

Wei Wang, Professor

Vice Dean, School of Chemistry and Chemical Engineering, State Key Lab of Analytical Chemistry for Life Science, Nanjing University, Nanjing, Jiangsu 210023, P. R. China

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Research Interests

We are committed to developing advanced molecular spectroscopy, optical and electrochemical sensors, and optical microscopy, for studying chemical and biological processes of single cells, single molecules and single nanoparticles. Particular interests are given to 1) molecular spectroscopy-based sensing and imaging, 2) electrochemical sensors, nanoelectrochemistry and electrochemical microscopy; 3) single molecule/cell detection and imaging; and 4) single nanoparticles as nanosensors for biological and chemical detections. Active studies are based on the following spectroscopy and microscopy techniques in our current toolbox, that are fluorescence, chemiluminescence, surface plasmon resonance, dark-field scattering, colorimetric, Raman scattering and photothermal techniques.

Education

- 2004.07 – 2009.01 **University of Science and Technology of China (USTC)**
Ph.D. Electrochemiluminescence, sensors, molecular spectroscopy
Dissertation: Synthesis, characterizations and properties of functionalized gold nanomaterials and their applications in chemiluminescence sensing
- 2000.09 – 2004.07 **University of Science and Technology of China (USTC)**
B.S. Chemometrics
Thesis: Applications of independent component analysis in chemometrics

Professional Development

- 2019.08 – present: Vice Dean, School of Chemistry and Chemical Engineering, Nanjing University
- 2014.01 – present: Professor, School of Chemistry and Chemical Engineering, Nanjing University
- 2013.01 – 2013.12: Assistant Research Professor, Biodesign Institute, Arizona State University
- 2009.11 – 2012.12: Postdoctoral Fellow, Biodesign Institute, Arizona State University

Awards and Honors

- (2021) Electrochemistry Youth Award, Chinese Chemical Society (CCS)
- (2020) Jiangsu Youth Science and Technology Award, Jiangsu Province
- (2020) Particuology Youth Award, Chinese Society of Particuology (CSP)
- (2019) Distinguished Young Scholars, National Natural Science Foundation of China (NSFC)
- (2018) Shuang-Chuang Team Leadership Award, Jiangsu Province
- (2017) Young Chemist Award, Chinese Chemical Society (CCS)
- (2016) J. Phys. Chem. Young Researcher Oral Presentation Award, 26th IUPAC Photochemistry

- (2015) Shuang-Chuang Award, Jiangsu Province
- (2015) Excellent Young Scholars, National Natural Science Foundation of China (NSFC)
- (2013) Thousand Young Talents Program
- (2008) Zhuliyuehua Scholarship, Chinese Academic of Sciences (CAS)
- (2007) Zhang Maosen Honorary Scholarship, USTC
- (2004) The First Prize of National Scholarship, Ministry of Education (MOE)

