

PENG ZOU, Ph.D.

Tenure-track Assistant Professor, Department of Chemical Biology
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EDUCATION

- 2007-2012 Ph.D. in Biological Chemistry
Department of Chemistry
Massachusetts Institute of Technology, Cambridge, MA 02139, USA
- 2003-2007 B.S. in Chemistry and in Physics
College of Chemistry and Molecular Engineering
Peking University, Beijing, 100871, China
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PROFESSIONAL APPOINTMENTS

- 2020-now Junior Investigator
Chinese Institute of Brain Research, Beijing, China
- 2015-now Assistant Professor (Tenure-track)
College of Chemistry and Molecular Engineering, Peking University, China
Principal Investigator
Synthetic and Functional Biomolecules Center, Peking University, China
PKU-Tsinghua Center for Life Sciences, Peking University, China
PKU-IDG/McGovern Institute for Brain Research, Peking University, China
- 2013-2015 Postdoctoral Fellow
Department of Chemistry and Chemical Biology
Harvard University, Cambridge, MA 02138, USA
Advisor: Dr. Adam E. Cohen
- 2007-2012 Graduate Research Assistant
Department of Chemistry
Massachusetts Institute of Technology, Cambridge, MA 02139, USA
Advisor: Dr. Alice Y. Ting
- 2005-2007 Undergraduate Research Assistant
College of Chemistry and Molecular Engineering, Peking University, China
Advisor: Dr. Bin Xia

HONORS AND AWARDS

- 2020 Bayer Investigator Award, Peking University
- 2020 Teaching Excellence Award, Peking University
- 2020 OKeanos-CAPA Young Investigator Award at the Chemical and Biology interface, CAPA
- 2019 Luye Eminent Young Scholar Fellowship, Peking University
- 2019 C&EN's Talented 12 Award, Chemical & Engineering News
- 2019 Oral Presentation Award, Chinese Society of Biochemistry and Molecular Biology
- 2016 CNHUPO Young Investigator Presentation Award, China Human Proteome Organization
- 2016 The "1000 Talents" Young Investigator Award, Chinese Government
- 2011 CSHA Fellowship, Cold Spring Harbor Laboratory Asia
- 2008 Lewis Paul Chapin Fellowship, MIT
- 2008 Department of Chemistry Outstanding Teaching Award, MIT
- 2005 President's Undergraduate Research Fellowship, Peking University
- 2005 Wu Si Scholarship, Peking University
- 2004 Xiang Lu Scholarship, Peking University
- 2003 Freshman Scholarship, Peking University
- 2003 Gold medalist, Chinese Chemistry Olympiad
- 2003 Silver medalist, Chinese Mathematics Olympiad

RESEARCH GRANTS**On-going:**

- 2021-2025 System-oriented Research on Multidimensions of the Proteome, National Natural Science Foundation of China (32088101), RMB 6,000,000, co-PI.
- 2018-2023 Chemical labeling and functional manipulations of protein glycosylation, Ministry of Science and Technology of China (2018YFA0507600), RMB 2,400,000, co-PI.
- 2018-2022 An optical-electrical integrated bioimaging system with ultrahigh spatial and temporal resolutions, National Natural Science Foundation of China (21727806), RMB 900,000, co-PI.
- 2018-2020 Protein labeling technique for profiling nascent synaptic proteome, Beijing Municipal Natural Science Foundation (5182011), RMB 200,000, PI.
- 2018-2020 Spatiotemporally-resolved detection of protein lipidation, National Natural Science Foundation of China (91753131), RMB 700,000, PI.
- 2017-2022 Study of centromere protein machinery and the molecular mechanism of cell fate determination, Ministry of Science and Technology of China (2017YFA0503600), RMB 2,400,000, co-PI.
- 2017-2020 Development of fluorescent voltage sensors and their application in the mechanistic study of neuronal signaling, National Natural Science Foundation of China (21673009), RMB 680,000, PI.

