

2011 年度发表论文

1. Cong Wang, **Xian-Tu He**, and Ping Zhang, Ab Initio Simulation of Dense Helium Plasmas, *Physical Review Letter*. 106. 145002. (2011).
2. Ee Han, Jiequan Li, and **Huangzhong Tang**, Accuracy of the adaptive GRP scheme and the simulation of 2-D Riemann problems for compressible Euler equations, *Communications in Computational Physics* . 10 (2011). 577-606.
3. Zhicheng Yang, Peng He, and **Huanzhong Tang**, A direct Eulerian GRP scheme for relativistic hydrodynamics: One-dimensional case, *Journal of Computational Physics* 230, (2011)7964-7987
4. Dafang Li, Ping Zhang, and **Jun Yan**, Quantum molecular dynamics simulations for the nonmetal-metal transition in shocked methane, *Physical Review B* 84, 184204(2011)
5. Bao Lihua, Wu Zeqing, Duan Bin, Ding Yongkun, and **Yan Jun**, Simulations of the spectrum from a photoionized Si plasma, *Physics of Plasmas* 18, 023301 (2011).
6. D. F. Li, P. Zhang, **J. Yan** and H. Y. Liu, Melting curve of lithium from quantum molecular-dynamics simulations, *European Physics Letters* 95, 56004(2011).
7. 曾思良, 倪飞飞, 何建锋, 邹士阳, 颜君, 强磁场中氢原子的能级结构, *物理学报* Vol.60, No.04 (2011) 043201
8. **Xiaojian Shu**, Tangchao Peng, Yuhuan Dou, Chirped pulse amplification in a free-electron laser amplifier, *Journal of Electron Spectroscopy and Related Phenomena* 184 (2011) 350–353
9. **Qing-Dong Cai**, Lattice Boltzmann simulation of flows in bifurcate channel at rotating inflow boundary conditions and resulted different outflow fluxes, *Acta Mechanica Sinica* (2011) 27(4): 510-518.
10. **Qing-Dong Cai**, Shiyi Chen, A memory-Saving Algorithm for Spectral Method of Three-Dimensional Homogeneous Isotropic Turbulence, *Communications in Computational Physics*, 9(5): 1152-1164, 2011
11. **Cai Qing-Dong** , Chen Shi-Yi, Sheng Xiaowei, Numerical simulation of two-dimensional granular shearing flows and the friction force of a moving slab on the granular media. *Chinese Physics B*, Vol. 20, No. 2 (2011) 204502.
12. **Lihua Cao**, Mo Chen, Zongqing Zhao, Hongbo Cai, Sizhong Wu, Yuqiu Gu, Wei Yu, M. Y. Yu, and X. T. He, Efficient laser absorption and enhanced electron yield in the laser-target interaction by using a cone-nanolayer target, *Physics Plasmas* 18, 054501 (2011).

13. Jinping Yao, Ya Cheng, **Jing Chen**, Haisu Zhang, Han Xu, Hui Xiong, Bin Zeng, Wei Chu, Jielei Ni, Xiaojun Liu, and Zhizhan Xu, Generation of narrow-bandwidth, tunable, coherent xuv radiation using high-order harmonic generation, *Physical Review A* 83, 033835 (2011).
14. Xiaolei Hao, Weidong Li, Jie Liu, and **Jing Chen**, Effect of the electron initial longitudinal velocity on the nonsequential double-ionization process, *Physical Review A* 83, 053422 (2011).
15. **Xiaowei Li**, Qian Wang, and Puru Jena, Ferromagnetism in Two-Dimensional Carbon Chains Linked by 1,3,5-Benzenetriyl Units, *The Journal of Physical Chemistry C*, (2011)115: 19621-19625
16. **Xianwei Li**, and Qian Wang, Tunable ferromagnetism in assembled two dimensional triangular graphene nanoflakes, *Physical Chemistry Chemical Physics*, 2011:1-5
17. W. H. Ye, **L. F. Wang**, Competitions between Rayleigh–Taylor instability and Kelvin–Helmholtz instability with continuous density and velocity profiles, *Physics of Plasmas* 18, 022704 (2011)
18. B. L. Yang, **L.F. Wang**, W. H. Ye, C. Xue, Magnetic field gradient effects on Rayleigh-Taylor instability with continuous magnetic field and density profiles. *Physics Plasmas* 18, 072111 (2011)
19. Zhengfeng Fan, Chuang Xue, **Lifeng Wang**, Wenhua Ye, and Shaoping Zhu, Influence of real gas effects on ablative Rayleigh-Taylor instability in plastic target, *Physics of Plasmas* 18, 062108(2011)
20. **Qiong-Lin Ni**, Xiao-Gang Zhang, and Tie-Shuan Fan, A full-f calculation of spontaneous toroidal rotation in H-mode plasmas, *Plasma Physics and Controlled Fusion* 53 (2011)085027
21. Ingo Hofmann, Jürgen Meyer-ter-Vehn, **Xueqing Yan**, Anna Orzhekhevskaya, and Stepan Yaramyshev, Collection and focusing of laser accelerated ion beams for therapy applications, *Physical Review Specila Topics-Accelerators and Beams*, 14, 031304 (2011)
22. F. L. Zheng, S. Z. Wu, C. T. Zhou, H. Y. Wang, **X. Q. Yan** and X. T. He, An ultra-short and TeV quasi-monoenergetic ion beam generation by laser wakefield accelerator in the snowplow regime, *European Physics Letters*, 95 (2011) 55005
23. H. Y. Wang, C. Lin, F. L. Zheng, Y. R. Lu, Z. Y. Guo, X. T. He, J. E. Chen and **X. Q. Yan**, High-quality proton bunch from laser interaction with a gas-filled cone target , *Physics of Plasmas* 18, 093105 (2011).
24. H. Y. Wang, C. Lin, Z. M. Sheng, B. Liu, S. Zhao, Z. Y. Guo, Y. R. Lu, X. T. He, J. E. Chen and **X. Q. Yan**, Laser Shaping of a Relativistic Intense, Short Gaussian Pulse by a Plasma Lens, *Physical Review Letters*, 107,265002(2011)

