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Personal: Male; Born July 20, 1982 in Leshan City, Sichuan Province; Chinese.

Research Areas: Chemical Physics, Condensed Matter Experiments.

Education:

- Ph.D. Physics. Institute of Physics, Chinese Academy of Sciences, 2008
- B.S. Physics. Beijing Normal University, P. R. China, 2003

Professional Experiences:

- **Boya Distinguished Professor.** International Center for Quantum Materials, Peking University, Beijing, China, 2018.2-present
- **Full Professor.** International Center for Quantum Materials, Peking University, Beijing, China, 2018.2-present
- **Associate Professor (tenured).** International Center for Quantum Materials, Peking University, Beijing, China, 2016.2-2018.1
- **Associate Professor.** International Center for Quantum Materials, Peking University, Beijing, China, 2013.2-2016.1
- **Assistant Professor.** International Center for Quantum Materials, Peking University, Beijing, China, 2010.1-2013.1
- **Postdoctoral Research Associate.** Department of Physics and Astronomy, University of California, Irvine, USA, 2008.3-2009.12
- **Visiting Scholar.** Institut für Festkörperforschung, Forschungszentrum Jülich GmbH, Germany, 2006.11-2007.6

Administration Position:

- **Director,** Interdisciplinary Institute of Light-Elements Quantum Materials, Peking University, 2018-present
- **Director,** Center for Helium Recovery and Liquefaction, Peking University, 2015-present

Representative Publications (selected out of 59):

1. J. Peng, B. Chen, Z. Wang, J. Guo, B. Wu, S. Hao, Q. Zhang, L. Gu, Q. Zhou, Z. Liu, S. Hong, A. Fu, Z. Shi, H. Xie, D. Cao, C.-J. Lin, G. Fu*, L.-S. Zheng, **Y. Jiang***, N. Zheng*, "Surface Coordination Layer Passivates Oxidation of Copper", **Nature** 586, 390 (2020).

2. C. Guo, X. Meng, H. Fu, Q. Wang, H. Wang, Y. Tian, J. Peng, R. Ma, Y. Weng, S. Meng*, E.-G. Wang* and **Y. Jiang***, "Probing Nonequilibrium Dynamics of Photoexcited Polarons on a Metal-Oxide Surface with Atomic Precision", **Phys. Rev. Lett.** 124, 206801 (2020).
3. R. Ma, D. Cao, C. Zhu, Y. Tian, J. Peng, J. Guo, J. Chen, X.-Z., Li, J. S. Francisco, X. C. Zeng*, L.-M. Xu*, E.-G. Wang*, **Y. Jiang***, "Atomic imaging of edge structure and growth of a two-dimensional hexagonal ice", **Nature** 577, 60 (2020).
4. J. Zhu, Z. Wang, H. Dai, Q. Wang, R. Yang, H. Yu, M. Liao, J. Zhang, W. Chen, Z. Wei, N. Li, L. Du, D. Shi, W. Wang, L. Zhang*, **Y. Jiang***, and G. Y. Zhang*, "Boundary activated hydrogen evolution reaction on monolayer MoS₂", **Nature Communications** 10, 1348 (2019)
5. J. Peng, D. Cao, Z. He, J. Guo, P. Hapala, R. Ma, B. Cheng, J. Chen, W.-J. Xie, X.-Z. Li, P. Jelínek, L.-M. Xu*, Y.-Q. Gao*, E.-G. Wang*, **Y. Jiang***, "The effect of hydration number on the interfacial transport of sodium ions", **Nature** 557, 701 (2018)
6. J. Peng, J. Guo, P. Hapala, D. Cao, R. Ma, B. Cheng, L.-M. Xu, M. Ondráček, P. Jelínek*, E.-G. Wang*, and **Y. Jiang***, "Weakly perturbative imaging of interfacial water with submolecular resolution by atomic force microscopy", **Nature Communications** 9, 122 (2018)
7. J. Guo, X.-Z. Li, J. B. Peng, E.-G. Wang*, and **Y. Jiang***, "Atomic-scale investigation of nuclear quantum effects of surface water: experiments and theory", **Prog. Surf. Sci.** 92, 203 (2017).
8. J. Guo, K. Bian, Z. Lin, and **Y. Jiang***, "Perspective: Structure and dynamics of water at surfaces probed by scanning tunneling microscopy and spectroscopy", **J. Chem. Phys.** 145, 160901 (2016) .
9. J. Guo, J.-T. Lü, Y. Feng, J. Chen, J. Peng, Z. Lin, X. Meng, Z. Wang, X.-Z. Li*, E.-G. Wang*, and **Y. Jiang***, "Nuclear quantum effects of hydrogen bonds probed by tip-enhanced inelastic electron tunneling", **Science** 352, 321 (2016).
10. X. Meng, J. Guo, J. Peng, J. Chen, Z. Wang, J.-R. Shi, X. Z. Li, E. G. Wang*, **Y. Jiang***, "Direct visualization of concerted proton tunneling in a water nanocluster", **Nature Physics** 11, 235 (2015).
11. J. Chen, J. Guo, X. Z. Meng, J. B. Peng, J. M. Sheng, L. M. Xu, **Y. Jiang***, X. Z. Li*, E. G. Wang, "An unconventional bilayer ice structure on a NaCl(001) film", **Nature Communications** 5, 4056 (2014).
12. J. Guo, X. Z. Meng, J. Chen, J. B. Peng, J. M. Sheng, X. Z. Li, L. M. Xu, J. R. Shi, E. G. Wang*, and **Y. Jiang***, "Real-space imaging of interfacial water with submolecular resolution", **Nature Materials** 13, 184 (2014).
13. **Y. Jiang**, Q. Huan, L. Fabris, G. C. Bazan, and W. Ho*, "Submolecular control, spectroscopy, and imaging of bond-selective chemistry in single molecules", **Nature Chemistry** 5, 36 (2013).
14. **Y. Jiang**, J. X. Cao, Y. N. Zhang, R. Q. Wu, and W. Ho*, "Real-space imaging of Kondo Screening in a two-dimensional O₂ lattice", **Science** 333, 324 (2011).

Research Projects (PI only):

1. National Science Fund for Distinguished Young Scholars: "Single-molecule physics and chemistry", 21725302, PI, 2018-2022, ¥4,000,000
2. National Science Foundation of China: "Atomic-scale investigation of nuclear quantum effects of confined/interfacial water", 11634001, PI, 2017-2021, ¥3,100,000.

3. National Key R&D Program: "Atomic-scale manipulation of full quantum effects of light-element materials" sub-project: " Investigation and manipulation of nuclear quantum effects of light-element materials ", 2016YFA0300901, PI, 2017-2021, ¥12,490,000.
4. National Program for Support of Top-notch Young Professionals: "Development of a laser-combined scanning tunneling microscope", PI, 2013-2015, ¥1,800,000.
5. National Science Foundation of China: "Atomic-scale manipulation of the electroluminescence of low-dimensional quantum systems", 11104004, PI, 2012-2014, ¥300,000.
6. Doctoral Program of Higher Education of China: "Controlling the light emission of nano-structures at atomic scale", 20110001120126, PI, 2012-2014, ¥40,000.