PROFESSIONAL SOCIETY AFFILIATIONS**Membership**

2020-now	Member, Chinese-American Chemistry and Chemical Biology Professors Association
2014-now	Member, Chinese Chemical Society
2007-now	Member, American Chemical Society

Editorial activities

2019-now	Deputy Editor, University Chemistry
2017-now	Editorial Board, Chinese Chemical Letters

NATIONAL AND INTERNATIONAL MEETING ORGANIZERS AND SESSION CHAIRS

2020/01	PKU-UCSD Bilateral Symposium, La Jolla, CA, USA, Session Chair
2019/10	2019 PKU-SFBC Symposium, Beijing, China, Session Chair
2018/12	HKU Chemical Biology Symposium, Hong Kong, China, Session Chair
2018/08	The 5th Asian Chemical Biology Conference, Xi'an, China, Session Chair
2014/09	Symposium on Fluorescent Proteins and Biological Sensors, HHMI Janelia Farm Research Campus, Virginia, USA, Session Chair

TEACHING ACTIVITIES

2019-now	Chemical Biology Labs, undergraduate level, 40 hrs/yr
2019-now	Integrated Science Laboratory III, undergraduate level, 24 hrs/yr
2019-now	PTN Synthetic Biology Module, graduate level, 4 hrs/yr
2017-now	Fundamentals of Life Chemistry, undergraduate level, 48 hrs/yr
2016-now	PTN Chemical Biology Module, graduate level, 4 hrs/yr
2015-now	PTN Neurobiology Module, graduate level, 4 hrs/yr
2017-2020	Chemistry Today, undergraduate level, 16 hrs/yr

RESEARCH SUMMARY

Research in my group can be broadly defined as creating novel chemical tools to study cell functions at high spatio-temporal resolution and with high throughput, particularly in neurons. Neural functions arise through the complex interactions between biological macromolecules, physical forces (e.g. membrane voltage), and chemical signaling (e.g. metabolites). To study cells at these three levels, we develop chemical labeling methods, fluorescent indicators, photoaffinity probes, and integrate these tools with advanced sequencing, proteomics, and imaging techniques.

- **Profiling subcellular transcriptome and proteome with proximity labeling techniques**

In eukaryotic cells, RNAs and proteins are often segregated into subcellular compartments, with their localizations intimately linked to their functions. Yet efforts to investigate the spatial organization of transcriptome and proteome have been hindered by a lack of analytical tools. To address this challenge, my

group has developed proximity labeling techniques to conjugate RNAs and proteins with affinity tags in live cells. One of our technique, called CAP-seq, utilizes a genetically-encoded photosensitizer to mediate the proximity-dependent photo-oxidation of RNA molecules, which are subsequently purified and sequenced. Our CAP-seq data have revealed a model of coordinated mitochondrial protein biogenesis via localized translation.

- **Optical recording of neural activity with engineered fluorescent voltage indicators**

Membrane potential is a fundamental biophysical signal that underlies neural activity. Fluorescent neural activity indicators could complement conventional electrode-based recording by offering high spatial resolution, minimal invasiveness, and highly parallel measurement. My group has contributed to this field by designing and developing hybrid voltage indicators that feature protein-dye conjugate structures. Our method is built upon the site-specific modification of voltage-sensing microbial rhodopsin protein with organic dyes, whose fluorescence is tuned by membrane voltage fluctuations via the electrochromic FRET mechanism. By combining the superior photophysics of organic fluorophores with the genetic targeting of protein scaffold, these hybrid voltage indicators offer both an enhanced sensitivity and a red-shifted spectrum over existing fluorescent protein-based indicators, enabling the all-optical investigation of neuronal electrophysiology.