25. **Tiao Lu**, Gang Du, Xiaoyan Liu, Pingwen Zhang, A finite volume method for the multi subband Boltzmann equation with realistic 2D scattering in DG MOSFETs, Communications in Computational Physics, Vol. 10, pp. 305-338, 2011.
26. Jian Zhou, and **Qiang Sun**, Magnetism of phthalocyanine-based organometallic single porous sheet, Journal of the American Chemical Society, 2011, 133, 15113 .
27. Kun Lv, Jian Zhou, Le Zhou, Qian Wang, **Qiang Sun**, Puru Jena, Sc-phthalocyanine sheet: Promising material for hydrogen storage, Applied Physics Letters, 99, 163104 (2011).
28. J. Zhou, **Q. Wang**, Q. Sun, and P. Jena, Stability and electronic structure of bilayer graphene, Applied Physics Letters 98, 063108(2011).
29. Jian Zhou, Kun Lv, Qian Wang, X. S. Chen, Qiang Sun, and Puru Jena, Electronic structures and bonding of graphyne sheet and its BN analog, The Journal of Chemical Physics 134, 174701 (2011).
30. Mian Mian Wu, **Qian Wang**, Qiang Sun, and Puru Jena, Reaction-Induced Magnetic Transition in Mn₂ Dimers, The Journal of Physical Chemistry A , 2011, 115, 549-555
31. Jian Zhou, **Qian Wang**, Qiang Sun, and Puru Jena, Enhanced Hydrogen Storage on Li Functionalized BC₃ Nanotube, The journal of Physical Chemistry C, 2011, 115: 6136-6140.
32. M. M. Wu, X. Zhong, **Q. Wang**, Q. Sun, R. Pandey, and P. Jena, Anisotropy and Transport Properties of Tubular C-BN Janus Nanostructures, The Journal of Physical Chemistry C, 2011.
33. Hong Min Zhao MiaoMiaoWu, **QianWang**, and Puru Jena, Effects of charging and doping on orbital hybridizations and distributionsin TiO₂ clusters, Physica B 406 (2011) 4322–4326
34. M. Kan, J. Zhou, **Qian Wang**, Q. Sun, and Puru Jena , Tuning the band gap and magnetic properties of BN sheets impregnated with graphene flakes, Physical Review B 84, 205412(2011)
35. Jian Zhou, **Qian Wang**, Qiang Sun, and Puru Jena, Intrinsic ferromagnetism in two-dimensional carbon structures: Triangular graphene nanoflakes linked by carbon chains
Physical Review B 84, 081402 (2011)
36. **F. X. Li**, and X. L. Zhou, Simulations of gradual domain-switching in polycrystalline ferroelectrics using an optimization-based, multidomain-grain model, Computers and Structures 89 (2011) 1142-1147.
37. X. L. Zhou, and **F. X. Li**, Simulations of domain evolution in morphotropic ferroelectric ceramics under electromechanical loading using an optimization-based model, Journal of Applied Physics 109, 084107 (2011)

