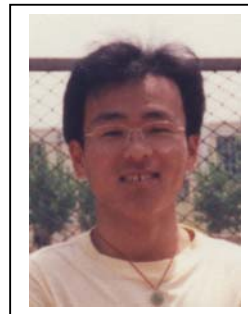


CURRICULUM VITAE

Personal information:

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Education:

B.Sc. in Physics, Dalian University of Technology, China, 2000
Ph.D. in Physical Chemistry, Dalian Institute of Chemical Physics CAS
2005 (with MCAS Lou Nan Quan).

Scientific Experience:

Visiting student with Prof. *Gunnar Nyman* (Chemical Physics) in Göteborg University, Sweden, 2002.11-2004.5

Research Fellow, with Prof. *Donghui Zhang* in National University of Singapore, Singapore, 2005.3-2006.7

Research Fellow, with Prof. *Soo-Ying Lee* in Nanyang Technological University, Singapore, 2006.8-2009.3

Honors and Awards:

1. Presidential Fellowship Award of the Chinese Academy of Sciences, 2004
2. Excellent Contribution Award of Dalian Institute of Chemical Physics, 2004
3. One of 50 Most Excellent Doctoral Theses of the Chinese Academy of Sciences, 2006
4. One of 100 Most Excellent Scientific Papers of China (Istic, 2007)

Publications List:

35. Usage of a Reactant Jacobi Coordinate in a Wavepacket Based Tri-atomic State-to-state Reactive Scattering Calculation (**in preparation**)
34. How long/many steps propagation required in a wavepacket state-to-state reactive scattering calculation involving resonances? **Zhigang Sun**, Soo-Y. Lee, D. H. Zhang, (**in preparation**)
33. $\text{NH}(X^3\Sigma)+\text{H}/\text{D}(^2S) \rightarrow \text{H}(^2S)+\text{NH}/\text{ND}(X^3\Sigma)$ Exchange Reaction: State-to-state Quantum Scattering and Applicability of Statistical Model, Zheng Li, Daiqian Xie, **Zhigang Sun**, D. H. Zhang, Shiyang Lin, Hua Guo, *J. Chem. Phys.* (**Submitted**)
32. Dominated non-Statistical Behaviors in $\text{O}+\text{O}_2$ Exchange Reactive Scattering: Quantum Resonances and Tunneling Effects, **Zhigang Sun**, Soo-Y. Lee, D. H. Zhang, (**Ready for submitting**)
31. A Nonadiabatic Time-dependent Wave Packet Investigation of the State-to-state Reactive Scattering of Cl with para- H_2 Including the Open-shell Character of $\text{Cl}(^2P)$ **Zhigang Sun**, Soo-Y. Lee, M. H. Alexander, D. H. Zhang, *J. Chem. Phys.* (**Submitted**)
30. Comparison of Second-order Split Operator and Chebyshev Propagator in Wave Packet Based State-to-state Reactive Scattering Calculations, **Zhigang Sun**, S.-Y. Lee, H. Guo, D. H. Zhang, *J. Chem. Phys.* **130** (2009) 174102
29. A quantum wave packet method in reactant Jacobi coordinates for state-to-state reactive cross sections, **Zhigang Sun**, Donghui Zhang, Soo-Y. Lee, *J. Phys. Chem. A* **113** (2009) 4145
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26. State-to-state dynamics of $\text{H} + \text{O}_2$ reaction, evidence for non-statistical behaviors, **Zhigang Sun**, Donghui Zhang, Chuanxiu Xu, Shulan Zhou, Daiqian Xie, György Lendvai, Soo-Y. Lee, Shi Ying Lin, and Hua Guo, *J. Am. Chem. Soc.* **130** (2008) 14962

25. Three-state model for femtosecond broadband Stimulated Raman Scattering, **Zhigang Sun**, X. Qiu, D. H. Zhang, Soo-Y. Lee, *J. Raman. Spectr.* **39** (2008) 1568
24. Resonance scattering in the F + HD reaction: Shape resonance and slow-down mechanism, Z. F. Ren, L. Che, X.G. Wang, W. R. Dong, M. H. Qiu, D. X. Dai, X. Y. Wang, X. M. Yang, **Zhigang Sun**, B. N. Fu, Soo-Y. Lee, X. Xu, and D. H. Zhang, *PNAS* **105** (2008) 12662
23. HF($v' = 3$) forward scattering in the F + H₂ reaction: Shape resonance and slow-down mechanism, X.G. Wang, W. R. Dong, M. H. Qiu, Z. F. Ren, L. Che, D. X. Dai, X. Y. Wang, X. M. Yang, **Zhigang Sun**, B. N. Fu, Soo-Y. Lee, X. Xu, and D. H. Zhang, *PNAS* **105** (2008) 6227
22. Quantum Theory of Time-resolved (Femtosecond) stimulated Raman Spectroscopy, **Zhigang Sun**, Z. Jin, J. Lu. D. H. Zhang, S.-Y. Lee, *J. Chem. Phys.*, **128** (2008) 144114
21. Fully Coriolis-coupled quantum studies of the H + O₂ ($v_i = 0-2, j_i = 0,1$) → OH + O reaction on an accurate potential energy surface: Integral cross sections and rate constants, S. Y. Lin, **Zhigang Sun**, H. Guo, D. H. Zhang, P. Honvault, D. Xie, Soo-Y. Lee, *J. Phys. Chem. A*, **112** (2008) 602
20. Time-depend quantum wave packet study of F+HCl/DCI reactions, **Zhigang Sun**, Soo-Y Lee, D. H. Zhang, *Chinese J. Chem. Phys.* **20** (2007) 365
19. The application of Bessel discrete variable representation to atomic hydrogen in intense laser fields, K. Yuan, **Zhigang Sun**, S. Cong, N. Lou, *J. Theoretical. Comp. Chem.*, **6** (2007) 823
18. Wave packet theory of dynamics stimulated Raman spectra in femtosecond pump-probe spectroscopy, **Zhigang Sun**, Z. Jin, J. Lu. D. H. Zhang, S.-Y. Lee, *J. Chem. Phys.*, **126** (2007) 174104
17. Probing Feshbach resonances in F+H-2($j=1$)-> HF+H: Dynamical effect of single quantum H-2-rotation, Z. Ren, L. Che, M. Qiu, X. G. Wang, D. Dai, S. Harich, X. Wang, X. Yang, C. Xu, D. Xie, **Zhigang Sun**, D. Zhang, *J. Chem. Phys.* **125** (2006) 151102
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15. Selective vibrational population transfer between electronic states of the Na-2 molecule with ultrashort laser pulses, K. Yuan, SM Wang, **Zhigang Sun**, S. Cong, N. Lou, *Chem. Phys.* **326** (2006) 605-610
14. Molecular photoelectron spectrum in ultrashort laser fields: Autler-Townes splitting under rotational and aligned effects, K. Yuan, **Zhigang Sun**, S. Cong, N. Lou, *Physical Review A* **74** (2006) 043421