- **Profiling genomic targets of ROS signaling**

Reactive oxygen species (ROS) have recently emerged as signaling molecules in mammalian cells, including neurons. ROS reacts with DNA to form 8-oxoG as the major product, which is closely associated with neurodegeneration. Genomic profiling of 8-oxoG could help elucidate its function in ROS signaling, but unfortunately, commercially available antibodies towards 8-oxoG are plagued with poor specificity and low binding affinity. My group addressed this challenge by engineering DNA repair enzymes. Through structure-guided mutagenesis, the lyase activity of glycosylase OGG1 is blocked while retaining its ability to recognize 8-oxoG. Its high affinity and target specificity have enabled the identification of >1000 8-oxoG-rich “hot zones” in mouse embryonic fibroblast genome, particularly in CpG islands and in regulatory elements, revealing that guanine oxidation is more likely to accumulate in accessible and transcriptionally active chromatin regions.

PUBLICATIONS

PKU publications (# co-first author; * corresponding author)

1. Liu, S.[#], Lin, C.[#], Xu, Y.[#], Luo, H., Peng, L., Zeng, X., Zheng, H., Chen, P. R.* and **Zou, P.*** (2021). A far-red hybrid voltage indicator enabled by bioorthogonal engineering of rhodopsin on live neurons. *Nat. Chem.* **13**, 472-479.
2. Zhou, Y. and **Zou, P.*** (2021). The evolving capabilities of enzyme-mediated proximity labeling. *Curr. Opin. Chem. Biol.* **60**, 30-38.
3. Liu, Y.[#], Zeng, R.[#], Wang, R., Weng, Y., Wang, R., **Zou, P.*** and Chen, P. R.* (2021). Spatiotemporally resolved subcellular phosphoproteomics. *Proc. Natl. Acad. Sci. U. S. A.* **accepted**. DOI: 10.1073/pnas.2025299118

4. Ke, M., Yuan, X., He, A., Yu, P., Chen, W., Shi, Y., Hunter, T., **Zou, P.** and Tian, R.* (2021). Spatiotemporal profiling of cytosolic signaling complexes in living cells by selective proximity proteomics. *Nat. Commun.* **12**, 71.
5. Wang, S., Lin, C.-W., Carleton, A. E., Cortez, C. L., Johnson, C., Taniguchi, L. E., Sekulovski, N., Townshend, R. F., Basrur, V., Nesvizhskii, A. I., **Zou, P.**, Fu, J.* , Gumucio, D. L.* , Duncan, M. C.* and Taniguchi, K.* (2021). Spatially resolved cell polarity proteomics of a human epiblast model. *Sci. Adv.* **7**, eabd8407.
6. Xu, F., Du, W., Zou, Q., Wang, Y., Zhang, X., Xing, X., Li, Y., Zhang, D., Wang, H., Zhang, W., Hu, X., Liu, X., Liu, X., Zhang, S., Yu, J., Fang, J., Li, F., Zhou, Y., Yue, T., Mi, N., Deng, H., **Zou, P.**, Chen, X., Yang, X.* and Yu, L.* (2020). COPII mitigates ER stress by promoting formation of ER whorls. *Cell Res.* **31**, 141-156.
7. Li, Y., Li, Y., Han, D., Liu, T., Yang, N., Mi, X., Hong, J., Liu, K., He, J., Kuang, C., Zhou, Y., Han, Y., Shi, C., Yu, S., **Zou, P.**, Li, Z.* and Guo, X.* (2021). Inhibition of α -synuclein aggregation improves neuronal apoptosis and delayed postoperative cognitive recovery in aged mice via mitochondrial function. *Oxid. Med. Cell Longev.* **2021**, 5572899.
8. Ding, T.#, Zhu, L.#, Fang, Y., Liu, Y., Tang, W. and **Zou, P.*** (2020). Chromophore-assisted proximity labeling of DNA reveals chromosomal organization in living cells. *Angew. Chem. Int. Ed. Engl.* **59**, 22933-22937.
9. Li, Y., Tian, C., Liu, K., Zhou, Y., Yang, J.* and **Zou, P.*** (2020). A clickable APEX probe for proximity-dependent proteomic profiling in yeast. *Cell Chem. Biol.* **27**, 858-865.
10. Fang, Y. and **Zou, P.*** (2020). Genome-wide mapping of oxidative DNA damage via engineering of 8-oxoguanine DNA glycosylase. *Biochemistry* **59**, 85-89.
11. Li, Y., Liu, K., Zhou, Y., Yang, J.* and **Zou, P.*** (2020). Protocol for proximity-dependent proteomic profiling in yeast cells by APEX and Alk-Ph probe. *STAR Protoc.* **1**, 100137.
12. Yuan, Y.#, Li, Z.#, Yang, N.#, Han, Y., Ji, X., Han, D., Wang, X., Li, Y., Liu, T., Yuan, F., He, J., Liu, Y., Ni, C., **Zou, P.**, Wang, G.* , Guo, X.* and Zhou, Y.* (2020). Exosome alpha-synuclein release in plasma may be associated with postoperative delirium in hip fracture patients. *Front Aging Neurosci.* **12**, 67.
13. Wang, P.#, Tang, W.#, Li, Z.#, Zou, Z., Zhou, Y., Li, R., Xiong, T., Wang, J.* and **Zou, P.*** (2019). Mapping spatial transcriptome with light-activated proximity-dependent RNA labeling. *Nat. Chem. Biol.* **15**, 1110-1119.
14. Zhou, Y.#, Wang, G.#, Wang, P., Li, Z., Yue, T., Wang, J. and **Zou, P.*** (2019). Expanding APEX2 substrates for proximity-dependent labeling of nucleic acids and proteins in living cells. *Angew. Chem. Int. Ed. Engl.* **58**, 11763-11767.
15. Xu, Y.#, Deng, M.#, Zhang, S.#, Yang, J.#, Peng, L., Chu, J.* and **Zou, P.*** (2019). Imaging neuronal activity with fast and sensitive red-shifted electrochromic FRET indicators. *ACS Chem. Neurosci.* **10**, 4768-4775.
16. Wang, C., **Zou, P.**, Yang, C., Liu, L., Cheng, L., He, X., Zhang, L., Zhang, Y., Jiang, H.* and Chen, P.R.* (2019). Dynamic modifications of biomacromolecules: mechanism and chemical interventions. *Sci. China Life Sci.* **62**, 1459-1471.