38. **Hong-bo Cai**, Shao-ping Zhu, X. T. He, Si-zhong Wu, Mo Chen, Magnetic collimation of fast electrons in specially engineered targets irradiated by ultraintense laser pulses, *Physics of Plasmas* 18, 023106 (2011).
39. **Hong-bo Cai**, Shao-ping Zhu, Mo Chen, Si-zhong Wu, X. T. He, and Kunioki Mima, Magnetic-field generation and electron-collimation analysis for propagating fast electron beams in overdense plasmas, *Physical Review E* 83, 036408 (2011).
40. Z. J. Liu, **C. Y. Zheng**, X. T. He, and Yugang Wang, “Stimulated backward Brillouin scattering in two ion species plasmas”, *Phys. Plasmas*, 18, 032705,(2011)].
41. Xiang Jiang, LIU Zhanjun, **ZHENG Chunyang**, Effects of Electron-Ion Collisions on Stimulated Raman Backward Scattering Under Different Electron Densities, *Plasma Science and Technology* , 18,032705(2011)
42. **Yang, Y.T.** and Wu, J.Z., 2011, Channel turbulence with spanwise rotation studied using helical wave decomposition. *Journal of Fluid Mechanics*, in press.
43. **C. T. Zhou**, X.T. He, and L.Y. Chew, Intense short-pulse lasers irradiating wire and hollow plasma fibers, *Optics Letters*, Vol. 36, No. 6, 2011.
44. **C. T. Zhou**, T. X. Cai, W. Y. Zhang, X. T. He, Effect of plasma material on intense laser-driven beam electrons in solid foils, *Laser and Particle Beams*, 2011,0263-0346/11
45. Tengfei Yang, Yuan Gao , Xuejun Huang, Yanwen Zhang , Marcel Toulemonde , **Jianming Xue**, Sha Yan , Yugang Wang, The transformation balance between two types of structural defects in silica glass in ion-irradiation processes, *Journal of Non-Crystalline Solids*, 357 (2011) 3245-3250.
46. Yuan Gao, Tengfei Yang a, **Jianming Xue**, Sha Yan, Shengqiang Zhou, Yugang Wang, Dixon T.K. Kwok, Paul K. Chu, Yanwen Zhang. Radiation tolerance of Cu/W multilayered nanocomposites, *Journal of Nuclear Materials*, 413 (2011)11-15
47. Lin Wang, Yu Yan, Yanbo Xie, Long Chen, **Jianming Xue**, Sha Yan, and Yugang Wang. A method to tune the ionic current rectification of track-etched nanopores by using surfactant. *Physical Chemistry Chemical Physics*, 2011,13 576-581.
48. Lin Wang, Lixin Sun, Ceming Wang, Long Chen, Liuxuan Cao, Guoqing Hu, **Jianming Xue**, and Yugang Wang, Nanofluidic Pulser Based on Polymer Conical Nanopores, *Journal of Physical Chemistry C*, 2011
49. Zhenning Cai, **Ruo Li**, Yanli Wang, An Efficient NR_{xx} Method for Boltzmann-BGK Equation, *Journal of Scientific Computing*, 2011. DOI:10.1007/s10915-011-9475-5.