Selected Publications

20. Shasha Liu, Kai Zhou, Tinglian Yuan, Wenrui Lei, Hong-Yuan Chen, Xin-Yi Wang, Wei Wang*, Imaging the thermal hysteresis of single spin crossover nanoparticles, **J. Am. Chem. Soc.**, 2020, 142, 15852-15859.
19. Wei Wei, Tinglian Yuan, Wenxuan Jiang, Jia Gao, Hong-Yuan Chen, Wei Wang*, Accessing the electrochemical activity of single nanoparticles by eliminating the heterogeneous electrical contacts, **J. Am. Chem. Soc.**, 2020, 142, 14307-14313.
18. Hua Su, Ben Niu, Haoran Li, Fei Liu, Tinglian Yuan, Hong-Yuan Chen, Wei Wang*, Evanescent Wave-guided Growth of Organic Supramolecular Nanowire Array, **Angew. Chem. Int. Ed.**, 2020, 59, 19209-19214.
17. Jing Chen, Kai Zhou, Yongjie Wang, Jia Gao, Tinglian Yuan, Jie Pang, Shu Tang, Hong-Yuan Chen, Wei Wang*, Measuring the activation energy barrier for the nucleation of single nanosized vapor bubbles, **Proc. Natl. Acad. Sci. USA**, 2019, 116, 12678-12683.
16. Yingyan Jiang, Hua Su, Wei Wei, Yongjie Wang, Hong-Yuan Chen, Wei Wang*, Tracking the rotation of single CdS nanorods during photocatalysis with surface plasmon resonance microscopy, **Proc. Natl. Acad. Sci. USA**, 2019, 116, 6030-6034.
15. Meng Li, Tinglian Yuan, Yingyan Jiang, Linlin Sun, Wei Wei, Hong-Yuan Chen, Wei Wang*, Total Internal Reflection-based Extinction Spectroscopy of Single Nanoparticles, **Angew. Chem. Int. Ed.**, 2019, 58, 572-576.
14. Wei Wang*, Staining a porous catalyst, **Nature Chem.**, 2019, 11, 17-18. (Invited News and Views)
13. Yingyan Jiang, Wei Wang*, Point Spread Function of Objective-based Surface Plasmon Resonance Microscopy, **Anal. Chem.**, 2018, 90, 9650-9656
12. Tao Liu, Meng Li, Yongjie Wang, Yimin Fang, Wei Wang*, Electrochemical impedance spectroscopy of single Au nanorods, **Chem. Sci.**, 2018, 9, 4424-4429.
11. Wei Wang*, Imaging the chemical activity of single nanoparticles with optical microscopy, **Chem. Soc. Rev.**, 2018, 47, 2485-2508.
10. Hua Su, Yimin Fang, Fangyuan Chen, Wei Wang*, Monitoring the dynamic photocatalytic activity of single CdS nanoparticles by lighting up H₂ nanobubbles with fluorescent dyes, **Chem. Sci.**, 2018, 9, 1448-1453.
9. Yimin Fang, Zhimin Li, Yingyan Jiang, Xian Wang, Hong-Yuan Chen, Nongjian Tao, Wei Wang*, Intermittent photocatalytic activity of single CdS nanoparticles, **Proc. Natl. Acad. Sci. USA**, 2017, 114, 10566-10571.

8. Dan Jiang, Yingyan Jiang, Zhimin Li, Tao Liu, Xiang Wo, Yimin Fang, Nongjian Tao, Wei Wang*, Hong-Yuan Chen, Optical imaging of phase transition and Li-ion diffusion kinetics of single LiCoO₂ nanoparticles during electrochemical cycling, *J. Am. Chem. Soc.*, 2017, 139, 186-192.
7. Meisam Hasheminejad, Yimin Fang, Meng Li, Yingyan Jiang, Wei Wang*, Hong-Yuan Chen, Plasmonic Imaging of the Interfacial Potential Distribution on Bipolar Electrodes, *Angew. Chem. Int. Ed.*, 2017, 56, 1629-1633.
6. Linlin Sun, Yimin Fang, Zhimin Li, Wei Wang*, Hong-Yuan Chen*, Simultaneous optical and electrochemical recording of single nanoparticle electrochemistry, *Nano Res.*, 2017, 5, 1740-1748.
5. Yimin Fang, Shan Chen, Wei Wang*, Xiaonan Shan*, Nongjian Tao, Real time monitoring of phosphorylation kinetics with self-assembled nano-oscillators, *Angew. Chem. Int. Ed.*, 2015, 54, 2538-2542.
4. Yimin Fang, Wei Wang*, Xiang Wo, Yashuang Luo, Shaowei Yin, Yixian Wang, Xiaonan Shan, Nongjian Tao*, Plasmonic Imaging of Electrochemical Oxidation of Single Nanoparticles, *J. Am. Chem. Soc.*, 2014, 136, 12584-12587.
3. Wei Wang*, Nongjian Tao, Detection, Counting and Imaging of Single Nanoparticles, *Anal. Chem.*, 2014, 86, 2-14.
2. Wei Wang, Yunze Yang, Shaopeng Wang, Vinay J Nagaraj, Qiang Liu, Jie Wu and Nongjian Tao*, Label-free measuring and mapping of binding kinetics of membrane proteins in single living cells, *Nature Chem.*, 2012, 4, 846-853.
1. Wei Wang, Kyle Foley, Xiaonan Shan, Shaopeng Wang, Seron Eaton, Vinay J. Nagaraj, Peter Wiktor, Urmez Patel, Nongjian Tao*, Single cells and intracellular processes studied by a plasmonic-based electrochemical impedance microscopy, *Nature Chem.*, 2011, 3, 249-255.

