen Jun Shen Chao-Qun Wang He Zhang Cheng-Bin
- 074702 **Influence of sinusoidal riblets on the coherent structures in turbulent boundary layer studied by time-resolved particle image velocimetry**
Li Shan Jiang Nan Yang Shao-Qiong

PHYSICS OF GASES, PLASMAS, AND ELECTRIC DISCHARGES

- 075201 **Low-coherence laser based lens array beam smoothing technique**
*Gao Yan-Qi Zhao Xiao-Hui Jia Guo Li Fu-Jian Cui Yong Rao Da-Xing Ji Lai-Lin
Liu Dong Feng Wei Huang Xiu-Guang Ma Wei-Xin Sui Zhan*

CONDENSED MATTER: STRUCTURAL, MECHANICAL, AND THERMAL PROPERTIES

- 076201 **Observation of ejecta tin particles into polymer foam through high-energy X-ray radiography using high-intensity short-pulse laser**
*Shui Min Yu Ming-Hai Chu Gen-Bai Xi Tao Fan Wei Zhao Yong-Qiang
Xin Jian-Ting He Wei-Hua Gu Yu-Qiu*
- 076401 **Identification and tracking of different types of crystalline nucleiduring isothermal crystallization of amorphous Ag**
Li Yuan Peng Ping

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

- 077101 **First-principles calculations of solute-segregation of W-In alloys at grain boundaries**
Wang Qi Tang Fa-Wei Hou Chao Lü Hao Song Xiao-Yan

(Continued)

- 077102 **First-principles study of structural, elastic, thermodynamic, electronic and optical properties of cubic boron nitride and hexagonal boron nitride at high temperature and high pressure**
Lü Chang-Wei Wang Chen-Ju Gu Jian-Bing
- 077201 **Effects of Se substitution for Te on electrical and thermal transport properties of BiCuTeO**
Huang Ping You Li Liang Xing Zhang Ji-Ye Luo Jun
- 077801 **Role of optical angular momentum in enhanced transmission process of plasmonic coaxial nanoring aperture**
Wang Shuai Deng Zi-Lan Wang Fa-Qiang Wang Xiao-Lei Li Xiang-Ping

INTERDISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY

- 078101 **Formation of step bunching on 4H-SiC (0001) surfaces based on kinetic Monte Carlo method**
Li Yuan Shi Ai-Hong Chen Guo-Yu Gu Bing-Dong
- 078701 **Neural firing rate homeostasis via inhibitory synaptic plasticity**
Xue Xiao-Dan Wang Mei-Li Shao Yu-Zhu Wang Jun-Song
- 078801 **Optimization of grain size to achieve high-performance perovskite solar cells in vapor deposition**
*Wu Bu-Jun Lin Dong-Xu Li Zheng Cheng Zhen-Ping Li Xin Chen Ke Shi Ting-Ting
Xie Wei-Guang Liu Peng-Yi*
- 078901 **Modeling information popularity dynamics based on branching process**
Wu Lian-Ren Li Jin-Jie Qi Jia-Yin
- 078902 **Percolation of interdependent networks with conditional dependency clusters**
Han Wei-tao Yi Peng

Color figures can be viewed in the online issue.



Online issue