50. CHEN Qian-Yi, **LIU Kai-Xin**, A Void Growth Model Considering the Bauschinger Effect and Its Application to Spall Fracture, Chinese Physics Letters, 28-6(2011) 064602.
51. W. D. Liu, L. M. Ye, **K. X. Liu**, 2011, Micro-nano scale ripples on metallic glass induced by laser pulse, Journal of Applied Physics, 109, 043109 (2011).
52. W. D. Liu, **K. X. Liu**, Dynamic behavior of a Zr-based metallic glass at cryogenic temperature, Intermetallics, Intermetallics 19 (2011) 109-112.
53. SHEN Hua, **LIU Kai-Xin**, ZHANG De-Liang, Three-dimensional simulation of detonation propagation in a rectangular duct by an improved CE/SE scheme, Chinese Physics Letters, 28-12, 2011, 124705.
54. Gang Pang, and **Shaoqiang Tang**, Time history kernel functions for square lattice, Computational Mechanics 48(6):699-711 (2011).
55. Sheng-Chang Li, **Li-Bin Fu**, Quantum phase transition from mixed atom-molecule phase to pure molecule phase: Characteristic scaling laws and Berry-curvature signature, Phys. Rev. A, 84, 023605 (2011)
56. Meng Shao-Ying, Wu Wei, Chen Xi-Hao, and **Fu Li-Bin**, Dynamical instability of the dark state in the conversion of Bose-Fermi mixtures into stable molecules, Chinese Physics B Vol. 20, No. 8 (2011) 080309.
57. Xin Jiang, **Li-Bin Fu**, Wen-shan Duan, and Jie Liu, Phase transition of the ground state for two-component Bose-Einstein condensates in a triple-well trap, Journal of Physics B , 44 (2011) 115301
58. S. C. Li, **J. Liu**, and L.B. Fu, Berry phase and Hannay angle of an interacting boson system, Li Sheng-Chang, Physical Review A 83, 042107 (2011).
59. Li-Da Zhang, and **Li-Bin Fu**, Mean-field Berry phase of an interacting spin-1/2 system, European Physics Letters, 2011, 93, 3, 30001.
60. XiaoLei Hao, WeiDong Li, **Jie Liu**, J. Chen, Effect of the electron initial longitudinal velocity on the nonsequential double-ionization process, Chen Jin, Physical Review A 83, 053422(2011).
61. Li Chen Zhao, Zhan-Ying Yang, Li-Ming Ling, **Jie Liu**, Precisely controllable bright nonautonomous solitons in Bose-Einstein condensate, Physics Letters A 375 (2011) 1839-1842.
62. Sheng-Chang Li, **Li-Bin Fu**, and Jie Liu, Adiabatic geometric phase for a Bose-Einstein condensate coupled to a cavity, Physical Review A 84,053610 (2011).
63. W. N. Li, **H. L. Duan**, K. Albe, J. Weissmüller, Line stress of step edges at crystal surfaces, Surface Science 605 (2011) 947-957.
64. SUN Tao, WANG Ming-Qing, SUN Yong-Jian, WANG Bo-Ping, ZHANG

Guo-Yi, TONG Yu-Zhen, DUAN Hui-Ling, Deflection Reduction of GaN Wafer Bowing by Coating or Cutting Grooves in the Substrates, Chinese Physics Letters. Vol. 28, No. 4 (2011) 047303.

65. Bao-Tian Wang, Peng Zhang, Han-Yu Liu, Wei-Dong Li, and **Ping Zhang**, First-principles calculations of phase transition, elastic modulus, and superconductivity under pressure for zirconium, Journal of Applied Physics 109, 063514 (2011).
66. Yujuan Zhang, Cong Wang, Dafang Li, and **Ping Zhang**, Quantum molecular dynamic simulations of warm dense carbon monoxide, Journal of Chemical Physics 135, 064501(2011).
67. Yu Yang, and **Ping Zhang**, Dissociation of O₂ Molecules on Strained Pb(111) Surfaces, Journal of Physical Chemistry C, 2011,115, 17378-17383
68. Yong Lu, Da-Fang Li, Bao-Tian Wang, Rong-Wu Li, **Ping Zhang**, Electronic structures, mechanical and thermodynamic properties of ThN from first-principles calculations, Journal of Nuclear Materials 408 (2011) 136-141.
69. Yong Lu, Bao-Tian Wang, Rong-Wu Li, Hong-Liang Shi, **Ping Zhang**, Structural, electronic, mechanical, and thermodynamic properties of UN₂: Systematic density functional calculations, Journal of Nuclear Material 410 (2011) 46-51.
70. Peng Zhang, Yong Lu, Chao-Hui He, **Ping Zhang**, First-principles study of the incorporation and diffusion of helium in cubic zirconia, Journal of Nuclear Material 418 (2011) 143-151.
71. Cong Wang, Xian-Tu He, and **Ping Zhang**, Thermophysical properties for shock compressed polystyrene, Physics of Plasmas 18, 082707 (2011).
72. Ningning Hao, **Ping Zhang**, and Yupeng Wang, Topological phases and fractional excitations of the exciton condensate in a special class of bilayer systems, Physical Review B 84, 155447 (2011).
73. Yangfang Li, Yu Yang, Bo Sun, Yinghui Wei, **Ping Zhang**, Dissociation of hydrogen molecules on the clean and hydrogen-preadsorbed Be(0001) surface, Physics Letters A 375 (2011) 2430-2436
74. Jianchun Wang, Yipeng Shi, Lian-Ping Wang,, Zuoli Xiao, Xiantu He, and **Shiyi Chen**, Effect of shocklets on the velocity gradients in highly compressible isotropic turbulence, Physics of Fluids 23, 125103 (2011)