Research Grants

8. NSFC-21925403, 2020 – 2024, 4 Million, PI
Chemical Measurements and Imaging of Single Nanoparticles
7. NSF-JS, 2019 – 2023, 3 Million, PI
Developing Advanced Optical Microscopy for Chemical Imaging
6. NSFC-21874070, 2019 – 2022, 0.7 Million, PI
Imaging the chemical activity of single enzyme-mimic nanoparticles
5. NSFC-21522503, 2016 – 2018, 1.5 Million, PI
Surface Plasmon Resonance Microscopy
4. NSFC-21527807, 2016 – 2020, 7.6 Million, Co-PI
Chemiluminescence/photothermal multimodal microscopy for studying catalytic reaction kinetics of single nanoparticles
3. NSFC-21405080, 2015 – 2017, 0.25 Million, PI
Monoclonal antibody drug investigations based on in situ drug-receptor binding kinetics
2. NSF-JC - BK20150013, 2015 – 2018, 1.0 Million, PI
Objective-based high-resolution surface plasmon resonance microscopy

1. Thousand Young Talents Program - 2013, 2014 – 2016, 3.0 Million, PI

Single Cell Analysis

Academic Services

2016.08 Visiting Professor, Hokkaido University, Japan

2018.05 Guest Editor of Special Issue, Analytical & Bioanalytical Chemistry

2018.01 Early Career Editorial Board, Chinese Chemical Letters

2019.08 Symposium Coordinator, 70th Annual Meeting of International Society of Electrochemistry

2019.01 Early Career Editorial Board, Chemical Research in Chinese Universities

2020.01 International Advisory Board, Analytical and Bioanalytical Chemistry

2020.05 Symposium Organizer, PacifiChem 2020

Presentations and invited talks

2021.08 The 18th International Symposium on Electroanalytical Chemistry, Changchun, China

2021.07 Southeastern University, Nanjing, China (Host: Prof. Yuanjian Zhang)

2021.06 Virtual International Conference, Probing Chemical Reactions by Spectroscopy, USA

2021.04 Shandong Normal University, Jinan, China (Host: Prof. Chunyang Zhang)

2020.12 Hunan Normal University, Changsha, China (Host: Prof. Ronghua Yang)

2020.11 ElecNano-9 (Paris), online symposium, France

2020.08 American Chemical Society Fall Virtual Meeting, online symposium, USA

2019.10 National Meeting on Light Scattering, Suzhou, China

2019.10 National Meeting of Chinese Electrochemical Society, Changsha, China

2019.10 Beijing Conference & Exhibition on Instrumental Analysis, Beijing, China

2019.09 China Pharmaceutical University (Host: Prof. Chen Wang)

2019.09 Anhui Polytech University (Host: Prof. Yongping Dong)

2019.09 Annual Meeting of Chinese Society of Nanobubbles (Plenary Talk), Tianjin, China

2019.08 2019 Sino-France Workshop on New Nanostructured Materials, Changchun, China