Honors:

- Zhongguancun Award to Outstanding Young Scientists, Beijing Government, 2020
- Nishina Asia Award, Nishina Memorial Foundation, 2020
- Sir Martin Wood China Prize, Oxford Instruments, 2020
- Young Global Leader, World Economic Forum, 2020
- Outstanding Research Award (1st class), Ministry of Education of China, 2019
- Fellow, American Physical Society, 2019
- Leading Innovative Talent in Science and Technology, Central Chinese Government, 2019
- Top-ten Science Advances in China, Ministry of Science and technology of China, 2018
- Science and Technology Award for Chinese Youth, China Association for Science and Technology, 2018
- Tan Kah Kee Young Scientist Award, Tan Kah Kee Science Award Foundation, 2018
- Distinguished Young Scholars, National Science Foundation of China, 2017
- Cheung Kong Young Scholar, Ministry of Education of China, 2017
- Top-ten Science Advances in China, Ministry of Science and technology of China, 2016
- Award for Supervision of Excellent Doctoral Dissertation, Peking University, 2016
- Emerging Leader, Journal of Physics: Condensed Matter (IOP), 2016
- Best oral presentation, "Ge Zhi" Academic Forum for Young Scholars, Peking University, 2014
- Outstanding Young Scientist, Central Chinese Government, 2012
- Director Awards for excellent research, Chinese Academy of Sciences, 2007
- Outstanding Thesis, Beijing Normal University, 2003
- Excellent Graduate Awards, Beijing Normal University, 2003

Professional Activities:

- Member, Editorial Board of Chinese Physical Letters, 2020-2025
- Member, Editorial Board of Acta Physico-Chimica Sinica, 2020-2023
- Member, Editorial Advisory Board of Journal of Chemical Physics, 2020-2022
- Member, Editorial Advisory Board of Advanced Quantum Technologies, 2018-
- Member, Editorial Board of Acta Chimica Sinica, 2018-2021
- Member, Editorial Board of Chinese Science Bulletin, 2018-2022
- Organizer, Annual Meeting of Chinese Physical Society (Surface and Low-dimensional Physics Division), 2017-present
- Member, Advisory Committee of 9th Joint Meeting of Chinese Physicists Worldwide (Condensed Matter and Material Science Division), Beijing, July 17-20, 2017

- Member, Editorial Board of Acta Physica Sinica, 2016-2020
- Member, Editorial Board of Chinese Physics B, 2016-2020
- Member, Advisory Board of AIP Publication China, 2015-2017
- Member, Advisory Editorial Board of Chemical Physics, 2014-2017
- Member, Chinese Association of Young Scientists And Technologists, 2014-2019
- Organizer, Online Symposium on Scanning Probe Microscopy: Current Status and Future Trends, Beijing and Seoul, Nov. 9-10, 2020
- Organizer, International Conference on Water Sciences 2014, Beijing, Apr. 14-17, 2014
- Member, Expert committee of Center for Helium Recovery and Liquefaction of Peking University, 2012-present
- Member, Academic board of State Key Lab for Surface Physics of Institute of Physics, Chinese Academy of Sciences, 2011-present
- Member, Academic board of R&D Center for Instrumentation and Technology of Peking University, 2011-present
- Referee for journals: Science, Science Advances, Nat. Commun., Chem. Soc. Rev., J. Am. Chem. Soc., National Science Review, Phys. Rev. series, ACS series, J. Chem. Phys., New J. Phys., J. Phys. Cond. Mat., Nanoscale, Adv. Phys. X, Surf. Sci., Appl. Surf. Sci., Mod. Phys. Lett. B, Chin. Phys. B, Front. Phys., etc.
- Session chairs for international conferences: ICMAT2019, OCPA9, SICC9, ICSPM24, ICN+T2014, CPS, ICWS etc.

Teaching:

1. "Surface Physics", fall semester, 2010-present.
2. "Modern Physics Experiments", spring and fall semester, 2015-present.
3. "Frontier lecture of quantum materials", fall semester, 2013
4. Lecturer of "Frontiers Forum of Modern Physics" in Yuanpei School of PKU (2014).
5. Supervised 15 undergraduate theses, 8 Ph.D. theses and 2 Postdoctors.

Invited talks in conferences/workshops/symposiums (selected out of 136):

1. Pacificchem 2020 conference, Honolulu, Hawaii, Dec. 15-20, 2020
Invited talk, "Probing nuclear quantum effects on proton transfer and water dissociation by scanning probe microscopy."
2. Annual meeting of Japanese Vacuum and Surface Society, Japan, Nov. 19-20, 2020
Invited talk, "Probing interfacial water by H-sensitive atomic force microscopy."
3. American Physics Society March Meeting, Denver, Colorado, U.S.A., March 2-6, 2020
Invited talk, "Probing interfacial water by H-sensitive and non-invasive scanning probe microscopy."
4. The 7th International Conference on Tip-Enhanced Raman Spectroscopy (TERS-7), Xiamen, China, Nov. 9-12, 2019
Keynote talk, "Probing molecular vibration and polaron dynamics at atomic scale."
5. World Laureates Association Forum: Young Scientists Forum, Shanghai, Oct. 29-31, 2019
Plenary talk, "Peering into the water at atomic scale."
6. International Forum on Microscopy, Beijing, China, September 6-8, 2019
Invited talk, "Peering into Nanostructured Water/Ice by Scanning Probe Microscopy."

7. 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore, June 24-28, 2019
Invited talk, "Peering into Nanostructured Water/Ice by Scanning Probe Microscopy."
8. APCTP-KIAS Quantum Materials Symposium 2019 (QMS2019), YongPyong, Korea, Feb. 10-15, 2019
Invited talk, "2D materials at the boundaries and edges: a combined STM and AFM study."
9. The 9th Asian Conference on Nanoscience & Nanotechnology, Qingdao, China, Oct. 18-21, 2018
Keynote talk, "Phase engineering of monolayer MoS₂."
10. CECAM Workshop "Heterogeneous Ice Nucleation: The Ultimate Challenge for Molecular Modelling?" Lausanne, Switzerland, Sep.18-21, 2018
Invited talk, "Probing surface water at submolecular level by scanning probe microscopy: from clusters to 2D layers."
11. 34th European Conference on Surface Science, Aarhus, Denmark, August 26-31, 2018
Invited talk, "Visualizing interfacial ion hydration and transport at molecular level."
12. International Conference on Nanoscience + Technology (ICN+T), Brno, Czech Republic, July 22-27, 2018
Invited talk, "Probing interfacial water at submolecular level by scanning probe microscopy."
13. 255th ACS National Meeting, New Orleans, LA, USA, Mar. 18-22, 2018
Invited talk, "Probing photoexcitation and transient charge dynamics of TiO₂(110) at atomic scale."
14. ACS Publications Symposium: Innovation in Energy Conversion – A Physical Chemistry Perspective, Dalian, China, Sep. 24-26, 2017
Invited talk, "Atomic-scale charge dynamics of single oxygen vacancies on TiO₂(110)."
15. The 9th Joint Meeting of Chinese Physicists Worldwide (OCPA9), Beijing, China, July 17-20, 2017
Keynote talk, "Photo-excited carrier dynamics of single defects on TiO₂ (110) probed by a laser-combined STM/S."
16. 9th International Conference on Advanced Vibrational Spectroscopy, Victoria, BC, Canada, June 11-16, 2017
Plenary talk, "Probing molecular vibration at single-molecule level by tip-enhanced IETS."
17. Symposium on Surface Science & Nanotechnology (SSSN-Kansai), Kyoto, Japan, Jan. 24-25, 2016
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
18. 24th International Colloquium on Scanning Probe Microscopy, Hawaii, USA, Dec.14-16, 2016
Invited talk, "Quantum motion of protons in water probed by STM/S."
19. 9th Singapore International Chemical Conference, Singapore, Dec.11-14, 2016.
Invited talk, "Tip-enhanced inelastic electron tunnelling spectroscopy and its application in surface chemistry."
20. 15th International Workshop on Dynamics, Interactions and Electronic Transitions at Surfaces, Shanghai, China, Oct. 10-13, 2016
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
21. International Workshop on Nanomaterials and Nanodevices, Beijing, China, July 8-10th, 2016
Plenary talk, "Quantum motion of protons in water probed by STM/S."
22. American Physics Society March Meeting. Baltimore, Maryland, USA, March 14-18, 2016
Invited talk, "High-resolution imaging and spectroscopy of interfacial water at single bond limit."

23. 18th National Conference on Light Scattering, Chengdu, China, Oct. 22-25, 2015.
Plenary talk, "Inelastic electron tunneling spectroscopy (IETS) and its applications in hydrogen-bonded systems."
24. The 15th International Conference on Vibrations at Surfaces, San Sebastian, Spain, June 22-26, 2015.
Invited talk, "Probing nuclear quantum effects in water with scanning tunneling microscopy and spectroscopy."
25. AVS 61st International Symposium & Exhibition, Baltimore, Maryland, Nov. 9-14, 2014.
Invited talk, "Probing the quantum nature of hydrogen bonds at single bond limit in interfacial water."
26. International Conference on Nanoscience + Technology (ICN+T), Vail, Colorado, USA, July 20-25, 2014
Invited talk, "Peering into Interfacial Water with Submolecular Resolution."
27. International Conference on Water Sciences, Beijing, April 14-17, 2014
Plenary talk, "Visualization of the proton tunneling in cyclic ice nanoclusters."