17. Yu, H., Zhao, T., Liu, S., Wu, Q., Johnson, O., Wu, Z., Zhuang, Z., Shi, Y., Peng, L., He, R., Yang, Y., Sun, J., Wang, X., Xu, H., Zeng, Z., **Zou, P.**, Lei, X., Luo, W.* and Li, Y.* (2019). MRGPRX4 is a bile acid receptor for human cholestatic itch. *Elife* **8**, e48431.
18. Zhou, Y.[#], Zhu, L.[#] and **Zou P.*** (2019). A brief introduction to Nobel Prize in Chemistry 2018: harnessing the power of evolution. *Univ. Chem.* **34**, 1-6.
19. Xu, Y.[#], Peng, L.[#], Wang, S.[#], Wang, A.[#], Ma, R., Zhou, Y., Yang, J., Sun, D. E., Lin, W., Chen, X. and **Zou, P.*** (2018). Hybrid indicators for fast and sensitive voltage imaging. *Angew. Chem. Int. Ed. Engl.* **57**, 3949-3953.
20. Wang, A.[#], Feng, J.[#], Li, Y.* and **Zou, P.*** (2018). Beyond fluorescent proteins: hybrid and bioluminescent indicators for imaging neural activities. *ACS Chem. Neurosci.* **9**, 639-650.
21. Kiskinis, E.[#], Kralj, J. M.[#], **Zou, P.[#]**, Weinstein, E. N.[#], Zhang, H., Tsioras, K., Wiskow, O., Ortega, J. A., Eggan, K.* and Cohen, A. E.* (2018). All-optical electrophysiology for high-throughput functional characterization of a human iPSC-derived motor neuron model of ALS. *Stem Cell Reports* **10**, 1991-2004.
22. Park, K., Kuo, Y., Shvadchak, V., Ingargiola, A., Dai, X., Hsiung, L., Kim, W., Zhou, H., **Zou, P.**, Levine, A. J., Li, J. and Weiss, S.* (2018). Membrane insertion of-and membrane potential sensing by-semiconductor voltage nanosensors: Feasibility demonstration. *Sci. Adv.* **4**, e1601453.
23. Xu, Y., **Zou, P.*** and Cohen, A. E.* (2017). Voltage imaging with genetically encoded indicators. *Curr. Opin. Chem. Biol.* **39**, 1-10.
24. Peng, L.[#], Xu, Y.[#] and **Zou, P.*** (2017). Genetically-encoded voltage indicators. *Chin. Chem. Lett.* **28**, 1925-1928.
25. Abdelfattah, A. S., Farhi, S. L., Zhao, Y. X., Brinks, D., **Zou, P.**, Ruangkittisakul, A., Platisa, J., Pieribone, V. A., Ballanyi, K., Cohen, A. E. and Campbell, R. E.* (2016). A bright and fast red fluorescent protein voltage indicator that reports neuronal activity in organotypic brain slices. *J. Neurosci.* **36**, 2458-2472.

