Yong Wu
CURRICULUM VITAE

Yong Wu

Professor of Physics and group leader of the Atomic and Molecular physics in Institute of Applied Physics and Computational Mathematic (IAPCM), China;
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Education

Ph. D. in Atomic and Molecular Physics, June 2005, Jilin University, Changchun, China
B.S. in Theoretical Physics, July 2000, Jilin University, Changchun, China

PROFESSIONAL EXPERIENCE

2019— present: Full Professor and Group leader, IAPCM, Beijing, China
2017— present: adjunct professor, CAPT, Peking University, China
2017— present: Head of CRAAMD
2012—2018: Associated Professor and Group leader, IAPCM, Beijing, China
2010 —2011: Postdoctoral Fellow, University of Georgia, GA, USA
2007—2009: Associated Professor, IAPCM, Beijing, China
2005—2006: Postdoctoral Fellow, IAPCM, Beijing, China

Research interest

Ion-Atom and Ion-Molecule Collisions
Electron-Atom and Electron-Molecule Collisions
Molecular Ultrafast Dissociation Processes
Atomic and Molecular Database Development and Application

Grants Support

1. Principal Investigator (PI), Data for Atomic Processes Related to Neutral Beams in Fusion Plasma, (2017.3～2021.3), Coordinated Research Activities program, IAEA (Grant No. 21123/R0).
2. Principal Investigator (PI), Theoretical investigation of Solar Wind ions colliding with neutral atoms/molecules in astrophysical environment (2015.1～2018.12), NSFC (Grant No. 11474032).
3. Co-PI, Many-particle Dynamics of ionization and dissociation of molecular by electron collisions (2016.1～2020.12), NSFC (Grant No. 11534011).
4. Co-PI, Precision Spectroscopy study for highly charged ions (2017.7～2022.06), The National Key Research and Development Program of China (Grant No. 2017YFA0402300)
5. Co-PI, The studies of Compressibility, opacity and transport coefficient for high temperature, high pressure and high density matters, (2017.7～2021.06), The National Key Research and Development Program of China (Grant No. 2017YFA0403200)

Recent Publications

1. J. W. Gao; **Y. Wu**; J. G. Wang; A. Dubois; N. Sisourat, Double Electron Capture in H^++H^- Collisions, **Phys. Rev. Lett**, 122, 093402(2019).

2. Laser-induced inelastic diffraction from strong-field double ionization, Wei Quan, XiaoLei Hao, XiaoQing Hu, RenPing Sun, YanLan Wang, YongJu Chen, ShaoGang Yu, SongPo Xu, ZhiLei Xiao, XuanYang Lai, XingYu Li, Wilhelm Becker, **Yong Wu***, JianGuo Wang, XiaoJun Liu†, Jing Chen&, **Phys. Rev. Letts** 119, 243203 (2017).

3. Lei Chen; Xu Shan*; Xi Zhao; Xiaolong Zhu; Xiaoqing Hu; **Yong Wu***; Wentian Feng; Dalong Guo; Ruitian Zhang; Yong Gao; Zhongkui Huang; Jianguo Wang; Xinwen Ma ; Xiangjun Chen*,Two-body fragmentation dynamics of N_2O^{q+} (q =2, 3) induced by electron-capture collisions with 5.7-keV/u Xe^{15+}, **Phys. Rev. A**, 99 012710(2019).

4. Xiaoqing Hu, Cong-Zhang Gao, Wen-Jie Ma, Jianguo Wang and **Yong Wu***, Polarization potential and its effects on (e, 2e) reactions at intermediate energy, **J. Phy. B**, 52 105202 (2019).

5. Xiaohe Lin, **Yong Wu***, J. G. Wang, Bin Shao and R. K. Janev, Electron capture in slow collisions of O^{6+} ions with atomic hydrogen, **A&A** 625, A29 (2019).

6. W. Yu, C.-Z. Gao*, T. Jiang, Y. Zou, J.-G. Wang, **Y. Wu***, and B. Wei*, A theoretical study of Ar^{8+}-acetylene collisions at 1.2 MeV: Ionization and dissociation dynamics , **J. Chem. Phys.** 150, 124304 (2019).