Full list of publications and presentations

Publications (*corresponding author):

1. Jian Peng, Bili Chen, Zhichang Wang, Jing Guo, Binghui Wu, Shuqiang Hao, Qinghua Zhang, Lin Gu, Qin Zhou, Zhi Liu, Shuqin Hong, Ang Fu, Zaifa Shi, Hao Xie, Duanyun Cao, Chang-Jian Lin, Gang Fu*, Lan-Sun Zheng, Ying Jiang*, Nanfeng Zheng*, “Surface Coordination Layer Passivates Oxidation of Copper”, *Nature* 586, 390 (2020).
2. Muhong Wu, Zhibin Zhang, Xiaozhi Xu, Zhihong Zhang, Yunrui Duan, Jichen Dong, Ruixi Qiao, Sifan You, Li Wang, Jiajie Qi, Dingxin Zou, Nianze Shang, Yubo Yang, Hui Li, Lan Zhu, Junliang Sun, Haijun Yu, Peng Gao, Xuedong Bai, Ying Jiang, Zhu-Jun Wang, Feng Ding*, Dapeng Yu*, Enge Wang*, and Kaihui Liu*, “Seeded growth of large single-crystal copper foils with high-index facets”, *Nature* 406, 581 (2020).
3. Jing Guo*, Duanyun Cao, Ji Chen, Ke Bian, Li-Mei Xu, En-Ge Wang, and Ying Jiang*, “Probing the intermolecular coupled vibrations in a water cluster with inelastic electron tunneling spectroscopy”, *J. Chem. Phys.* 152, 234301 (2020). (*Special Issue: Interfacial Structure and Dynamics for Electrochemical Energy Storage*)
4. Yuqing Huang, Chaoyu Guo, Qin Wang, Xiangzhi Meng, Ying Jiang* “Probing charge dynamics at atomic scale by ultrafast scanning tunneling microscope”, *Chin. Sci. Bull.* 65, 2535 (2020).
5. Chaoyu Guo, Xiangzhi Meng, Huixia Fu, Qin Wang, Huimin Wang, Ye Tian, Jinbo Peng, Runze Ma, Yuxiang Weng, Sheng Meng*, Enge Wang* and Ying Jiang*, “Probing Nonequilibrium Dynamics of Photoexcited Polarons on a Metal-Oxide Surface with Atomic Precision”, *Phys. Rev. Lett.* 124, 206801 (2020). (*Selected as Editors’ Suggestion. Highlighted by Chinese Science Bulletin*).
6. Runze Ma, Ying Jiang*, “Atomic-scale imaging of structure and growth of a two-dimensional ice”, *Sci. Chin. Phys., Mech. & Astron.* 50, 087001 (2020).
7. Ye Tian, Runze Ma, Ying Jiang*, “Structure and Growth of Two-dimensional Ices at the Surfaces Probed by Scanning Probe Microscopy”, *Chinese J. Struct. Chem.* 39, 381 (2020). (*Invited Perspective article*)
8. Ye Tian, Runze Ma, Ying Jiang*, “Structure and growth of two-dimensional ice I”, *Chin. Sci. Bull.* 65, 425 (2020).
9. Runze Ma, Duanyun Cao, Chongqing Zhu, Ye Tian, Jinbo Peng, Jing Guo, Ji Chen, Xinzheng Li, Joseph. S. Francisco, Xiaocheng Zeng*, Limei Xu*, Enge Wang*, Ying Jiang*, “Atomic imaging of edge structure and growth of a two-dimensional hexagonal ice”, *Nature* 577, 60 (2020). (*Highlighted by Nature Reviews Chemistry 4, 65 (2020) and Physics World. Reported by Science Daily, Phys.org, Chinese Science Bulletin, etc.*)
10. Zhichang Wang, Xiaoqiang Liu, Jianqi Zhu, Sifan You, Ke Bian, Guangyu Zhang*, Ji Feng*, Ying Jiang*, “Local engineering of topological phase in monolayer MoS₂”, *Sci. Bull.* 64, 1750 (2019). (*Cover story*)
11. Jing Guo, Ying Jiang*, “Nuclear Quantum Effects in Surface Chemistry”, *Chin. J. Catal.* 1466, S104 (2019). (*Invited Perspective article*)
12. Duanyun Cao, Yizhi Song, Jinbo Peng, Runze Ma, Jing Guo, Ji Chen, Xinzheng Li, Ying Jiang, Enge Wang and Limei Xu*, “Advances in Atomic Force Microscopy: Weakly

- Perturbative Imaging of the Interfacial Water”, *Frontier in Chemistry* 7, 626 (2019).
(Invited Perspective article)
13. Chuangye Song, Xuanyi Li, Ying Jiang, Xi Wang, Jiannian Yao, Sheng Meng* and Jinxing Zhang*, “Real-Space Imaging of Orbital Selectivity on SrTiO₃(001) Surface”, *ACS Appl. Mater. Interfaces* 11, 37279 (2019).
 14. Can Liu, Xiaozhi Xu, Lu Qiu, Muhong Wu, Ruixi Qiao, Li Wang, Jinhuan Wang, Jingjing Niu, Jing Liang, Xu Zhou, Zhihong Zhang, Mi Peng, Peng Gao, Wenlong Wang, Xuedong Bai, Ding Ma, Ying Jiang, Xiaosong Wu, Dapeng Yu, Enge Wang, Jie Xiong*, Feng Ding* and Kaihui Liu*, “Kinetic modulation of graphene growth by fluorine through spatially confined decomposition of metal fluorides”, *Nat. Chem.* 11, 730 (2019).
 15. Li Wang, Xiaozhi Xu, Leining Zhang, Ruixi Qiao, Muhong Wu, Zhichang Wang, Shuai Zhang, Jing Liang, Zhihong Zhang, Zhibin Zhang, Wang Chen, Xuedong Xie, Junyu Zong, Yuwei Shan, Yi Guo, Marc Willinger, Hui Wu, Qunyang Li, Wenlong Wang, Peng Gao, Shiwei Wu, Yi Zhang, Ying Jiang, Dapeng Yu, Enge Wang, Xuedong Bai*, Zhu-Jun Wang*, Feng Ding*, Kaihui Liu*, “Epitaxial Growth of a 100-square-centimetre Single-crystal Hexagonal Boron Nitride Monolayer on Copper”, *Nature* 570, 91 (2019).
 16. Xingxing Peng, Ruidan Zhang, Ran-ran Feng, An-an Liu, Chuanyao Zhou, Qing Guo, Xueming Yang, Ying Jiang, and Zefeng Ren*, “Active Species in Photocatalytic Reactions of Methanol on TiO₂(110) Identified by Surface Sum Frequency Generation Vibrational Spectroscopy”, *J. Phys. Chem. C* 123, 13789 (2019).
 17. Ruidan Zhang, Haochen Wang, Xingxing Peng, Ran-ran Feng, An-an Liu, Qing Guo, Chuanyao Zhou, Zhibo Ma*, Xueming Yang, Ying Jiang, Zefeng Ren*, “In Situ Studies on Temperature-Dependent Photocatalytic Reactions of Methanol on TiO₂(110)”, *J. Phys. Chem. C* 123, 9993 (2019).
 18. J. Zhu, Z. Wang, H. Dai, Q. Wang, R. Yang, H. Yu, M. Liao, J. Zhang, W. Chen, Z. Wei, N. Li, L. Du, D. Shi, W. Wang, L. Zhang*, Y. Jiang*, and G. Y. Zhang*, "Boundary activated hydrogen evolution reaction on monolayer MoS₂", *Nature Communications* 10, 1348 (2019).
 19. Jinbo Peng, Jing Guo, and Ying Jiang*, "Probing surface water at submolecular level with scanning probe microscopy", *Sci. Sin. Chim.* 49, 536 (2019). (Invited review article)
 20. Si-Fan You, Lu-Ye Sun, Jing Guo, Xiao-Hui Qiu*, and Ying Jiang*, "Recent advances in probing surface/interfacial water by scanning probe microscopy", *Acta Phys. Sin.*, 68, 016802 (2019). (Invited review article)
 21. Ye Tian, Fan Yang, Chaoyu Guo and Ying Jiang*, “Recent Advances in Ultrafast Time-resolved Scanning Tunneling Microscopy”, *Surf. Rev. Lett.* 25, 1841003 (2018). (Invited review article)
 22. Chaoyu Guo, Xiangzhi Meng, Qin Wang, and Ying Jiang*, "Image charge effect on the light emission of rutile TiO₂(110) induced by a scanning tunneling microscope", *Chin. Phys. B* 27, 077301 (2018). (Cover story)
 23. Shaoxiang Sheng, Runze Ma, Jianguo Wu, Wenbin Li, Longjuan Kong, Xin Cong, Duanyun Cao, Wenqi Hu, Jian Gou, Jun-Wei Luo, Peng Cheng, Ping-Heng Tan*, Ying Jiang*, Lan Chen, and Kehui Wu*, "The Pentagonal Nature of Self-Assembled Silicon Chains and Magic Clusters on Ag(110)", *Nano Lett.* 18, 2937 (2018).