Prior to PKU (# co-first author; * corresponding author)

26. **Zou, P.[#]**, Zhao, Y.[#], Douglass, A. D., Hochbaum, D. R., Brinks, D., Werley, C. A., Harrison, D. J., Campbell, R. E.* and Cohen, A. E.* (2014). Bright and fast multicoloured voltage reporters via electrochromic FRET. *Nat. Commun.* **5**, 4625.
27. Hung, V., **Zou, P.**, Rhee, H. W., Udeshi, N. D., Cracan, V., Svinkina, T., Carr, S. A., Mootha, V. K. and Ting, A. Y.* (2014). Proteomic mapping of the human mitochondrial intermembrane space in live cells via ratiometric APEX tagging. *Mol. Cell* **55**, 332-341.
28. Hochbaum, D. R.[#], Zhao, Y.[#], Farhi, S. L., Klapoetke, N., Werley, C. A., Kapoor, V., **Zou, P.**, Kralj, J. M., Maclaurin, D., Smedemark-Margulies, N., Saulnier, J. L., Boulting, G. L., Straub, C., Cho, Y. K., Melkonian, M., Wong, G. K. S., Harrison, D. J., Murthy, V. N., Sabatini, B. L., Boyden, E. S., Campbell, R. E. and Cohen, A. E.* (2014). All-optical electrophysiology in mammalian neurons using engineered microbial rhodopsins. *Nat. Methods* **11**, 825-833.
29. Rhee, H. W.[#], **Zou, P.[#]**, Udeshi, N. D., Martell, J. D., Mootha, V. K., Carr, S. A. and Ting, A. Y.* (2013). Proteomic mapping of mitochondria in living cells via spatially restricted enzymatic tagging. *Science* **339**, 1328-1331.