7. Xiao He Lin, Yi Geng Peng, **Yong Wu***, Song Bin Zhang, Bin Shao, Jian GuoWang, Ratko Janev, Theoretical study of resonances formed in low-energy Li^-+H collisions, **Chemical Physics** 522 10–14(2019)

8. Ju Yan Wu, **Yong Wu**, Yue Ying Qi, Jian Guo Wang, R. K. Janev and Song Bin Zhang Non-relativistic free–free Gaunt factors in Debye plasmas, **MNRAS** 486, 141–144 (2019)

9. Ju Yan Wu, **Yong Wu**, Yue Ying Qi, Jian Guo Wang, R. K. Janev, and Song Bin Zhang, Resonances in nonrelativistic free-free Gaunt factors with screened Coulomb interaction, **Phys. Rev. A** 99, 012705(2019)

10. Qing Bian, **Yong Wu**, Jian Guo Wang, and Song Bin Zhang, Bond-distance-dependent Auger decay of core-excited N2 using an ultrashort x-ray pump and continuous-wave IR-control scheme, **Phys. Rev. A** 99, 033404 (2019)

11. Yu kunYang, **Yong Wu**, Yizhi Qu, JianguoWang, R. K. Janev and Song Bin Zhang, Resonance studies using the contour deformation method in the complex momentum plane, **Physics Letters A** 383 (2019) 1929–1936

12. K Wang, Y Z Qu, C H Liu, L Liu , **Y Wu**, H-P Liebermann and R J Buenker, The influence of pseudo states on the single electron capture processes in low-energy collisions of N^{5+} with He, **J. Phys. B**: At. Mol. Opt. Phys. 52 075202 (2019)

13. State-selective electron transfer in He^++He collisions at intermediate energies, J. W. Gao, **Y. Wu**, J. G. Wang, N. Sisourat, and A. Dubois, **Phys. Rev. A** 97, 052709 (2018).

14. Comparative study of inelastic squared form factors of the vibronic states of $B^1\Sigma_u^+$, $C^1\Pi_u$, and $EF^1\Sigma_g^+$for molecular hydrogen: Inelastic x-ray and electron scattering, Long-Quan Xu, Xu Kang, Yi-Geng Peng, Xin Xu, Ya-Wei Liu, **Yong Wu***, Ke Yang, Nozomu Hiraoka, Ku-Ding Tsuei, Jian-Guo Wang, and Lin-Fan Zhu**, **Phys. Rev. A** 97, 032503 (2018).

15. "Molecular opacities of the transitions for the lowest four singlet states of BeH^+, Xue-song Xu, An-qi Dai, Yi-Geng Peng, **Yong Wu*** and J. G. Wang, **J. Quant. Spectrosc. Radiat. Transfer**, 206, 172-179 (2018)

16. Insights into reactive scattering of Pu + H_2 at low energies, Cong-Zhang Gao, **Yong Wu***, Ling Liu, Pei Wang and Jian-Guo Wang **, EUROPHYS LETT**, 119 (2017) 48007

17. Electron-impact ionization of Ne(2p) and Ar(3p) at intermediate energies: Role of the postcollision interaction , Xiaoqing Hu, Cong-Zhang Gao, Zhanbin Chen, Jianguo Wang, **Yong Wu*** and Yang Wang*, **Phys.**

Rev. A 96, 052701 (2017)

18. Single- and double-electron transfer in low- and intermediate-energy C^{4+}+He collisions，J. W. Gao, **Y. Wu**, N. Sisourat, J. G. Wang and A. Dubois, **Phys. Rev. A**96, 052703 2017

19. I. Rabadán, L. Méndez, J. W. Gao, **Y. Wu**, and J. G. Wang, Ab initio calculation of electron-capture cross sections in H^+ + BeH collisions, **Phys. Rev. A** 96, 032714 (2017)