24. J. Guo and Y. Jiang*, "Research advances in investigating nuclear quantum effects of water", *Chin. Sci. Bull.* 63, 1332 (2018). (*Invited review article*)
25. J. Peng, D. Cao, Z. He, J. Guo, P. Hapala, R. Ma, B. Cheng, J. Chen, W.-J. Xie, X.-Z. Li, P. Jelínek, L.-M. Xu*, Y.-Q. Gao*, E.-G. Wang*, Y. Jiang*, "The effect of hydration number on the interfacial transport of sodium ions", *Nature* 557, 701 (2018) (*Featured in Nature Reviews Chemistry* 2, 97 (2018). *Highlighted in Chin. Sci. Bull.* 63, 2108 (2018). *Selected as 2018 Top-ten Science Advances in China*)
26. Jinbo Peng, Jing Guo, Prokop Hapala, Duanyun Cao, Runze Ma, Bowei Cheng, Limei Xu, Martin Ondráček, Pavel Jelínek*, Enge Wang*, and Ying Jiang*, "Weakly perturbative imaging of interfacial water with submolecular resolution by atomic force microscopy", *Nature Communications* 9, 122 (2018). (*Featured in Chin. Sci. Bull.* 63, 785 (2018). *ESI highly cited paper*)
27. Yexin Feng, Zhichang Wang, Jing Guo, Ji Chen, En-Ge Wang, Ying Jiang*, and Xin-Zheng Li*, "The collective and quantum nature of proton transfer in the cyclic water tetramer on NaCl(001)", *J. Chem. Phys.* 148, 102329 (2018). (*Special Issue: Nuclear Quantum Effects*)
28. X. Z. Xu, D. Yi, Z. C. Wang, J. C. Yu, Z. H. Zhang, Q. X. Qiao, Z. H. Hu, P. Gao, H. L. Peng, Z. F. Liu, D. P. Yu, E. G. Wang, Y. Jiang*, F. Ding*, and K. H. Liu*, "Ultrahigh Anticorrosion of Cu by Commensurate Graphene Coating", *Adv. Mater.* 30, 1702944 (2018).
29. J. Guo, X.-Z. Li, J. B. Peng, E.-G. Wang*, and Y. Jiang*, "Atomic-scale investigation of nuclear quantum effects of surface water: experiments and theory ", *Prog. Surf. Sci.*, 92, 203 (2017). (*Invited review*)
30. Jie Liu, Chongqin Zhu, Kai Liu, Ying Jiang, Yanlin Song, Joseph S. Francisco*, Xiao Cheng Zeng*, and Jianjun Wang*, "Distinct ice patterns on solid surfaces with various wettabilities", *Proc. Natl. Acad. Sci.* 114, 11285 (2017). (*Highlighted by Nature News*)
31. Sifan You, Jing-Tao Lü*, Jing Guo, and Ying Jiang*, "Recent advances in inelastic electron tunneling spectroscopy", *Adv. Phys. X* 2, 907 (2017). (*Invited review article*)
32. Jianqi Zhu, Zhichang Wang, Hua Yu, Na Li, Jing Zhang, JianLing Meng, Mengzhou Liao, Jing Zhao, Xiaobo Lu, LuoJun Du, Rong Yang, Dongxia Shi, Ying Jiang*, and Guangyu Zhang*, "Argon Plasma Induced Phase Transition in Monolayer MoS₂", *J. Am. Chem. Soc.* 139, 10216 (2017).
33. Xiaozhi Xu, Zhihong Zhang, Jichen Dong, Ding Yi, Jingjing Niu, Muhong Wu, Li Lin, Rongkang Yin, Mingqiang Li, Jingyuan Zhou, Shaoxin Wang, Junliang Sun, Xiaojie Duan, Peng Gao, Ying Jiang, Xiaosong Wu, Hailin Peng, Rodney S. Ruoff, Zhongfan Liu, Dapeng Yu, Enge Wang*, Feng Ding*, and Kaihui Liu*, "Ultrafast epitaxial growth of metre-sized single-crystal graphene on industrial Cu foil", *Sci. Bull.* 62, 1074 (2017). (*ESI highly cited paper*)
34. Jinbo Peng, Jing Guo, Runze Ma, Xiangzhi Meng, and Ying Jiang*, "Atomic-scale imaging of the dissolution of NaCl islands by water at low temperature", *J. Phys.: Condens. Matter.* 29, 104001 (2017). (*special issue: Emerging Leaders. Highlighted in Jphys+ of IOP*)
35. Jing Guo, Ke Bian, Zeren Lin, and Ying Jiang*, "Perspective: Structure and dynamics of water at surfaces probed by scanning tunneling microscopy and spectroscopy", *J. Chem. Phys.* 145, 160901 (2016) . (*Invited review article in JCP Spotlight Collections*)
36. J. Guo, J.-T. Lü, Y. Feng, J. Chen, J. Peng, Z. Lin, X. Meng, Z. Wang, X.-Z. Li*, E.-G. Wang*, and Y. Jiang*, "Nuclear quantum effects of hydrogen bonds probed by tip-enhanced inelastic