30. Scotti, E., Calamai, M., Goulbourne, C. N., Zhang, L., Hong, C., Lin, R. R., Choi, J., Pilch, P. F., Fong, L. G., **Zou, P.**, Ting, A. Y., Pavone, F. S., Young, S. G. and Tontonoz, P.* (2013). IDOL stimulates clathrin-independent endocytosis and multivesicular body-mediated lysosomal degradation of the low-density lipoprotein receptor. *Mol. Cell Biol.* **33**, 1503-1514.
31. Kang, X., Zhong, N., **Zou, P.**, Zhang, S. N., Jin, C. W. and Xia, B.* (2012). Foldon unfolding mediates the interconversion between M-pro-C monomer and 3D domain-swapped dimer. *Proc. Natl. Acad. Sci. U. S. A.* **109**, 14900-14905.
32. Cohen, J. D., **Zou, P.** and Ting, A. Y.* (2012). Site-specific protein modification using lipoic acid ligase and bis-aryl hydrazone formation. *Chembiochem* **13**, 888-894.
33. **Zou, P.** and Ting, A. Y.* (2011). Imaging LDL receptor oligomerization during endocytosis using a co-internalization assay. *ACS Chem. Biol.* **6**, 308-313.
34. Prince, R. N., Schreiter, E. R., **Zou, P.**, Wiley, H. S., Ting, A. Y., Lee, R. T. and Lauffenburger, D. A.* (2010). The heparin-binding domain of HB-EGF mediates localization to sites of cell-cell contact and prevents HB-EGF proteolytic release. *J. Cell Sci.* **123**, 2308-2318.
35. Zhong, N.[#], Zhang, S. N.[#], Xue, F.[#], Kang, X., **Zou, P.**, Chen, J. X., Liang, C., Rao, Z. H., Jin, C. W., Lou, Z. Y.* and Xia, B.* (2009). C-terminal domain of SARS-CoV main protease can form a 3D domain-swapped dimer. *Protein Sci.* **18**, 839-844.
36. Zhong, N., Zhang, S. N., **Zou, P.**, Chen, J. X., Kang, X., Li, Z., Liang, C., Jin, C. W. and Xia, B.* (2008). Without its N-finger, the main protease of severe acute respiratory syndrome coronavirus can form a novel dimer through its C-terminal domain. *J. Virol.* **82**, 4227-4234.

Patents

1. US20140186870, "In vivo proteomics," Alice Y. Ting, Jeffrey Daniel Martell, Hyun-Woo Rhee, **Peng Zou**, July 2014.
2. US20150369740, "Optogenetic probes for measuring membrane potential," Adam E. Cohen, Daniel Hochbaum, **Peng Zou**, Samouil Leon Farhi, Robert Earl Campbell, Yongxin Zhao, Daniel Jed Harrison, Dec. 2015.

INVITED TALKS AND CONFERENCE PRESENTATIONS

1. Chemical probes for neuroscience, the 32nd Chinese Chemical Society Conference (2021/04, Invited Speaker), Zhuhai
2. Hybrid voltage indicators for imaging neuronal activities, ACS 2021 Spring Meeting (2021/04, Invited Speaker), Online
3. Chemical probes for neuroscience, China Brain Science and Technology Conference (2020/12, Invited Speaker), Tianjin (online)
4. Chemical probes for neuroscience, Institute of Automation, CAS (2020/11, Invited Speaker), Beijing
5. Chemical probes for neuroscience, SFBC-ChemBIC Bilateral Symposium (2020/11, Invited Speaker), Beijing
6. Spatiotemporally resolved subcellular transcriptomic profiling CAP-seq, Beijing National Laboratory of Molecular Sciences Symposium (2020/10, Invited Speaker), Beijing