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12. Selective excitation of the OCIO molecule with femtosecond laser pulse, K. Yuan, **Zhigang Sun**, S. Cong, N. Lou, *Physical Review A* **72** (2005) 052513
11. On using Fourier series and Legendre polynomials as angular basis sets for nonrotating triatomic molecules, K. Yuan, **Zhigang Sun**, S. Wang, S. Cong, *Chemical Physics Letters*, **414** (2005) 180-184
10. Steering wave packet dynamics and population transfer between electronic states of the Na₂ molecule by femtosecond laser pulses, K. Yuan, **Zhigang Sun**, S. Cong, S. Wang, J. Yu, N. Lou, *Chemical Physics*, **316** (2005) 245-252
9. Three-dimensional time-dependent wave-packet calculations of OBrO absorption spectra, K. Yuan, **Zhigang Sun**, S. Cong, N. Lou, *Journal of Chemical Physics*, **123**(2005) 064316
8. $A^2A_2 \leftarrow X^2B_1$ absorption and Raman Spectra of the OCIO molecule: A 3D Time-dependent Wavepacket Study, **Zhigang Sun**, N. Lou, G. Nyman, *J. Chem. Phys.* **122** (2005) 054316
7. Molecular dynamics and control following excitation with an ultra-short intense laser pulse, **Zhigang Sun**, N. Lou, G. Nyman, *Chem. Phys.* **308** (2005) 317
6. Femtosecond pump-probe photodissociation of OCIO: direct observation of the 2A₁ state and the role of accidental multiphoton resonance, **Zhigang Sun**, N. Lou, G. Nyman, *Chem. Phys. Lett.* **393** (2004) 204
5. Time-Dependent Wave Packet Split Operator Calculations on a Three-Dimensional Fourier Grid in Radau Coordinates Applied to the OCIO Photoelectron Spectrum, **Zhigang Sun**, N. Lou, G. Nyman, *J. Phys. Chem. A* **108** (2004) 9226
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1. Control of chemical reaction in high-intensity laser field, **Zhigang Sun**, S. Cong, N. Lou, *Chinese Journal of Chemical Physics*, **15** (2002) 161

Talks:

TDWP Calculation of Tri-atomic Molecule with FFT: Absorption and Raman Spectra and Pump-probe Dynamics Simulation (**Zhigang Sun**)
Göteborg University (May 2004) and Dalian Institute of Chemical Physics (Jun. 2004)

Quantum Calculation Study of the OCIO molecule (**Zhigang Sun**)
Dalian Institute of Chemical Physics (Nov. 2004)

Wave Packet Theory of Stationary and Non-stationary State One-and Two-photon Spectroscopies (**Soo-Y. Lee and Zhigang Sun, Invited Talk**)
In First Asian Spectroscopy Conference (ASC '07) at Indian Institute of Science (IISc), Bangalore

Experimental and Theoretical Concepts Behind Femtosecond Stimulated Raman Spectroscopy (**Soo-Y. Lee and Zhigang Sun**)
Perch-CIC Congress V, Jomtien Palm Beach Resort Pattaya, Chonburi, Thailand

A New Wavepacket Method for State-to-state Reaction Scattering in Reactant Jacobi Coordinates (**Zhigang Sun**)
10TH National Molecular Reaction Dynamics Conference (2007), Dalian, China

Conference Posters:

3D Time-dependent Wavepacket Calculation on Fourier Grid Hamiltonian: Application to the OCIO molecule
Zhigang Sun, Nanquan Lou, DICP Symposium (IV) on Molecular Reaction Dynamics, 2004

Open-system density-matrix approach to image-potential dynamics of electrons at Cu(111): Energy- and time-resolved two-photon photoemission spectra
Zhigang Sun, Sooying Lee, Donghui Zhang, 10TH National Quantum Chemistry Conference, Nanjing, 2008

Dominated Non-statistical Behaviors in O+O₂ Exchange Reactive Scattering: Quantum Resonances and Tunneling Effects
Zhigang Sun, Lan Liu, Donghui Zhang, Hua Guo, 10TH International Workshop on Quantum Reactive Scattering, Dalian, 2009