- electron tunneling”, *Science* 352, 321 (2016). (Interviewed by *Physics World of IOP*. Reported by Asian scientist, CCTV, China Science Daily, Guangming Daily, Science and Technology Daily, etc.. Highlighted in *Acta Phys. -Chim. Sin.* 32, 1043 (2016). Selected as 2016 Top-ten Science Advances in China)
37. P. Gao, H.-J. Liu, Y.-L. Huang, Y.-H. Chu, R. Ishikawa, B. Feng, Y. Jiang, N. Shibata, E.-G. Wang, and Y. Ikuhara, "Atomic mechanism of polarization-controlled surface reconstruction in ferroelectric thin films", *Nature Communications* 7, 11318 (2016).
 38. J. Chen, W. Sun, H. Wang, X. Z. Li, E. G. Wang, Y. Jiang*, "Visualizing a new type of two-dimensional ice structure", *Mod. Phys.* 27, 45 (2015). (Invited article)
 39. X. Meng, J. Guo, J. Peng, J. Chen, Z. Wang, J. R. Shi, X. Z. Li, E. G. Wang*, Y. Jiang*, "Direct visualization of concerted proton tunnelling in a water nanocluster", *Nature Physics* 11, 235 (2015). (Featured in "News and Views" of *Nature Physics* 11, 216 (2015). Reported by Asian Scientist Magazine. Interviewed by *Phys.org*.)
 40. J. Chen, J. Guo, X. Z. Meng, J. B. Peng, J. M. Sheng, L. M. Xu, Y. Jiang*, X. Z. Li*, E. G. Wang, "An unconventional bilayer ice structure on a NaCl(001) film", *Nature Communications* 5, 4056 (2014). (Reported by Asian Scientist Magazine)
 41. J. Guo, X. Z. Meng, J. Chen, J. B. Peng, J. M. Sheng, X. Z. Li, L. M. Xu, J. R. Shi, E. G. Wang*, and Y. Jiang*, "Real-space imaging of interfacial water with submolecular resolution", *Nature Materials* 13, 184 (2014). (Highlighted in *Nature China* doi:10.1038/nchina.2014.5. Reported by Nanowerk, Microscopy&Analysis, Azonao, CCTV, The People's Daily, etc.)
 42. M. Schnedler, Y. Jiang, K. H. Wu, E. G. Wang, R. E. Dunin-Borkowski, and Ph. Ebert*, "Effective mass of a two-dimensional $\sqrt{3} \times \sqrt{3}$ Ga single atomic layer on Si(111)", *Surface Science* 630, 225 (2014).
 43. Y. Jiang, Q. Huan, L. Fabris, G. C. Bazan, and W. Ho*, "Submolecular control, spectroscopy, and imaging of bond-selective chemistry in single molecules", *Nature Chemistry* 5, 36 (2013). (Reported as research news by *Chemistry world* and *Foresight Institute*)
 44. H. Qin, Y. Jiang, G. Zhang, and K. H. Wu*, "Interaction of surface and interface plasmons in extremely thin Al films on Si(111)", *Appl. Phys. Lett.* 102, 051605 (2013).
 45. Ph. Ebert*, S. Landrock, Y. Jiang, K. H. Wu, E. G. Wang, and R. E. Dunin-Borkowski, "Electronically Nonalloyed State of a Statistical Single Atomic Layer Semiconductor Alloy", *Nano Lett.* 12, 5845 (2012).
 46. Y. Jiang, J. X. Cao, Y. N. Zhang, R. Q. Wu, and W. Ho*, "Real-space imaging of Kondo Screening in a two-dimensional O₂ lattice", *Science* 333, 324 (2011). (Featured in *Nature Nanotechnology* 6, 461 (2011). Selected for publication in *Virtual Journal of Nanoscale Science & Technology*)
 47. Q. Huan, Y. Jiang, Y. Y. Zhang, U. Ham, and W. Ho*, "Spatial Imaging of Individual Vibronic States in the Interior of Single Molecules", *J. Chem. Phys.* 135, 014705 (2011). (Selected for publication in *Virtual Journal of Biological Physics Research*)
 48. Z. Yuan, Y. Jiang, Y. Gao, M. Käll, and S. W. Gao*, "Symmetry-dependent screening of surface plasmons in ultrathin supported films: The case of Al/Si(111)", *Phys. Rev. B* 83, 165452 (2011).
 49. J. Teng, L. Zhang, Y. Jiang, J. D. Guo, Q. Guo, E. G. Wang, P. Ebert, T. Sakurai, and K. H. Wu*, "Catalystlike behavior of Si adatoms in the growth of monolayer Al film on Si(111)", *J. Chem. Phys.* 133, 014704 (2010).

50. Y. Jiang*, J. D. Guo, Ph. Ebert, E. G. Wang, and K. H. Wu, “Locally probing the screening potential at a metal-semiconductor interface”, *Phys. Rev. B* 81, 033405 (2010).
51. S. Landrock, Y. Jiang, K. H. Wu, E. G. Wang, K. Urban, and Ph. Ebert*, “Origin of nanoscale potential fluctuations in two-dimensional semiconductors”, *Appl. Phys. Lett.* 95, 072107 (2009). (*Selected for publication in Virtual Journal of Nanoscale Science & Technology*)
52. Z. Tang, S. Y. Yang, Y. Jiang, W. X. Wang, J. F. Jia, Q. K. Xue, E. G. Wang, and K. H. Wu*, “Bi- and Au-Induced Reconstructions on GaAs(001)-2×4 Surface”, *Chin. Phys. Lett.* 25, 2977 (2008).
53. Y. H. Yu*, Z. Tang, Y. Jiang, and D. Fujita, “Surface alloying effects in the growth of Au on Pb(111) thin film”, *Surf. Sci.* 602, 3358 (2008).
54. Y. Jiang, K. H. Wu, J. Ma, B. Wu, E. G. Wang, and Ph. Ebert, “Quantum size effects in the nonmetal to metal transition of two-dimensional Al islands”, *Phys. Rev. B* 76, 235434 (2007). (*Selected for publication in Virtual Journal of Nanoscale Science & Technology*)
55. Y. Jiang, Y. Kim, S. B. Zhang, Ph. Ebert, S. Y. Yang, K. H. Wu* and E. G. Wang, “Growing extremely thin bulklike metal film on a semiconductor surface: Monolayer Al(111) on Si(111)”, *Appl. Phys. Lett.* 91, 181902 (2007).
56. Y. Jiang, K. H. Wu, Z. Tang, Ph. Ebert and E. G. Wang, “Quantum size effect induced dilute atomic layers in ultrathin Al films”, *Phys. Rev. B* 76, 035409 (2007). (*Selected for publication in Virtual Journal of Nanoscale Science & Technology*)
57. Z. Tang, J. Teng, Y. Jiang, J. F. Jia, J. D. Guo, and K. H. Wu*, “Reducing the critical thickness of epitaxial Ag film on the Si(111)substrate by introducing a monolayer Al buffer layer”, *J. Appl. Phys.* 102, 053504 (2007).
58. Y. H. Yu, Z. Tang, Y. Jiang, K. H. Wu*, and E. G. Wang, “Thickness dependence of the surface plasmon dispersion in ultra-thin aluminum films on silicon”, *Surf. Sci.* 600, 4966 (2006).
59. Y. H. Yu, Y. Jiang, Z. Tang, Q. L. Guo, J. F. Jia, Q. K. Xue, K. H. Wu*, and E. G. Wang, “Thickness dependence of the surface plasmon damping and dispersion in ultra-thin Ag films”, *Phys. Rev. B* 72, 205405 (2005). (*Selected for publication in Virtual Journal of Nanoscale Science & Technology*)

Invited talks in conferences/workshops/ symposiums:

1. Pacificchem 2020 conference, Honolulu, Hawaii, Dec. 15-20, 2020
Invited talk, “Probing nuclear quantum effects on proton transfer and water dissociation by scanning probe microscopy.”
2. Annual meeting of Japanese Vacuum and Surface Society, Japan, Nov. 19-20, 2020
Invited talk, “Probing interfacial water by H-sensitive atomic force microscopy.”
3. Strategic research symposium of quantum matters and application, Hefei, China, Sep. 20, 2020
Invited talk, “Nuclear quantum effects in condensed matters.”
4. The 1st public technology workshop of Songshan Lake Materials Laboratory, Dongguan, China, Sep. 16-18, 2020
Invited talk, “Recent advances and application of scanning probe microscopy.”
5. SPIE Optics + Photonics conference, San Diego, USA, Aug. 23-27, 2020
Invited talk, “Probing interfacial water by noncontact atomic force microscopy.”
6. 10th Meeting of the International Organization of Chinese Physicists and Astronomers (OCPA10), Taichuang, Taiwan, June 27-July 2, 2020
Keynote talk, “The growth and structure of an interlocked two-dimensional ice.”
7. American Physics Society March Meeting, Denver, Colorado, U.S.A., March 2-6, 2020
Invited talk, “Probing interfacial water by H-sensitive and non-invasive scanning probe microscopy.”
8. The 7th International Conference on Tip-Enhanced Raman Spectroscopy (TERS-7), Xiamen, China, Nov. 9-12, 2019
Keynote talk, “Probing molecular vibration and polaron dynamics at atomic scale.”
9. The 4th National Symposium on Surface Physical Chemistry, Wuhan, China, Nov. 2-5, 2019
Invited talk, “The formation and growth of 2D ice I.”
10. World Laureates Association Forum: Young Scientists Forum, Shanghai, Oct. 29-31, 2019
Plenary talk, “Peering into the water at atomic scale.”
11. National Annual Conference on Electron Microscopy, Hefei, China, Oct. 15-19, 2019
Invited talk, “Probing water clusters and 2D ice with AFM.”
12. National Conference on Nano- and Surface Science and technology, Suzhou, China, Oct. 8-10, 2019
Plenary talk, “Water science at atomic scale.”
13. International Forum on Microscopy, Beijing, China, September 6-8, 2019
Invited talk, “Peering into Nanostructured Water/Ice by Scanning Probe Microscopy.”
14. The 10th National Conference on Inorganic Chemistry, Jinan, China, Aug. 18-21, 2019
Keynote talk, “Structure and dynamics of water at atomic scale.”
15. “From the Nanoworld to Stardusts - NW2SD”, Marseille, France, July 17-19, 2019
Invited talk, “Peering into Nanostructured Water/Ice by Scanning Probe Microscopy.”
16. 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore, June 24-28, 2019
Invited talk, “Peering into Nanostructured Water/Ice by Scanning Probe Microscopy.”
17. Future Youth Forum, Beijing, China, Apr. 10, 2019
Keynote talk, “The ubiquitous but mysterious water.”