7. Profiling subcellular transcriptome with chromophore-assisted proximity-labeling and sequencing (CAP-seq), Bayer 2020 Online Symposium (2020/08, Invited Speaker), Beijing (online)
8. Mapping spatial transcriptome with chromophore-assisted proximity-dependent RNA labeling, PKU-UChicago Joint Series Symposium on the Intersection of Chemistry and Biology (2020/07, Invited Speaker), Beijing (online)
9. Recent developments in neuronal voltage imaging, ION Seminar Series (2020/06, Invited Speaker), Shanghai (online)
10. Profiling subcellular transcriptome with proximity-dependent RNA labeling, PKU-UCSD Bilateral Symposium (2020/01, Invited Speaker, Session Chair), La Jolla, CA, USA
11. Profiling subcellular transcriptome with proximity-dependent RNA labeling, The Scripps Research Institute (2020/01, Invited Speaker), La Jolla, CA, USA
12. Mapping spatial transcriptome with proximity RNA labeling, The IUPAC International Symposium on Bioorganic Chemistry (ISBOC-12) (2019/12, Invited Speaker), Shenzhen
13. Chromophore-assisted proximity labeling for profiling subcellular transcriptome, The 11th Chinese National Conference on Chemical Biology (2019/11, Invited Speaker), Guangzhou
14. Light-activated proximity labeling of RNA and DNA, The 4th A3 Roundtable Meeting on Chemical Probe Research Hub (2019/11, Invited Speaker), Sendai, Japan
15. Spatially resolved transcriptomic profiling, School of Pharmacy, PKU Medical School (2019/11, Invited Speaker), Beijing
16. Spatially restricted RNA labeling for subcellular transcriptomic analysis, The Chinese Society of Biochemistry and Molecular Biology Annual Meeting (2019/10, Oral Presentation), Taiyuan
17. Light-activated spatial-specific RNA labeling (CAP-seq) reveals organization of subcellular transcriptome, 2019 PKU-SFBC Symposium (2019/10, Invited Speaker, Session Chair), Beijing
18. Hybrid voltage indicators for imaging neuronal activities, Korea Institute of Science and Technology (2019/08, Invited Speaker), Seoul, Korea
19. Mapping spatial transcriptome with light-activated proximity-dependent RNA labeling, Seoul National University (2019/08, Invited Speaker), Seoul, Korea
20. Spatial-specific transcriptome profiling with light-activated proximity labeling, Ajou University (2019/08, Invited Speaker), Suwon, Korea
21. Photosensitized RNA proximity labeling technique, The 1st National RNA Research Conference (Junior) (2019/05, Oral Presentation), Beijing
22. Chemical tools for profiling spatially resolve omics, Dalian Institute of Chemical Physics, CAS (2019/05, Invited Speaker), Dalian
23. Spatial transcriptomic profiling with light-activated proximity labeling, POSTECH-IBS-PKU Conference for Chemical Biology and Biomaterial (2019/04, Invited Speaker), Pohang, Korea
24. Next-generation fluorescent voltage indicators, The 3rd Fluorescent Probe and Imaging Symposium (2019/04, Invited Speaker), Xi'an
25. Mapping spatial transcriptome with light-activated proximity-dependent RNA labeling (CAP-seq), Hokkaido University & Peking University Joint Symposium (2019/01, Invited Speaker), Sapporo, Japan

