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EDUCATION

PhD: Physics, University of Illinois at Urbana-Champaign (UIUC), Aug, 2007
Advisor: Professor Klaus Schulten
MS: Finance, UIUC, May, 2007
MS: Physics, Tsinghua University (Beijing, China), January, 2001
Advisor: Professor Guozhen Wu 吴国祯
BS: Physics, Tsinghua University, 清华物理系 June, 1998

PROFESSIONAL EMPLOYMENT

Dec 2011 – present: Tenure-track Assistant Professor **特聘研究员**, Complex System Research Division, Beijing Computational Science Research Center, Chinese Academy of Engineering Physics **北京计算科学研究中心（中国工程物理研究院）**

Sept 2007 – Nov 2011: Postdoctoral Fellow with Oster Group in Molecular and Cellular Biology, and Bustamante Lab in Physics, University of California (UC), Berkeley.

Jan 2003 – Aug 2007: Research assistant in Theoretical and Computational Biophysics Group, Beckman Institute, UIUC

Aug 2001- Dec 2002: Teaching assistant in undergraduate Quantum Physics and graduate Quantum Mechanics, Department of Physics, UIUC

Aug 1998 – Jan 2001: Research assistant in Molecular and Nano Sciences Laboratory, Department of Physics, Tsinghua University, 清华物理系, China.

Funding Awards

National Natural Science Foundation of China (NSFC) 国家自然科学基金面上项目 PI Grant #11275022 (2013-2016); #11775016 (2018-2021)

2012-2015 1000-Talent Global Recruitment Program for Young Scholar 中组部国家青年千人计划

2007-2010 UC Berkeley Chancellor's Postdoctoral Fellowship, and Clare Boothe Luce Fellowship

PUBLICATIONS (* corresponding authorship)

27. Lin-Tai Da*, Yi Shi, Guodong Ning, and **Jin Yu***. Dynamics of the excised base release in thymine DNA glycosylase during DNA repair process. Nucleic Acids Research, 2017 *in press* DOI: 10.1093/nar/gkx1261

26. Liqiang Dai, Holger Flechsig, and **Jin Yu***. Deciphering intrinsic inter-subunit couplings that lead to sequential hydrolysis of F1-ATPase ring. Biophysical Journal 113 (7) 1440-1453, 2017

25. Lin-Tai Da[†]*, Chao E[†], Yao Shuai, Shaogui Wu, Xiao-Dong Su, and **Jin Yu***. T7 RNA Polymerase Translocation is Facilitated by Helix Opening on the Fingers Domain that may also Prevent Backtracking. Nucleic Acids Research 45(13) 7909-7921, 2017 [†]equal contribution

24. Chuanbiao Zhang, **Jin Yu**, and Xin Zhou*. Imaging Metastable States and Transitions in Proteins by Trajectory Map. The Journal of Physical Chemistry B, 121(18) 4678-4686, 2017

23. Chao E, Baogen Duan, and **Jin Yu***. Nucleotide Selectivity at a Preinsertion Checkpoint of T7 RNA Polymerase Transcription Elongation. The Journal of Physical Chemistry B, 121(15) 3777-3786, 2017

22. **Jin Yu***. Computational investigations on polymerase actions in gene transcription and replication: Combining physical modeling and atomistic simulations. Chinese Physics B, 25 (1) 018706, 2016

21. Lin-Tai Da, Chao E, Baogen Duan, Chuanbiao Zhang, Xin Zhou, **Jin Yu***. A jump-from-cavity pyrophosphate ion release assisted by a key lysine residue in T7 RNA polymerase transcription elongation. PLoS Computational Biology, 11 (11), e1004624, 2015

20. Jianhua Xing*, **Jin Yu**, Hang Zhang, Xiaojun Tian. Computational modeling to elucidate molecular mechanisms of epigenetic memory. Epigenetic Technological Applications In TRANSLATIONAL EPIGENETICS by Elsevier. Chapter 12, *245-264*, 2015