18. APCTP-KIAS Quantum Materials Symposium 2019 (QMS2019) , YongPyong, Korea, Feb. 10-15, 2019
Invited talk, “2D materials at the boundaries and edges: a combined STM and AFM study.”
19. 2019 International Symposium on Future Materials, Wollongong, Australia, Jan. 30-Feb. 1, 2019
Invited talk, “Phase engineering of monolayer MoS₂.”
20. IMS symposium "Water at interfaces 2018", Okazaki, Japan, Jan.15-17, 2019
Invited talk, “Peering into interfacial water by scanning probe microscopy: from single molecules to 2D ices.”
21. Southern Forum 2019 Condensed Matters and Quantum Physics, Shenzhen, China, Jan 11-13, 2019
Invited talk, “Phase engineering of monolayer MoS₂.”
22. Strategic Symposium on Water Science, Beijing, Oct. 30, 2018
Invited talk, “New experimental methods for water science: Imaging and Spectroscopy.”
23. ACSIN-14 & ICSPM26, Sendai, Japan, Oct. 21 - 25, 2018
Invited talk, “Probing interfacial water at submoleuclar level by atomic force microscopy.”
24. The 9th Asian Conference on Nanoscience & Nanotechnology, Qingdao, China, Oct. 18-21, 2018
Keynote talk, “Phase engineering of monolayer MoS₂.”
25. National Meeting of Surface Science and Applications, Suzhou, China, Oct. 12-15, 2018
Invited talk, “Probing interfacial water at submoleuclar level by atomic force microscopy.”
26. Forum for 20th anniversary of Cheung Kong Scholar, Shanghai, Oct. 13-14, 2018
Invited talk, “Atomic-scale studies of nuclear quantum effects in water.”
27. CECAM Workshop “Heterogeneous Ice Nucleation: The Ultimate Challenge for Molecular Modelling?” Lausanne, Switzerland, Sep.18-21, 2018
Invited talk, “Probing surface water at submolecular level by scanning probe microscopy: from clusters to 2D layers.”
28. 7th Sino German Frontiers of Chemistry Symposium, Munich, Germany, Sep. 2-7, 2018
Invited talk, “Probing interfacial water at submoleuclar level by scanning probe microscopy.”
29. The 34th European Conference on Surface Science, Aarhus, Denmark, Aug. 26-31, 2018
Invited talk, “Visualizing interfacial ion hydration and transport at molecular level.”
30. 16th Chinese Biophysics Congress, Chengdu, China, Aug. 24-27. 2018
Invited talk, “Probing interfacial water at submoleuclar level by scanning probe microscopy.”
31. International Conference on Nanoscience + Technology (ICN+T), Brno, Czech Republic, July 22-27, 2018
Invited talk, “Probing interfacial water at submoleuclar level by scanning probe microscopy.”
32. “Properties of Water at Molecular Scale” Workshop, NGI, Manchester, UK, July 2-4, 2018
Invited talk, “Probing interfacial water at submoleuclar level by scanning probe microscopy.”
33. The 8th joint ICQ Annual Workshop, Hefei, June 16-18, 2018
Invited talk, “Probing interfacial water at submoleuclar level by atomic force microscopy.”

34. The 9th PKU-UC Davis plus Bilateral Symposium of the 10+10 Alliance, Beijing, May 14-15, 2018
Invited talk, "Probing interfacial water and ion hydration at submoleular level by atomic force microscopy."
35. The 31st Chinese Chemical Society Annual Meeting. Hangzhou, China, May 5-8, 2018
Invited talk, "Probing structure and dynamics of hydrated ions at atomic scale."
36. The 8th National Conference on Physical Inorganic Chemistry, Taiyuan, Shanxi, Apr. 14-15, 2018
Invited talk, "Probing interfacial water at submoleular level by scanning probe microscopy."
37. 255th ACS National Meeting, New Orleans, LA, Mar. 18-22, 2018
Invited talk, "Probing photoexcitation and transient charge dynamics of TiO₂(110) at atomic scale."
38. 1st UK-China 2D Materials Conference, National Graphene Institute, Manchester, UK, Jan. 24-26, 2018
Invited talk, "Phase engineering of monolayer MoS₂."
39. The 7th Chinese Forum for Young Scientists in Condensed Matter Physics, Beijing, China, Nov. 17-19, 2017
Invited talk, "Recent research progress and new instrumentation."
40. The 3rd National Symposium on Surface Physical Chemistry, Suzhou, China, Oct. 22-23, 2017
Invited talk, "Ultrafast STM and its application in photo-excited carrier dynamics."
41. National Annual Conference on Electron Microscopy, Chengdu, China, Oct. 18-20, 2017
Invited talk, "Submolecular-resolution non-invasive imaging of interfacial water with qPlus-AFM."
42. ACS Publications Symposium: Innovation in Energy Conversion – A Physical Chemistry Perspective, Dalian, China, Sep. 24-26, 2017
Invited talk, "Atomic-scale charge dynamics of single oxygen vacancies on TiO₂(110)."
43. The 188th ShuangQing Forum on "The opportunity beyond the mainstream in Chemistry", Beijing, China, Sep. 20-21, 2017
Invited talk, "Nuclear Quantum effects of water."
44. STM² - From Atoms to Materials, Chengdu, China, Sep. 8, 2017
Invited talk, "Ultrafast STM and its application in probing carrier dynamics."
45. Workshop on "Advanced Scanning Probe Microscopy", Gyeonggi-Do, Korea, Aug. 17-18, 2017
Invited talk, "Photo-excited carrier dynamics of single defects on TiO₂ (110) probed by a laser-combined STM/S."
46. The 9th Joint Meeting of Chinese Physicists Worldwide (OCPA9), Beijing, China, July 17-20, 2017
Keynote talk, "Photo-excited carrier dynamics of single defects on TiO₂ (110) probed by a laser-combined STM/S."
47. 9th International Conference on Advanced Vibrational Spectroscopy, Victoria, BC, Canada, June 11-16, 2017
Plenary talk, "Probing molecular vibration at single-molecule level by tip-enhanced IETS."

48. The 2nd Sino-German Young Scientist Symposium on Structures & Dynamics at Surfaces, Goettingen, Germany, May 28-June 2, 2017.
Invited talk, "Photo-induced Carrier Dynamics of Single Defects on TiO₂(110) Surface Probed by Laser-Combined STM/STS"
49. Workshop on SPM & on-surface chemistry, Prague, Czech Republic, May 22-23, 2017
Invited talk, "Submolecular-resolution non-invasive imaging of interfacial water with qPlus-AFM."
50. Symposium on Surface Science & Nanotechnology (SSSN-Kansai), Kyoto, Japan, Jan. 24-25, 2017
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
51. 24th International Colloquium on Scanning Probe Microscopy, Hawaii, USA, Dec.14-16, 2016
Invited talk, "Quantum motion of protons in water probed by STM/S."
52. 9th Singapore International Chemical Conference, Singapore, Dec.11-14, 2016.
Invited talk, "Tip-enhanced inelastic electron tunnelling spectroscopy and its application in surface chemistry."
53. HGI COLLOQUIUM annual meeting, Tianjin, China, Nov.17-18, 2016
Invited talk, "Structure and dynamics of water at surfaces probed by scanning probe microscopy and spectroscopy."
54. National Annual Conference on Electron Microscopy, Tianjin, China, Oct. 12-16, 2016
Invited talk, "Structure and dynamics of interfacial water probed by high-resolution SPM/S."
55. 15th International Workshop on Dynamics, Interactions and Electronic Transitions at Surfaces, Shanghai, China, Oct. 10-13, 2016
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
56. Chinese Vacuum Society Fall Meeting. Kunming, China, Aug. 13-15, 2016
Invited talk, "Structure and dynamics of ion hydrates: a combined study of STM and NC-AFM."
57. 2nd National Conference on Condensed Matter Physics, Nanjing, China, July 20-22, 2016
Invited talk, "Visualizing quantum fluctuation and tunneling in water with STM/S."
58. International Workshop on Nanomaterials and Nanodevices, Beijing, China, July 8-10th, 2016
Plenary talk, "Quantum motion of protons in water probed by STM/S."
59. The 30th Chinese Chemical Society Annual Meeting. Dalian, China, July 1-4, 2016
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
60. International Workshop on Chemical Reactions under External Fields, Xiamen, China, April 2-5, 2016
Invited talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
61. American Physics Society March Meeting. Baltimore, Maryland, USA, March 14-18, 2016
Invited talk, "High-resolution imaging and spectroscopy of interfacial water at single bond limit."
62. The 1st Sino-German Young Scientist Symposium on Structures & Dynamics at Surfaces, Beijing, China, Nov. 5-9, 2015.
Invited talk, "How quantum is the hydrogen bond?"
63. The 1st IOP Young Researchers Meeting On Emerging phenomena of condensed matter