20. Ling Liu, Xiaohe Lin, **Yong Wu***, Jian-Guo Wang, and Ratko K. Janev, Cross sections for state-selective electron capture and excitation in He^+–H collisions, **Eur. Phys. J. D** (2017) 71: 225,

21. Song Bin Zhang*, **Yong Wu****, and Jian Guo Wang, Time-dependent quantum wave packet dynamics to study charge transfer in heavy particle collisions, **J. Chem. Phys.** 145, 224306 (2016)

22.**Y. Wu**, X. H. Lin, B. Yan, J. G. Wang and R. K. Janev, "Theoretical investigation of electron transfer and detachment processes in low energy H^- + Li and- Li^- + H collisions " **J. Phy. B**, 49 035203 (2016)

23.Yi-Geng Peng, **Yong Wu***, Lin-Fan Zhu, SongBin Zhang, Jian-GuoWang, H.-P. Liebermann and R. J. Buenker, "Complex multireference configuration interaction calculations for the K-vacancy Auger states of N^{q+}(q=2-5) ions, **J. Chem. Phys.** 144, 054306 (2016)

24. Xuhai Hong, Feng Wang, **Yong Wu***, Bingcong Gou and Jianguo Wang, "H^+-H_2O collisions studied by time-dependent density-functional theory combined with the molecular dynamics method "，**Phys. Rev. A** 93, 062706 (2016)

25. **Yong Wu**, Predrag Krstic, Fu Yang Zhou and Fred Meyer, **J. Nuclear Materials** 467 (2015) 480-487

26. T. C. Li, Y. Z. Qu, **Y. Wu**, L. Liu, J. G. Wang, H.-P. Liebermann, and R. J. Buenker, **Phys. Rev. A** 91, 052702 (2015)

27. L L Yan, X Y Li, **Y Wu**, J G Wang and Y Z Qu, "Radiative association processes to specific rovibrational levels in low-energy Na^+-^{87}Rb collisions"，**Phys. Rev. A**, 90, 032714 (2014);

28. G. Y. Liang, F. Li, F. L. Wang, **Y. Wu**, J. Y. Zhong, and G. Zhao，X-Ray and EUV spectroscopy of various astrophysical and laboratory plasma: collisional, photoionization and charge-exchange plasma, **ApJ** 783 (2014) 124;

29. R. S. Cumbee, D. B. Henley, P. C. Stancil, R. L. Shelton, J. L. Nolte, **Y. Wu**, and D R. Schultz, "Can Charge Exchange Explain Anomalous Soft X-ray Emission in the Cygnus Loop" **ApJL** 787 L31 (2014)

30. L L Yan, **Y Wu**, Y Z Qu, J G Wang and R J Buenker, "Single- and double-electron capture processes in low-energy collisions of C^{4+} with He"，**Phys. Rev. A**, 88, 022706 (2013);

31. L L Yan, L. Liu, **Y. Wu**, Y. Z. Qu, J. G. Wang, and R. J. Buenker, "Charge transfer and association of Na^+ with ^{87}Rb atom from extreme-low to intermediate energies"，**Phys. Rev. A**, 88, 012709 (2013);

32. C L Zhang, H X Hong, F Wang, **Y Wu** and J G Wang, "Theoretical investigation of He^{2+}-Ar collisions in the energy rangeof 4 - 300keV/amu" Phys. Rev. A, **Phys. Rev. A**, 87, 032711 (2013)

33. R J Buenker, H Liebermann, Y Zhang, **Y Wu**, L Yan, C Liu, Y Qu and J G Wang, (2013), "Adjustment of born-oppenheimer electronic wave functions to simplify close coupling calculations"，**J. Comput. Chem.** doi: 10.1002/jcc.23215 (2013)

34. **Y. Wu**, P. C. Stancil, D. R. Schultz, Y. Hui, H. P. Liebermann, and R. J. Buenker, "Theoretical Investigation of Total and State-Dependent Charge Exchange in O^{6+} Ion Collisions with Atomic Hydrogen"，**J. Phys. B** 45, 235201 (2012)