19. Bo Cheng, Shaogui Wu, Shixin Liu, Piere Rodriguez, **Jin Yu***, Shuxun Cui*. Protein denaturation at single-molecule level: the effect of nonpolar environments and its implications to the unfolding mechanism by proteases Nanoscale, 7, 2970, 2015

18. **Jin Yu***, Lin-Tai Da, Xuhui Huang*. Constructing kinetic models to elucidate structural dynamics of a complete RNA polymerase II elongation cycle. Physical Biology, 102, 016004, 2015

17. **Jin Yu***. Efficient fidelity control by stepwise nucleotide selection in polymerase elongation. Molecular Based Mathematical Biology, 2,141-160, 2014

16. Baogen Duan, Shaogui Wu, Lin-Tai Da, **Jin Yu***. A critical residue selectively recruits nucleotides for T7 RNA polymerase transcription fidelity control. Biophysical Journal, 107, 2130-2140, 2014

15. Jin Yu*. Coordination and control inside simple biomolecular machines. Advances in Experimental Medicine and Biology In Protein Conformation Dynamics by Springer 805, 2014, 353-384, Springer, 2014

14. **Jin Yu*,** George Oster*. A small post-translocation energy bias aids nucleotide translocation in T7 RNA polymerase transcription. Biophysical Journal, 102, 532-541, 2012.

13. **Jin Yu*,** Wei Cheng, Carlos Bustamante, and George Oster*. Coupling translocation with nucleic acid unwinding by NS3 helicase. Journal of Molecular Biology, 404:439-455, 2010.

12. Jeehae Park, Sua Myong, Anita Niedziela-Majka, Kyung Suk Lee, **Jin Yu**, Timothy M. Lohman, Taekjip Ha*. PcrA helicase dismantles RecA filaments by reeling in DNA in uniform steps. Cell, 142:544-555, 2010.

11. **Jin Yu**, Jeff Moffitt, Craig Hetherington, Carlos Bustamante, and George Oster*. Mechanochemistry of a viral DNA packaging motor. Journal of Molecular Biology, 400:186-203, 2010.

10. Shuxun Cui, **Jin Yu**, Ferdinand Kühner, Klaus Schulten, and Hermann E. Gaub*. Double stranded DNA dissociates into single strands when dragged into a poor solvent. Journal of the American Chemical Society, 129:14710-14716, 2007.

9. Sungchul Hohng, Ruobo Zhou, Michelle K. Nahas, **Jin Yu**, Klaus Schulten, David M. J. Lilley, and Taekjip Ha*. Mapping the two-dimensional reaction landscape of Holliday junction via dynamic fluorescence-force spectroscopy. Science, 318:279-283, 2007.

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7. Markus Dittrich, **Jin Yu**, and Klaus Schulten*. PcrA helicase, a molecular motor studied from the electronic to the function level. Atomistic Approaches in Modern Biology. Topics in Current Chemistry, 268: 319-347, Springer, 2006.

6. **Jin Yu**, Taekjip Ha, and Klaus Schulten*. Structure-based model of the stepping motor of PcrA helicase. Biophysical Journal, 91:2097-2114, 2006.

5. **Jin Yu**, Andrea J. Yool, Klaus Schulten, and Emad Tajkhorshid*. Mechanism of gating and ion conductivity of a possible tetrameric pore in Aquaporin-1. Structure, 14:1411-1423, 2006.

4. **Jin Yu**, Taekjip Ha, and Klaus Schulten*. Conformational model of the Holliday junction transition deduced from molecular dynamics simulations. Nucleic Acids Research, 32:6683-6695, 2004.

3. **Jin Yu** and Guozhen Wu*. The Lyapunov analysis of the highly excited bend motion of acetylene. Chemical Physics Letters, 343: 375-382, 2001.

2. **Jin Yu** and Guozhen Wu*. Classical characters of highly bend dynamics of acetylene in two coupled SU(2) coset spaces. Journal of Chemical Physics,113:647-652, 2000.

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