2019.05 Southwestern University of Science and Technology, Mianyang, China (Host: Prof. Yi He)

2019.03 International Bunsen Meeting on Single Molecule Chemistry, Odenwald, Germany

2019.03 Saarland University, Germany (Host: Prof. Gregor Jung)

2019.03 Lund University, Sweden (Host: Prof. Ivan Scherblykin)

2018.12 East China Normal University, Shanghai, China (Host: Prof. Yang Tian)

2018.10 Suzhou Institute of Nanoscience and Nanotechnology, Suzhou (Host: Prof. Xiaochun Zhou)

2018.10 The 4th International Symposium on Nanobubbles, Suzhou, China

2018.10 China-France Bilateral Workshop on Electrochemistry, Nanjing, China

2018.10 Nankai University, Tianjin, China (Host: Prof. Xue-Guang Shao)

2018.08 The 256th National Meeting of American Chemical Society, Boston MI, USA

2018.06 The 13th National Meeting on Analytical Chemistry, Xi'an, China

2018.05 The 31st National Meeting of Chinese Chemical Society, Hangzhou, China

2018.01 Nanjing Normal University, Nanjing, China (Host: Prof. Zhi-Yuan Gu)

2018.01 Anhui Normal University, Wuhu, China (Host: Prof. Yun-Sheng Xia)

2017.12 International Conference on Surface Enhanced Raman Spectroscopy, Xiamen, China
2017.12 Wuhan University of Science and Technology, Wuhan, China (Host: Prof. Feng Liang)
2017.12 Institute of Chemistry, CAS (Host: Prof. Ping Yu)
2017.10 Xi'an Jiaotong University, Xi'an, China (Host: Prof. Yong-Xi Zhao)
2017.08 The 4th Annual Meeting on Analytical Instruments, Nanjing, China
2017.08 The 69th Annual Meeting of International Society of Electrochemistry, Providence, RI, USA
2017.08 The 254th National Meeting of American Chemical Society, Washington DC, USA
2017.08 The 16th International Symposium on Electroanalytical Chemistry, Changchun, China
2017.05 International Congress on Analytical Chemistry 2017, Haikou, China
2017.05 Fudan University, Shanghai, China (Host: Prof. Dao-Yong Chen)
2017.04 Henan Normal University, Zhengzhou, China (Host: Prof. Hua Zhang)
2017.04 University of Science and Technology of China, Hefei, China (Host: Prof. Hua Cui)
2017.04 The 13th National Meeting on Electroanalytical Chemistry, Nanchang, China
2016.12 The 4th National Meeting on Analytical Chemistry for Life Science, Nanjing, China
2016.10 Hunan University, Changsha, China (Host: Prof. Zhou Nie)
2016.09 The 9th Cross-Strait Symposium on Analytical Chemistry, Taipei, China
2016.08 The 12th Nanjing University-Hokkaido University Symposium, Sapporo, Japan
2016.07 The 30th National Meeting of Chinese Chemical Society, Dalian, China
2016.06 Sino-US Nano Forum, Nanjing, China
2016.04 The 26th IUPAC conference on Photochemistry, Osaka, Japan
2016.01 Nanjing Normal University, Nanjing, China (Host: Prof. Cheng-Xin Cai)
2015.08 The 15th International Symposium on Electroanalytical Chemistry, Changchun, China
2015.05 The 12th National Meeting on Analytical Chemistry, Wuhan, China
2015.04 Chongqing Institute of Green and Intelligent Technology, CAS (Host: Prof. You-Peng Chen)
2014.08 The 29th National Meeting of Chinese Chemical Society, Beijing, China
2014.05 Nanjing Medical University, Nanjing, China (Host: Prof. Yun Chen)
2014.04 The 12th National Meeting on Electroanalytical Chemistry, Guilin, China
2013.08 Pittcon 2013, Philadelphia, USA
2012.03 The 243rd American Chemical Society Meeting, San Diego, USA
2010.08 The 5th Assay and Drug Discovery Technologies Conference, San Diego, USA
2009.08 The 12^h International Symposium on Electroanalytical Chemistry, Changchun, China
2008.07 The 15th International Symposium on Chemiluminescence and Bioluminescence, Shanghai
2007.08 The 11th International Symposium on Electroanalytical Chemistry, Changchun, China

Full list of publications

85. Hua Su, Wei Wang*, Dynamically monitoring the photodeposition of single cocatalyst nanoparticles on semiconductors via fluorescence imaging, *Anal. Chem.*, **2021**, 93, 11915-11919.
84. Yaohua Li, Sa Wang, Xinyu He, Shijun Li, Tianhua Zheng, Youpeng Chen*, Hua Cui*, Wei Wang*, Imaging the oxygen wave with a single bioluminescent bacterium, *Chem. Sci.*, **2021**, in press.