26. Mapping spatial transcriptome via chromophore-assisted proximity tagging (CAPtag), HKU Chemical Biology Symposium 2018 (2018/12, Invited Speaker, Session Chair), Hong Kong
27. Beyond fluorescent proteins: hybrid voltage indicators for voltage imaging, National Institute of Biological Sciences (2018/12, Invited Speaker), Beijing
28. Beyond fluorescent proteins: hybrid voltage indicators for imaging bioelectricity, ACS Publication Symposium (2018/12, Oral Presentation), Beijing
29. Profiling subcellular transcriptome via proximity tagging techniques, The 3rd A3 Roundtable Meeting on Chemical Probe Research Hub (2018/11, Invited Speaker), Jeju, Korea
30. Profiling subcellular transcriptome via Chromophore-assisted proximity tagging (CAP-tag), The 5th Asian Chemical Biology Conference (2018/08, Oral Presentation, Session Chair), Xi'an
31. Hybrid voltage indicators, The 5th National Conference of Biophysical Chemistry (2018/07, Oral Presentation), Taiyuan
32. Spatially specific RNA profiling via chromophore-assisted proximity tagging (CAP-tag), The 31st Chinese Chemical Society Conference (2018/05, Oral Presentation), Hangzhou
33. Hybrid Voltage Indicators for Mapping Neural Activity, PKU-UC Davis Bilateral Symposium (2018/05, Invited Speaker), Beijing
34. Chemical probes for neuroscience, Academy of Military Medical Sciences (2018/01, Invited Speaker), Beijing
35. Chemical Probes for Neural Activities, The 15th Chinese Biophysics Congress (2017/11, Invited Speaker), Shanghai
36. Chromophore-assisted Proximity Tagging of RNA, The 2nd A3 Roundtable Meeting on Chemical Probe Research Hub (2017/11, Invited Speaker), Hangzhou
37. Chemical probes for neuroscience, The 10th Chinese National Conference on Chemical Biology (2017/09, Invited Speaker), Wuhan
38. Voltage imaging with genetically-encoded indicators, The 2nd Biomedical Imaging Method Symposium (2017/08, Invited Speaker), Xi'an
39. Lighting up the brain with a flare, Institute of Microbiology, CAS (2017/05, Invited Speaker), Beijing
40. Lighting up the brain with a flare: a hybrid voltage indicator for optical mapping of neural activity, The 1st Peking University-Boehringer Ingelheim Joint Symposium on Biomedical Research (2017/05, Invited Speaker), Beijing
41. Imaging neuronal action potentials at high spatial and temporal resolutions, The 1st Fluorescent Probe and Imaging Symposium (2017/04, Invited Speaker), Dalian
42. Imaging neuronal signaling with genetically-encoded voltage indicators, HOPE meeting (2017/02, Oral Presentation), Tokyo, Japan
43. Enzyme-mediated proximity tagging for spatially mapping biomolecules, Symposium at Institute of Biological Chemistry, Academia Sinica (2016/11, Invited Speaker), Taiwan
44. Spatially resolved proteomic labeling technique, Chinese Society of Biochemistry and Molecular Biology Conference (2016/10, Oral Presentation), Hangzhou
45. APEX: spatially specific proteomic profiling, The 30th Chinese Chemical Society Conference (2016/07, Oral Presentation), Dalian

46. Genetically encoded voltage indicators based on electrochromic FRET, National Conference of Biophysical Chemistry (2016/06, Invited Speaker), Hefei
47. Mapping the subcellular proteome via APEX labeling, The 9th CNHUPO Conference (2016/05, Oral Presentation), Xiamen
48. Mapping the subcellular proteome via APEX labeling, Frontiers in Proteomics, National Center for Protein Sciences (2016/04, Invited Speaker), Beijing
49. Mapping the subcellular proteome via APEX labeling, PKU-HKU Joint Symposium on Chemical Biology (2016/04, Invited Speaker), Hongkong
50. Subcellular proteomic profiling techniques, Health Science Forum, Shanghai Institutes for Biological Sciences (2016/03, Invited Speaker), Shanghai
51. Fluorescent voltage indicators, The 2015 Annual Symposium for the Undergraduate Students of Bio-Liyun (ASUSBioLY) (2016/02, Invited Speaker), Beijing
52. Proteomic profiling of mitochondria, National Institute of Biological Sciences (2015/12, Invited Speaker), Beijing
53. Genetically-encoded voltage indicators based on electrochromic FRET, Cold Spring Harbor Asia Conference (2015/12, Oral Presentation), Suzhou
54. Spatially specific proteomic profiling techniques, The 5th Symposium of the Chinese Protein Society (2015/10, Invited Speaker), Jining
55. Chemical probes for neuroscience, PKU-Sun Yat-sen University Joint Symposium on Chemical Biology (2015/10, Invited Speaker), Guangzhou
56. Fluorescent voltage indicators, The 9th Chinese National Conference on Chemical Biology (2015/08, Invited Speaker), Tianjin
57. Bright and fast multi-colored voltage reporters via electrochromic FRET, Janelia Farm Research Campus, Howard Hughes Medical Institute (2014/09, Oral Presentation, Session Chair), Virginia, USA
58. Imaging neural activities with fluorescent voltage-indicating proteins, BIOPIC, Peking University (2014/02, Invited Speaker), Beijing
59. Enzyme-mediated promiscuous protein labeling method for mapping proteomes in living cells, Bioimaging Club, University of Michigan (2013/07, Invited Speaker), Ann Arbor, MI, USA