- physics: an atomic perspective, Beijing, China, October 23-24, 2015.
- Invited talk**, “Tip-enhanced inelastic electron tunneling spectroscopy.”
64. 18th National Conference on Light Scattering, Chengdu, China, Oct. 22-25, 2015.
- Plenary talk**, “Inelastic electron tunneling spectroscopy (IETS) and its applications in hydrogen-bonded systems.”
65. University of Chicago-Peking University Joint Workshop on Novel Quantum Matter, Beijing, China, Oct. 15-16, 2015.
- Invited talk**, “Probing nuclear quantum effects in water with SPM/S.”
66. The 2nd National Symposium on Surface Physical Chemistry. Dalian, China, Sep. 18-20, 2015.
- Invited talk**, “Probing quantum nuclear effects in water by inelastic electron tunneling spectroscopy (IETS).”
67. The 5th Joint ICQ Annual Workshop, Hefei, China, August 13-15, 2015.
- Invited talk**, “Tip-enhanced inelastic electron tunneling spectroscopy.”
68. IMPRS-PKU Workshop on Condensed Matter Science, Max Plank Institute for Solid State Research, Stuttgart, Germany, July 13-17, 2015.
- Invited talk**, “Probing nuclear quantum effects in water with SPM/S.”
69. The 15th International Conference on Vibrations at Surfaces, San Sebastian, Spain, June 22-26, 2015.
- Invited talk**, “Probing nuclear quantum effects in water with scanning tunneling microscopy and spectroscopy.”
70. AVS 61st International Symposium & Exhibition, Baltimore, Maryland, Nov. 9-14, 2014.
- Invited talk**, “Probing the quantum nature of hydrogen bonds at single bond limit in interfacial water.”
71. Chinese Vacuum Society Fall Meeting. Guangzhou, China, Nov. 7-9, 2014.
- Invited talk**, “Probing nuclear quantum effects in interfacial water.”
72. The 4th International Workshop on Quantum Energy, Chengdu, China, Oct. 14-17, 2014
- Invited talk**, “Visualizing quantum nuclear effect in H-bonded water.”
73. The 1st Asia-Pacific Symposium on Solid Surfaces, Vladivostok, Russia, Sep. 28-Oct. 2, 2014
- Invited talk**, “Probing quantum nuclear effect in interfacial water.”
74. The 29th Chinese Chemical Society Annual Meeting. Beijing, China, Aug. 4-7, 2014.
- Invited talk**, “Peering into Interfacial Water with Submolecular Resolution.”
75. International Conference on Nanoscience + Technology (ICN+T), Vail, Colorado, USA, July 20-25, 2014
- Invited talk**, “Peering into Interfacial Water with Submolecular Resolution.”
76. International Conference on Water Sciences, Beijing, April 14-17, 2014
- Plenary talk**, “Visualization of the proton tunneling in cyclic ice nanoclusters.”
77. CQS Workshop “Quantum Physics in the Flatland”. The University of Texas, Austin, Mar. 1, 2014.
- Invited talk**, “Visualization of the proton tunneling in a H-bonded water nanocluster.”
78. National conference on nanoscience, surface science and graphene, Hong Kong, Dec. 20-22, 2013.
- Invited talk**, “Real-space studies of nuclear quantum effect in water clusters.”
79. Academic forum of quantum materials for graduates in the Mainland, Taiwan and Hong

- Kong, Beijing, China, Sep. 27-29, 2013.
Invited talk, “High-resolution imaging and spectroscopy of water-solid interface.”
80. The 1st National Symposium on Surface Physical Chemistry. Huangshan, China, Oct. 20-23, 2013.
Invited talk, “Submolecular imaging, manipulation and spectroscopy of interfacial water.”
81. Chinese Physical Society Fall Meeting. Xiamen, China, Sep. 12-15, 2013.
Invited talk, “Visualization of water-solid interfaces with submolecular resolution.”
82. The 3rd ICQ (13th ICQS) Annual Workshop on Emerging Quantum Phenomena. Beijing, China, Jun. 10-11, 2013.
Invited talk, “Visualization of water-solid interfaces with submolecular resolution.”
83. Forum of Frontiers of Science & Technology: Basic Research of Water Science. Beijing, China, Jun. 4-5, 2013.
Invited talk, “Visualization of water-solid interfaces with submolecular resolution”
84. PKU-UT Austin Joint Workshop. Beijing, China, May 20&23, 2013.
Invited talk, “Submolecular imaging and manipulation in single molecules.”
85. Symposium on Correlated systems and Novel Quantum States. Beijing, China, Jan. 24-26, 2013.
Invited talk, “Visualizing and Manipulating Molecular Systems: from Single to 2D Lattice.”
86. Chinese Vacuum Society Fall Meeting. Lanzhou, China, Sep. 21-24, 2012.
Invited talk, “Visualizing bond-selective chemistry in single functionalized molecules.”
87. International Symposium of Emergent Electronic Materials and Devices. Chengdu, China, Jun. 23-28, 2012.
Invited talk, “Submolecular control, spectroscopy, and imaging of bond-selective chemistry in single molecules.”
88. PKU-Korea Univ. joint workshop on nanoscience and technology. Beijing, China, Dec. 16-17, 2011.
Invited talk, “Probing two-dimensional systems on the surfaces.”
89. Chinese Physical Society Fall Meeting. Hangzhou, China, Sep. 16-18, 2011.
Invited talk, “Controlling bond-selective chemistry in single functionalized molecules.”
90. Chinese Physical Society Fall Meeting. Tianjin, China, Sep. 16-19, 2010.
Invited talk, “Real-space imaging of Kondo screening in a two-dimensional Kondo lattice.”

Invited seminars/colloquiums/lectures:

1. SELF Gezhi Lundao Forum, Chinese Academy Sciences, Beijing, Jul. 30, 2020
TED talk, "Familiar but strange water world."
2. Modern Physics Laboratory, Tsinghua University, Beijing, Apr. 25, 2020
Seminar, "The eyes to peer into the quantum world: scanning tunneling microscopy"
3. College of Engineering and Applied Sciences, Nanjing University, China, Dec. 27, 2019
Functional Materials Forum, "Water science at atomic scale."
4. Peking University, Beijing, Dec. 7, 2019
Doctoral Supervisor Forum, "Being a doctoral supervisor for a decade"
5. College of Physics and Information Engineering, Hebei Normal University, China, Nov. 21, 2019
Seminar, "Water science at atomic scale."
6. College of Chemistry and Chemical Engineering, Xiamen University, China, Nov. 11, 2019
Seminar, "Water science at atomic scale."
7. National Synchrotron Radiation Laboratory, Hefei, China, Oct. 11, 2019
Seminar, "Water science at atomic scale."
8. Beijing Computational Science Research Center, China, Sep. 25, 2019
CSRC Lecture, "Probing the local dynamics with scanning tunneling microscope."
9. School of Advanced Materials, Peking University Shenzhen Graduate School, Sep. 18, 2019
Seminar, "Probing interfacial water with submolecular resolution."
10. School of Physics, Huazhong University of Science and Technology, Wuhan, China, Jun. 13, 2019
"Ge Wu" Forum, "Nuclear quantum effects at atomic scale."
11. Hunan University, Changsha, China, Mar. 27, 2019
"Yue Lu" Forum, "The ubiquitous but mysterious water."
12. IBS Center for Quantum Nanoscience, Seoul, South Korea, Feb. 15, 2019
Seminar, "Peering into interfacial water by scanning probe microscopy."
13. Department of Chemistry, National University of Singapore, Feb. 8, 2019
Seminar, "Visualizing interfacial water by non-contact atomic force microscopy."
14. Department of Physics, Tsinghua University, Beijing, China, Dec. 6, 2018
Colloquium, "Atomic-scale studies of nuclear quantum effects."
15. School of Physics, SUN YAT-SEN University, Guangzhou, China, Nov. 22, 2018
"Shuo-Hong Guo" Lecture, "High-resolution scanning probe microscopy of surface water."
16. College of Aerospace Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China, Sep. 28, 2018
Special Seminar, "Peering into the interfacial water by SPM: from single molecule to extended H-bonding network."
17. Department of Physics, Technical University München, München, Germany, Sep. 3, 2018
Seminar, "Peering into the interfacial water by SPM: from single molecule to extended H-bonding network."
18. School of Life Sciences, Peking University, Beijing, China, May 22, 2018
Seminar, "Experimental and theoretical studies of hydrated ions."
19. Electrochemical Energy Laboratory, Massachusetts Institute of Technology, March 15, 2018