83. Jia Gao, Hua Su*, Wei Wang*, A microwell array-based approach for studying single nanoparticle catalysis with high turnover frequency, *J. Chem. Phys.*, **2021**, 155, 071101. (Invited Contribution, selected as a Featured Article, and received highlight from AIP Scilight).
82. Wenxuan Jiang, Wei Wei, Tinglian Yuan, Shasha Liu, Ben Niu, Hui Wang*, Wei Wang*, Tracking the optical mass centroid of single electroactive nanoparticles reveals electrochemically inactive zone, *Chem. Sci.*, **2021**, 12, 8556-8562.
81. Kai Zhou, Tinglian Yuan, Hua Su*, Wei Wang*, Accessing the spatiotemporal heterogeneities of single nanocatalysts by optically imaging gas nanobubbles, *Curr. Opin. Colloid Interf. Sci.*, **2021**, 55, 101465 (Invited Contribution).
80. Tinglian Yuan, Wei Wei, Wenxuan Jiang, Wei Wang*, Vertical diffusion of ions within single particles during electrochemical charging, *ACS Nano*, **2021**, 15, 3522-3528.
79. Yongjie Wang, Tinglian Yuan, Hua Su, Kai Zhou, Linliang Yin, Wei Wang*, A bubble-STORM approach for super-resolved imaging of nucleation sites in hydrogen evolution reactions, *ACS Sensors*, **2021**, 6, 380-386
78. Shasha Liu, Kai Zhou, Tinglian Yuan, Wenrui Lei, Hong-Yuan Chen, Xin-Yi Wang, Wei Wang*, Imaging the thermal hysteresis of single spin crossover nanoparticles, *J. Am. Chem. Soc.*, **2020**, 142, 15852-15859.
77. Wei Wei, Tinglian Yuan, Wenxuan Jiang, Jia Gao, Hong-Yuan Chen, Wei Wang*, Accessing the electrochemical activity of single nanoparticles by eliminating the heterogeneous electrical contacts, *J. Am. Chem. Soc.*, **2020**, 142, 14307-14313.
76. Hua Su, Ben Niu, Haoran Li, Fei Liu, Tinglian Yuan, Hong-Yuan Chen, Wei Wang*, Evanescent Wave - guided Growth of Organic Supramolecular Nanowire Array, *Angew. Chem. Int. Ed.*, **2020**, 59, 19209-19214.
75. 周恺、吕梦琦、王伟*, 基于纳米气泡的化学测量, *中国科学: 化学*, **2020**, 50, 603-611.
74. Yi-Lun Ying, Jiajun Wang, Anna Rose Leach, Ying Jiang, Rui Gao, Cong Xu, Martin A. Edwards, Andrew D. Pendergast, Hang Ren, Connor K. Terry Weatherly, Wei Wang*, Paolo Actis*, Lanqun Mao*, Henry S. White*, Yi-Tao Long*, Single-entity electrochemistry at confined sensing interfaces, *Science China Chemistry*, **2020**, 63, 589-618.
73. Jing Chen, Kai Zhou, Yongjie Wang, Jia Gao, Tinglian Yuan, Jie Pang, Shu Tang, Hong-Yuan Chen, Wei Wang*, Measuring the activation energy barrier for the nucleation of single nanosized vapor bubbles, *Proc. Natl. Acad. Sci. USA*, **2019**, 116, 12678-12683
72. Jia Gao, Xiang Wo, Yongjie Wang, Minghe Li, Chunyuan Zhou, Wei Wang*, A post-recording pixel-reconstruction approach for correcting the lateral drifts in surface plasmon resonance microscope, *Anal. Chem.*, **2019**, 91, 13620-13626.
71. Yongjie Wang, Yingyan Jiang, Wei Wang*, Determining the sub-nanometer thickness of water-depletion layer at the interface between water and hydrophobic substrate, *Anal. Chem.*, **2019**, 91, 11696-11702.
70. Shasha Liu, Tinglian Yuan, Wei Wei, Hua Su, Wei Wang*, Photoassisted electrochemical micropatterning of gold film, *Anal. Chem.*, **2019**, 91, 9413-9418
69. Linlin Sun, Wei Wang*, Hong-Yuan Chen*, Correlated Optical Imaging and Electrochemical Recording for Studying Single Nanoparticle Collisions, *J. Electrochem.*, **2019**, 25, 386-399. (Invited Review)

