

CURRICULUM VITAE

Xian-Tu He

Citizenship : Chinese

Address: Institute of Applied Physics and Computational Mathematics, 6# Huayuan Road, Haidian District, Beijing 100088, China.

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Education :

1957-1962 : Department of Physics at the Zhejiang University

1986-1987: Advanced study and visiting scientist at University of Maryland

Scientific career:

1962-1980: Assistant Researcher at the Institute of Applied Physics and Computational Mathematics (IAPCM).

1981-1988: Associate Research Professor

1988-present: Professor at IAPCM

1991-1997 : Deputy Director of IAPCM

1993-2001 : Chief Scientist in charge of National Inertial Confinement Fusion (ICF) Program

1996- : One of initiators, Asia Pacific Plasma Theory Conference (APPTC, series)

1997- : One of initiators, Asia Plasma and Fusion Association (APFA)

1999-present : IAC, International Conference on Inertial Fusion Science and Applications (IFSA, series)

2002- present : Senior Academic Advisor for National ICF Program (2002-present)

1995- present : Academician of Chinese Academy of Sciences (CAS)

1999- 2009 : Dean of the College of Science at Zhejiang University

2001- 2006 : Vice Director, Director of the Division of Mathematics and Physics of CAS and member of Presidium of Academic Divisions and an Executive Committee of CAS

2007- present : Director of Center for Applied Physics and Technology (CAPT) at Peking University

2007- present : President of the Chinese Computational Physics Association; the Editor-in-Chief of Communications of Computational Physics (CiCP)

2013- present : Associate Editor of Laser and Particle Beams

Current Research interest :

Pattern dynamics and spatiotemporal chaos in laser-plasma interaction

Charged particle acceleration in strong field generated by intense-laser plasma interaction;

Betatron radiation of relativistic electrons in the high electromagnetic fields generated by intense laser matter interaction;

Nonideal plasma (warm dense matter-WDM) physics;

Atomic ionizations under intense lasers;

ICF target physics (indirect-direct hybrid drive, indirect drive with high power pulse, fast ignition);

Hydrodynamics instabilities and compressible turbulence in implosion dynamics

Over 200 publications & over 60 plenary invited talks in international conferences

Selected 20 Papers:

1. C. T. Zhou, **X. T. He**, S. G. Chen, Basic dynamic properties of the high-order nonlinear Schrodinger equation, *Phys. Rev. A* 46, 2277(1992)
2. **X. T. He**, C. Y. Zheng, Spatiotemporal chaos in the regime of the conserved Zakharov equations, *Phys. Rev. Lett.* 74, 78(1995)
3. W. Y. Ye, W. Y. Zhang, **X. T. He**, Stabilization of ablative Rayleigh-Taylor instability due to change of the Atwood number, *Phys. Rev. E* 65, 057401 (2002)
4. H. Liu, **X. T. He**, S. G. Chen, Resonance acceleration of electrons in combined strong magnetic fields and intense laser fields, *Phys. Rev. E* 69, 066409 (2004)
5. C. Y. Zheng, **X. T. He**, S. P. Zhu, Magnetic field generation and relativistic electron dynamics in circularly polarized intense laser interaction with dense plasma, *Phys. Plasmas* 12, 044505(2005)
6. B. Qiao, S. P. Zhu, S. P. Zhu, C. Y. Zheng, **X. T. He**, Quasistatic magnetic and electric fields generated in intense laser plasma interaction, *Phys. Plasmas* 12, 053104(2005)
7. C. T. Zhou and **X.T.He**, Influence of a large oblique incident angle on energetic protons accelerated from solid-density plasmas by ultraintense laser pulses, *Appl. Phys. Lett.* 90, 031503(2007)
8. C. T. Zhou and **X. T. He**, Intense laser-driven energetic proton beams from solid density targets, *Optics Lett.* 32, 2444(2007).
9. C.T. Zhou, **X.T. He**, and M.Y.Yu, Intense-laser generated relativistic electron transport in coaxial two-layer targets, *Appl. Phys. Lett.* 92, 071502(2008)
10. C.T. Zhou, **X.T. He**, and M.Y.Yu, Laser-produced energetic electron transport in

- overdense plasmas by wire guiding, Appl. Phys. Lett. 92, 151502(2008)
11. L.F.Wang, W.H.Ye, Z.F.Fan, Y.J.Li, **X.T.He** and M.Y.Yu, Weakly nonlinear analysis on the Kelvin-Helmholtz instability, Europhys. Lett. 86, 15002(2009)
 12. Cong Wang, **X. T. He**, Ping Zhang, *Ab initio* simulations of dense Helium plasma, Phys. Rev. Lett. 106, 145002(2011)
 13. H.Y.Wang, C.Lin, ..., **X.T.He**, J.E.Chen, and X.Q.Yan, laser shaping of a relativistic intense, short Gaussian pulse by a plasma lens, Phys. Rev. Lett. 107, 265002(2011)
 14. W.H.Ye, **X.T.He**, W.Y.Zhang and M.Y.Yu, Effect of preheating on the nonlinear evolution of the ablative Rayleigh-Taylor instability, Europhys. Lett., 95, 35002(2011)
 15. 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, Europhys. Lett., 95, 55005(2011)
 16. F.L.Zheng, H.Y.Wang, ..., and **X.T.He**, Sub-TeV proton beam generation by ultra-intense laser irradiation of foil-and-gas target, Phys. Plasmas 19, 023111(2012)
 17. Hong Liu, ..., Jie Liu, **X.T.He**, ..., Low yield of near-zero-momentum electrons and partial atomic stabilization in strong-field tunneling ionization, Phys. Rev. Lett. 109, 093001(2012)
 18. Jianchun Wang, Yipeng Shi, ..., **X.T.He**, and Shiyi Chen, Scaling and statistics in three-dimensional compressible turbulence, Phys. Rev. Lett. 108, 214505(2012)
 19. B.Liu, ..., and **X.T.He**, Generating overcritical density relativistic electron beams via self-matching resonance acceleration, Phys. Rev. Lett. 110, 045002(2013).
 20. Yanto Yang, Jianchun Wang, Yipeng Shi, Zuoli Xiao, **X.T.He**, and Shiyi Chen, Acceleration passive tracers in compressible turbulence, Phys. Rev. Lett. 110, 064503(2013)