- Special Seminar**, "Probing interfacial water at submolecular level by scanning probe microscopy."
20. PIM division, University of Nebraska-Lincoln, US, March 12, 2018
Seminar, "Probing interfacial water at submolecular level by scanning probe microscopy."
 21. Department of Physics, Fudan University, Shanghai, China, Dec. 12, 2017
Colloquium, "Ultrafast STM and the application in probing carrier dynamics."
 22. School of Physics and Technology, Wuhan University, Wuhan, China, Dec. 8, 2017
Seminar, "Ultrafast STM and the application in probing carrier dynamics."
 23. Department of Physics, Beijing Normal University, Beijing, China, Nov. 17, 2017
Seminar, "Ultrafast STM and its application in probing carrier dynamics."
 24. Hefei National Laboratory for Physical Sciences at the Microscale, Hefei, China, Nov. 9, 2017.
Seminar, "Ultrafast STM and its application in probing carrier dynamics."
 25. Department of Physics, The Chinese University of Hong Kong, June 30, 2017
Physics Colloquium, "Probing quantum motion of protons in interfacial water at atomic scale."
 26. Physical Chemistry I, Ruhr-University Bochum, Bochum, Germany, May 24, 2017
Seminar, "Nuclear quantum effects of interfacial water probed by STM/S."
 27. Department of Chemistry, Kyoto University, Japan, Jan. 26, 2017
Seminar, "Probing quantum nature of interfacial water at atomic scale."
 28. Institute of Molecular Science, Okazaki, Japan, Jan. 23, 2017
Colloquium, "Probing quantum nature of interfacial water at atomic scale."
 29. Department of Applied Physics, Osaka University, Japan, Jan. 23, 2017
Seminar, "Structure and dynamics of interfacial water: a combined study of STM and NC-AFM."
 30. Department of Chemistry, National University of Singapore, Dec. 12nd, 2016
Seminar, "Probing quantum nature of interfacial water at atomic scale."
 31. Department of Physics, Renmin University of China, Beijing, China, Sep. 21, 2016.
Seminar, "Quantum motion of protons in water probed by STM/S."
 32. Center for Chemistry at the Space-Time Limit (CaSTL), University of California, Irvine, USA, Mar. 10, 2016.
Seminar, "Structure and dynamics of hydration clusters probed by STM/NC-AFM."
 33. 5th SPECS SPM user meeting, Beijing, China, Sep. 07, 2015.
Special Lecture, "High-resolution imaging and spectroscopy of water with single bond precision"
 34. Institute of Physics, Chinese Academy of Sciences, Beijing, Aug. 20, 2015.
Seminar, "High-resolution imaging and spectroscopy of interfacial water at single bond limit."
 35. Swiss Federal Institute of Technology Zürich (ETH), Zürich, July 10, 2015.
Seminar, "Probing quantum nature of hydrogen bond with SPM/S."
 36. Swiss Federal Laboratories for Materials Science and Technology (EMPA), Zürich, July 09, 2015.
Seminar, "High-resolution imaging and spectroscopy of interfacial water at single bond limit."

37. Department of Chemistry, University of Liverpool, UK, July 08, 2015.
Seminar, “Probing quantum nature of hydrogen bond with SPM/S.”
38. College of Environmental Sciences and Engineering, Peking University, Beijing, China, May 05, 2015.
Special Seminar, “High-resolution imaging and spectroscopy of interfacial water.”
39. Department of Physics, Fudan University, Shanghai, China, Apr. 21, 2015.
Seminar, “Probing quantum nature of hydrogen bond with SPM.”
40. Lawrence Berkeley National Laboratory (LBNL), University of California, Berkeley, USA, Mar. 13, 2014.
Seminar, “Peering into interfacial water with submolecular resolution.”
41. Center for Chemistry at the Space-Time Limit (CaSTL), University of California, Irvine, USA, Mar. 10, 2014.
Seminar, “Peering into interfacial water with submolecular resolution.”
42. School of Physical Sciences, University of Science and Technology of China, Hefei, China, Aug. 19, 2013.
Seminar, “Visualization of water-solid interfaces with submolecular resolution.”
43. School of Physics, Peking University, Beijing, China, Apr. 25, 2013.
Special Seminar, “Submolecular imaging and control of single molecules.”
44. Department of Physics, Renmin University of China, Beijing, China, Mar. 20, 2012.
Seminar, “Visualizing the Kondo physics in low-dimensional molecular systems.”
45. The Institute of Physics, Chinese Academy of Sciences, Beijing, China, Oct. 10, 2011.
Seminar, “Probing two-dimensional (2D) systems on surfaces.”
46. Hefei National Laboratory for Physical Sciences at the Microscale, Hefei, China, July 08, 2011.
Seminar, “Probing two-dimensional (2D) systems on surfaces.”

Contributed talks in conferences/workshops/ symposiums:

1. 20th international Vacuum Congress, Busan, Korea, August 21-26, 2016
Contributed talk, "Tip-enhanced Inelastic Electron Tunneling Spectroscopy."
2. 19th International Conference on NC-AFM, Nottingham, UK, July 24-29, 2016
Contributed talk, "Structure and dynamics of interfacial water: a combined study of STM and NC-AFM."
3. American Physics Society March Meeting. San Antonio, Texas, USA, March 2–6, 2015
Contributed talk, "Probing the Hydrogen Bond Strength at Single Bond Limit."
4. American Physics Society March Meeting. Denver, Colorado, USA, March 3-7, 2014
Contributed talk, "Real-space imaging of interfacial water with submolecular resolution."
5. International Conference on Nanoscience and Technology. Paris, France, July 23-27, 2012.
Contributed talk, "Visualizing the Kondo physics in a two-dimensional molecular Kondo lattice."
6. American Physics Society March Meeting. Boston, Massachusetts, USA, Feb. 27-Mar. 2, 2012.
Contributed talk, "Selective vibration-Kondo coupling in a single O₂ molecule."
7. American Physics Society March Meeting. Dallas, Texas, USA, Mar. 21-25, 2011.
Contributed talk, "Real-space imaging of Kondo Screening in a two-dimensional Kondo lattice."
8. American Vacuum Society 56th International Symposium. San Jose, CA, USA, Nov. 8-13, 2009.
Contributed talk, "Stepwise control and spectroscopic manifestation of single bond dissociation and formation."
9. Germany Physical Society Spring Meeting. Regensburg, Germany, Mar. 26-30, 2007.
Contributed talk, "Thickness engineering of Al thin films by alternation of dense and diluted atomic layers."
10. Chinese Physical Society Fall Meeting. Nanjing, China, Sep. 18-20, 2007.
Contributed talk, "Quantum size effect (QSE) induced nonmetal to metal transition in 2D Al islands."
11. Doctoral Forum of China in Physics. Beijing, China, 2006.
Contributed poster, "Self-organized thickness engineering of Al thin films by alternation of dense and diluted atomic layers."
12. Chinese Physical Society Fall Meeting. Wuhan, China, Sep. 18-20, 2005.
Contributed talk, "Interface effect of Al thin films on the Si(111)- $\sqrt{3}\times\sqrt{3}$ -Al phase."