68. Weijun Kong, Qi Li, Wei Wang*, Xiaoning Zhao, Shenglong Jiang, Tianhua Zheng, Qun Zhang, Wen Shen, Hua Cui*, Rational design of functional materials guided by single particle chemiluminescence imaging, *Chem. Sci.*, **2019**, 10, 5444-5451. (selected as inside front cover)
67. Tao Liu, Shasha Liu, Wenxuan Jiang, Wei Wang*, Tracking sub-nanometer shift in the scattering centroid of single gold nanorods during electrochemical charging, *ACS Nano*, **2019**, 13, 6279-6286.
66. Yongjie Wang, Jing Chen, Yingyan Jiang, Xian Wang, Wei Wang*, Label-free optical imaging of the dynamic stick-slip and migration of single sub-100nm surface nanobubbles: A super-localization approach, *Anal. Chem.*, **2019**, 91, 4665-4671.
65. Yingyan Jiang, Hua Su, Wei Wei, Yongjie Wang, Hong-Yuan Chen, Wei Wang*, Tracking the rotation of single CdS nanorods during photocatalysis with surface plasmon resonance microscopy, *Proc. Natl. Acad. Sci. USA*, **2019**, 116, 6630-6634.
64. Meng Li+, Tinglian Yuan+, Yingyan Jiang, Linlin Sun, Wei Wei, Hong-Yuan Chen, Wei Wang*, Total Internal Reflection-based Extinction Spectroscopy of Single Nanoparticles, *Angew. Chem. Int. Ed.*, **2019**, 58, 572-576. (hot paper, inside back cover)
63. Wei Wang*, Staining a porous catalyst, *Nature Chem.*, **2019**, 11, 17-18. (News and Views)
62. Yingyan Jiang, Wei Wang*, Point Spread Function of Objective-based Surface Plasmon Resonance Microscopy, *Anal. Chem.*, **2018**, 90, 9650-9656.
61. Linlin Sun, Wei Wang*, Hong-Yuan Chen*, Dynamic nanoparticle-substrate contacts regulate multi-peak behavior of single silver nanoparticle collisions, *ChemElectroChem*, **2018**, 5, 2995-2999.
60. Teng-Fei Ma, You-Peng Chen*, Jin-Song Guo, Wei Wang, Fang Fang, Cellular analysis and detection using surface plasmon resonance imaging, *TrAC- Trend. Anal. Chem.*, **2018**, 103, 102-109.
59. Meng Li, Shasha Liu, Yingyan Jiang, Wei Wang*, Visualizing the zero-potential line of bipolar electrodes with arbitrary geometry, *Anal. Chem.*, **2018**, 90, 6390-6396.
58. Yu-Wen Su*, Wei Wang*, Surface plasmon resonance sensing: from purified biomolecules to intact cells. *Anal. Bioanal. Chem.*, **2018**, 410, 3943-3951.
57. Tao Liu, Meng Li, Yongjie Wang, Yimin Fang, Wei Wang*, Electrochemical impedance spectroscopy of single Au nanorods, *Chem. Sci.*, **2018**, 9, 4424-4429.
56. Wei Wang*, Imaging the chemical activity of single nanoparticles with optical microscopy. *Chem. Soc. Rev.*, **2018**, 47, 2485-2508. DOI: 10.1039/C7CS00451F.
55. Liang Yuan, Meng Li, Tinglian Yuan, Yimin Fang, Wei Wang*, In operando imaging of self-catalyzed formaldehyde burst in methanol oxidation reactions under open circuit conditions. *Chem. Sci.*, **2018**, 9, 3318-3323. DOI: 10.1039/C7SC05347A.
54. Hua Su, Yimin Fang, Fangyuan Chen, Wei Wang*, Monitoring the dynamic photocatalytic activity of single CdS nanoparticles by lighting up H₂ nanobubbles with fluorescent dyes, *Chem. Sci.*, **2018**, 9, 1448-1453. DOI: 10.1039/C7SC04684G (inside back cover)
53. Yating Liu, Wen Shen, Qi Li, Jiangnan Shu, Lingfeng Gao, Mingming Ma, Wei Wang, Hua Cui*, Firefly-mimicking intensive and long-lasting chemiluminescence hydrogels, *Nature Commun.*, **2017**, 1003. DOI:10.1038/s41467-017-01101-6

52. Dan Jiang, Linlin Sun, Tao Liu, Wei Wang*, Thin-film Electrochemistry of Single Prussian Blue Nanoparticles Revealed by Surface Plasmon Resonance Microscopy, *Anal. Chem.*, **2017**, 89, 11641-11647. DOI: 10.1021/acs.analchem.7b03061
50. Yimin Fang, Zhimin Li, Yingyan Jiang, Xian Wang, Hong-Yuan Chen, Nongjian Tao, Wei Wang*, Intermittent photocatalytic activity of single CdS nanoparticles, *Proc. Natl. Acad. Sci. USA*, **2017**, 114, 10566-10571. DOI: 10.1073/pnas.1708617114
49. 王咏婕, 王伟*, 基于光学显微术的单粒子传感 (Single Nanoparticle Sensing Based on Optical Microscopy), *化学学报*, **2017**, 75, 1061-1070. DOI: 10.6023/A17070342
48. Xianwei Liu, Yunze Yang, Wei Wang, Shaopeng Wang, Ming Gao, Jie Wu, Nongjian Tao*, Plasmonic-Based Electrochemical Impedance Imaging of Electrical Activities in Single Cells, *Angew. Chem. Int. Ed.*, **2017**, 56, 8855-8859. DOI: 10.1002/anie.201703033
47. Zhimin Li, Yimin Fang, Yongjie Wang, Yingyan Jiang, Tao Liu, Wei Wang*, Visualizing the bi-directional electron transfer in a Schottky junction consisted of single CdS nanoparticles and a planar gold film, *Chem. Sci.*, **2017**, 8, 5019-5023. DOI: 10.1039/C7SC00990A
46. Linlin Sun, Dan Jiang, Meng Li, Tao Liu, Liang Yuan, Wei Wang*, Hong-Yuan Chen*, Collision and Oxidation of Single LiCoO₂ Nanoparticles Studied by Correlated Optical Imaging and Electrochemical Recording, *Anal. Chem.*, **2017**, 89, 6050-6055. DOI: 10.1021/acs.analchem.7b00649
45. Meisam Hasheminejad, Yimin Fang, Meng Li, Yingyan Jiang, Wei Wang*, Hong-Yuan Chen, Plasmonic Imaging of the Interfacial Potential Distribution on Bipolar Electrodes, *Angew. Chem. Int. Ed.*, **2017**, 56, 1629-1633. DOI: 10.1002/anie.201611235
44. Dan Jiang, Yingyan Jiang, Zhimin Li, Tao Liu, Xiang Wo, Yimin Fang, Nongjian Tao, Wei Wang*, Hong-Yuan Chen, Optical imaging of phase transition and Li-ion diffusion kinetics of single LiCoO₂ nanoparticles during electrochemical cycling, *J. Am. Chem. Soc.*, **2017**, 139, 186-192. DOI: 10.1021/jacs.6b08923
43. Liang Yuan, Nongjian Tao, Wei Wang*, Plasmonic Imaging of Electrochemical Impedance, *Ann. Rev. Anal. Chem.*, **2017**, 10, 183-200. DOI: 10.1146/annurev-anchem-061516-045150
42. Linlin Sun, Yimin Fang, Zhimin Li, Wei Wang*, Hong-Yuan Chen*, Simultaneous optical and electrochemical recording of single nanoparticle electrochemistry, *Nano Res.*, **2017**, 5, 1740-1748. DOI: 10.1007/s12274-017-1439-0
41. Peng Zhang, You-Peng Chen*, Wei Wang, Yu Shen, Jin-Song Guo, Surface plasmon resonance for water pollutant detection and water process analysis, *TrAC - Trend. Anal. Chem.*, **2016**, 85, 153-165. DOI: 10.1016/j.trac.2016.09.003
40. Yimin Fang, Hui Wang, Hui Yu, Xianwei Liu, Wei Wang*, Hong-Yuan Chen*, Nongjian Tao*, Plasmonic Imaging of Electrochemical Reactions of Single Nanoparticles, *Acc. Chem. Res.*, **2016**, 49, 2614-2624. DOI: 10.1021/acs.accounts.6b00348
39. Jin Lu, Yunze Yang, Wei Wang, Jinghong Li, Nongjian Tao*, Shaopeng Wang*, Label-Free Imaging of Histamine Mediated G Protein-Coupled Receptors Activation in Live Cells, *Anal. Chem.*, **2016**, 88, 11498-11503. DOI: 10.1021/acs.analchem.6b02677
38. Xiang Wo, Zhimin Li, Yingyan Jiang, Minghe Li, Yu-wen Su, Wei Wang*, Nongjian Tao, Determining the Absolute Concentration of Nanoparticles without Calibration Factor by Visualizing the Dynamic Processes of Interfacial Adsorption, *Anal. Chem.*, **2016**, 88, 2380-2385.

DOI: 10.1021/acs.analchem.5b04386

37. Liang Yuan, Xian Wang, Yimin Fang, Chenbin Liu, Dan Jiang, Xiang Wo, Wei Wang*, Hong-Yuan Chen, Digitizing Gold Nanoparticle-Based Colorimetric Assay by Imaging and Counting Single Nanoparticles, *Anal. Chem.*, **2016**, 88, 2321-2326. DOI: 10.1021/acs.analchem.5b04244
36. 袁婷联; 蒋莹琰; 王伟*. 光热显微术: 基于光吸收的单分子成像技术. 化学进展, **2016**, 28, 607-616. (Photothermal Microscopy: An Absorption-Based Single Molecule Imaging Technology) DOI: 10.7536/pc160111
35. Xiang Wo, YashuangLuo, Nongjian Tao, Wei Wang*, Hong-Yuan Chen, Measuring the Number Concentration of Arbitrarily-shaped Gold Nanoparticles with Surface Plasmon Resonance Microscopy, *Science China Chemistry*, **2016**, 59, 843-847. DOI: 10.1007/s11426-015-0521-3
34. JiangnanShu, Wei Wang, Hua Cui*, Direct electrochemiluminescence of gold nanoparticles bifunctionalized by luminol analogue-metal complexes in neutral and alkaline media, *Chem. Commun.*, **2015**, 51, 11366-11369. DOI: 10.1039/C5CC03104D
33. Fenni Zhang, Shaopeng Wang*, Linliang Yin, Yunze Yang, Yan Guan, Wei Wang, Han Xu, Nongjian Tao*, Quantification of Epidermal Growth Factor Receptor Expression Level and Binding Kinetics on Cell Surfaces by Surface Plasmon Resonance Imaging, *Anal. Chem.*, **2015**, 87, 9960-9965. DOI: 10.1021/acs.analchem.5b02572
32. Wei Wang*, The Rising of Microscopic Electrochemistry: "Watching" the Local Electron Transfer Optically, *Sci. Bull.*, **2015**, 60, 1866-1867. DOI: 10.1007/s11434-015-0915-8
31. Yunze Yang, Hui Yu, Xiaonan Shan, Wei Wang, Xianwei Liu, Shaopeng Wang, Nongjian Tao*, Label-Free Tracking of Single Organelle Transportation in Cells with Nanometer Precision Using a Plasmonic Imaging Technique, *Small*, **2015**, 2878-2884. DOI: 10.1002/smll.201403016
30. Linliang Yin, Yunze Yang, Shaopeng Wang, Wei Wang*, Shengtao Zhang*, Nongjian Tao*, Measuring binding kinetics of antibody-conjugated gold nanoparticles with intact cells, *Small*, **2015**, 11, 3782-3788. DOI: 10.1002/smll.201500112
29. Yimin Fang, Shan Chen, Wei Wang*, Xiaonan Shan*, Nongjian Tao, Real time monitoring of phosphorylation kinetics with self-assembled nano-oscillators, *Angew. Chem. Int. Ed.*, **2015**, 54, 2538-2542. DOI: 10.1002/anie.201411040
28. Linliang Yin, Wei Wang*, Shaopeng Wang, Fenni Zhang, Shengtao Zhang*, Nongjian Tao*, How does fluorescent labeling affect the binding kinetics of proteins with intact cells?, *Biosens. Bioelectron.*, **2015**, 66, 412-416. DOI: 10.1016/j.bios.2014.11.036
27. Wei Wang, Linliang Yin, Laura Gonzalez, Shaopeng Wang, Xiaobo Yu, Seron Eaton, Shengtao Zhang, Hong-Yuan Chen*, Joshua LaBaer*, Nongjian Tao*, In situ drug-receptor binding kinetics in single cells: a quantitative label-free study of anti-tumor drug resistance, *Scientific Reports*, **2014**, 4, 6609. DOI: 10.1038/srep06609
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